

S T U D Y A S S O C I A T I O N

G E W I S

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EDITION**



EDITORIAL

Exploring the Earth is something that is important for all of us. Not just in means of travelling, although it is also a lot of fun to discover new places too. I have visited 24 countries so far, and hope to visit many more, but it seems like my exploration has to be put on hold for now.

EDITOR IN CHIEF Anne Nijsten

Although, not completely: during the past few months a lot of online communities have arisen. One of my hobbies is origami, the art of paper folding (and the maths behind it), but I did not know anyone to share this passion with. To meet some new people I would have to visit some convention or conference abroad. With the worldwide lockdowns, these events have moved online, resulting in opportunities to meet with many designers and people who are happy to share their experience and work. In the end, I even met some people in Eindhoven when the world opened up a bit in summer!

Origami may not interest everyone, but exploring the world for something that you like is important to stay motivated during difficult times. As our university already is a small world by itself, we have collected some explorations by GEWIS members, department staff and companies in this Supremum to give you an update of topics worth exploring!

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CHAIRMAN'S NOTE

As a board member it's very important to stay down to earth. GEWIS is an association with lots of different members and the board wants to accept each and every one of its members. But how does one do this?

TEXT Irne Verwijst

New Year, new chairman! For the people that don't know me yet, I am Irne Verwijst and since the 1st of July I am fulfilling the role of chairman in the 39th board of GEWIS. Me and my board started our board year a little (read: a lot) differently than other GEWIS boards did. During the first two months, we were working from home. Having board meetings via Discord and not seeing my other board members that often in person was hard.

“ This was not what we were expecting when we signed up to be board members. Nonetheless we are making the best of our board year! ”

When we got to go back to the board room of GEWIS, we had to adjust to each other's way of working. Also, we did not have the opportunity to get into close contact with the members of GEWIS. This was not what we were expecting when we signed up to be board members. Nonetheless we are making the best of our board year! As the saying goes, you should enjoy the little things. I can tell you that we are. Small things, like a member coming to you with a suggestion or compliment means a lot. Also, positive feedback in

these times is very much appreciated. These things help us, the board, stay humble and most of all, down to earth!

“ Small things, like a member coming to you with a suggestion or compliment means a lot. ”

Coming back to my question 'How does one stay down to earth?'. Well, I think you have to keep a positive eye on the situation that you are in. What are the possibilities that your situation brings? What things can you do now that you could not have done otherwise? I encourage you all to keep these questions in mind during these challenging times!

“ I think you have to keep a positive eye on the situation that you are in. ”

EDUCATION FIRST

The Earth is caught up in a global pandemic and our university is no exception. With a lot of challenges remaining to be solved, the change of online education has mostly been a smooth one. Some points of frustration still linger, waiting to be improved with your help! As the new Educational Officer of GEWIS I hope to tell you how.

TEXT Koen de Nooij

Change, change, change. It's something we've all experienced in the past few months. Even if you're a first-year student, you have already had to adapt to many changes made to your courses. These vary from handing in your homework through Canvas, to asking questions in online tutor hours, to a complete restructured grading scheme. You might have had a much-needed refresher on your LaTeX skills, sought new ways of working together with your group members or friends on homework, and somewhere along the way you probably got frustrated quite a bit with the lack of interaction, unclear course organization, and less-than-perfect online lectures. One thing to remember though, is that you're not alone!

In the first quartile, we've organized the Round Table Discussions (Kringgesprekken) online with very high attendance. It proved useful if students gave short feedback beforehand, such that the discussions remained focussed on the most important topics. Together with students and teachers, we evaluated much of what was going well and what could still be improved. It was clear that both students and teachers are aching for more interaction within the boundaries set due to the Corona pandemic. Furthermore, in the discussions I also noticed that smaller videos about different topics are well-received. It appears they're easier to digest for students and more interesting to make for lecturers. Lastly, having Questions & Answers moments, polls and quizzes are popular methods to increase the interaction within a course.

Although not every course is perfect from the start, we can be thankful that lecturers are taking on the challenging task of converting their courses to an online setting. Furthermore, every lecturer has a different approach. As a student you might not realize how much time is put into this process; Not only does the situation ask more from students, it also requires teachers to be more creative. They spend a lot of time researching different tools and methods, setting up exercises, lectures and tutor hours in an entirely different way. Hopefully, with your feedback we can all learn from the different approaches and see what works best. As I already stated, interaction between students and teachers is minimal right now. This can lead to frustration and misunderstanding: Students may feel like teachers do not put in all their effort and teachers may feel like students are not motivated. I encourage you to give your feedback directly to teachers, in round table discussions, and in course evaluations. Hopefully this leads to more understanding and improvement of your education!

Although things are going much better than I expected, I hope that in the upcoming months we can improve online and hybrid courses even more. Thus, we can ensure a smooth transition to the way things used to be, but most importantly: Take what we have learnt and use it in the future! Good luck with your courses and feel free to reach out to me about anything related to education at co@gewis.nl. Together we keep the Earth spinning!



DOWN TO EARTH

When I write this piece, we are going through one of the most insecure times in recent history. A pandemic is raging, it's Election Day in the United States, and terrorists have hit several European cities. All these events, and more, call for our immediate attention. Your family may be impacted by Covid-19. You yourself are restricted in living the life you were looking for. When you are in the moment, it is difficult to see beyond.

TEXT dr. Robert van der Drift (managing director)

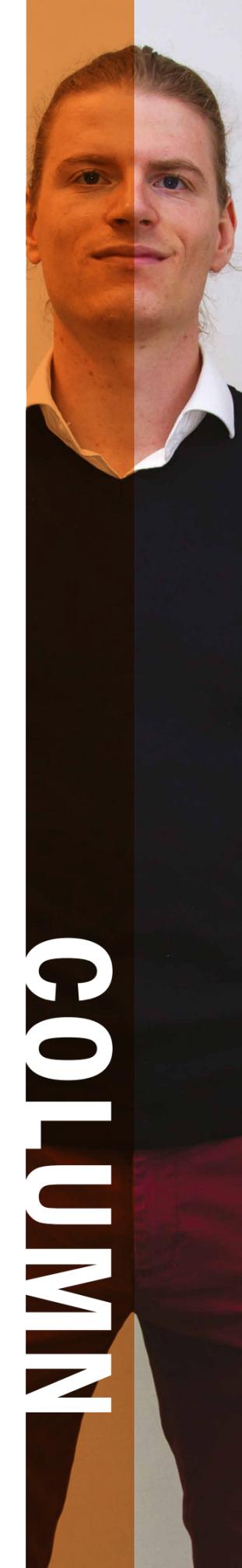
Yet, when you will be reading this piece, the world may look altogether different. Autumn turned into winter, spring is around the corner. Four more years for Donald Trump (updates are coming in while I type, it's going to be close!), vaccines available for everybody. New events dominate the headlines. Before we know it, mayor events of today are just a story you tell your children.

It is the small cycles that catch our attention. We are wired for that. Who bothers with the seasons when a lion is about to make you his dinner? However, humankind has expanded its look on time cycles continuously. When we became farmers, the seasons started to govern our thoughts. Then we started to realise larger cycles, e.g. of the solar activity and the precession of Earth's axis. With the expanded outlook, our optimism started to grow. Humans became, by far, the dominating species on Earth. Technology helped us control nature. But, unfortunately, it also helps us destroy it.

We started to realise that Earth has completely different timelines. We are now able to see the bigger picture. She has been turning around the sun for over 4.5 billion years, and will probably continue to do so for another 5 billion. The big question of course is: will 'we' be there to bear witness? Well, Earth has its ways to show us we are not in command. Hurricanes, volcanic eruptions, and floods attest to that every year. Somehow, we seem to struggle for that command. How

else can you explain our continuous efforts to self-destruct? Greenhouse gas-levels are rising. Plastic is now the dominant species in Earth's oceans. If you add it all up, it does look like a concerted effort to gain control. But it isn't, of course. An individual throwing a plastic cup to the curb is probably just lazy or careless, not part of a bigger plot to teach Earth a lesson. The problem is in a combination of factors. We are 7 billion and rising. We have the technology to have global impact, rather than local. And we know what our neighbours have, that we can have more, want more.

So, if the problem is in the numbers, the answer may be, too. We all need to look down to earth. And stop and wonder: "Am I part of the answer?". Future generations will thank us for that.



DISCIPLINE BY DEFAULT

At the time of writing the coronavirus has laid waste to most of the world. The consequences for the university have been astonishing, a true desolation of academia. Yet, this is in our past and we must look towards the future. Therefore, it is morally responsible to give the freshmen, who will inevitably read the magazine that mysteriously appeared in the letterbox, a few wise words.

TEXT Yoram Meijaard

First of all, welcome to the university. Hopefully you will enjoy your time here and leave this place a better, more educated individual. Hopefully you enjoyed your first introduction week, even though you can only truly experience it as a "parent". Note that terminology will typically become apparent later, there is a lot of vocabulary to keep up with; in no time you'll be doing a *kleintje bij Hubble, bakken vouwen op Stratum*, in order to spend the next day *uitbrakken met een uitstelbiertje*.

Pleasures aside, allow me to bestow upon thee a wisdom obtained through experience: there is no student life, without studying. Sure, you could spend all day, every day watching Netflix, chilling at 't *Dakerras* and spending your evenings in whatever bar is open. No-one will judge, except the counter of doom i.e. the DUO *studieschuld* widget.

Now, in order to make it through and obtain a degree in the end that is actually worth your debt of tens of thousands of euro's, it is useful to get your mind across a concept called discipline.

Discipline is what gets you up in the morning to go to class. Discipline is what makes you be on time with yet-another-deadline. Discipline is the reason that eventually, you will make it through any class, no matter how difficult.

The problem is that most computer scientists and mathematicians never needed discipline. Why would you study if you aced all your classes in high school without any difficulty? Yeah, that time is over. At the

TU/e, everyone is clever, and smart, and brilliant. Don't be that guy who has to retake the calculus exam 10 times.

Discipline is the root of success, in both the academic and the real world. Discipline is trainable, if you put in the effort, you'll get better at being disciplined.

There are many ways to go about training discipline, and in my experience, the best way is through physical exercise. Fun fact, students have been the primary practitioners of rowing, fencing and rugby for centuries. Students have always known that spending all day inside with books and paper is detrimental to their development.

As for you, my dear freshmen, moving to a new city, starting at the TU/e, provides a neat opportunity to either start exercising, or exploring new forms of sport. Check the website of the SSC, join whatever sports club you want; you might even consider the GEWIS Bata-team. In parallel to practising discipline, exercise provides some protection (note: no immunity, this is inevitable) against the *jaarringen, welvaartsbuikjes, or bestuurskilo's*.

After six years it is my pleasure to hand over the baton to the next generation of our indefinite education relay race. I hope you enjoy your time at the TU/e as much as I have.

PS do take this advice with a grain of salt: don't kill yourselves in order to be disciplined at everything.

INTRO AND FLUP

Sadly, because of the spooky virus we couldn't have an intro and flup like other years had. Which is devastating, because we heard a ton of hysterical stories about [fun] stuff, which happened during the intro and Flup of previous years. Of course everyone tried to make it as normal and fun as possible, while occasionally hearing someone shout "Keep your distance".

TEXT Franciska Asma and Jelmer Lap

BYWADDUP WITH INTRO

Uni decided to have a hybrid form of intro. We had three days online and two days on campus. They even made an app for us, which we could use during the week. Of course there were some people stressing when we weren't able to log into the app a few days before intro, although uni told us we should be able to. Fortunately, the app started working on Monday. So, on Monday morning, we all had a first meeting with our intro-parent. All dressed-up and excited for the intro finally to start, the meeting was just about asking if you had any symptoms. Next up the important people wanted to wish us the best of luck with our studies. After staring at our screen for multiple hours, we were about to stare at our screens for a bit longer. Fortunately this activity was a bit more interactive. Studium Generale prepared a beautiful quiz for us. Except for the lag, which is a natural side effect of online activities, we had a lot of fun and started to feel competitive.



The next online day wasn't as exciting. So we skip to Wednesday.

On Wednesday we went to campus. I remember we had to be there at nine o'clock. Of course I wanted to be on time, but since it was the first time on campus I had some trouble finding the group. We had to go all the way to the hockey fields and it was a real relief when I finally found my group. We then received our gadgets. The gadgets are always an important part of the intro. It was really fun to see which group someone belonged to by checking the gadgets they were wearing. Especially the group with the diapers stood out. All dressed up we started wandering around the market and trying a lot of different stuff with all the different associations. It was nice to finally have some interaction with the group. During the rest of the week we learned more about the various associations and had a lot of fun.



HIGHS AND LOWS

So, what did we think about the intro activities? There were a lot of highs. The market, for example, was really enjoyable. All the associations presented very fun activities spread over the campus. Take the Elephants

for example, with their tackle bags, or All Terrain with an amazing obstacle course and let's not forget about Studentenscouting Eindhoven with an inventive triangle walk. One very important high was the food. Every intro-parent could agree, the food was better than any year before.

Sadly there were also some negative parts, like Tuesday. With 4 presentations and no interactive activities, the average student's attention span was easily broken. I'll admit, our group even stopped participating and started bonding over the boringness of the day. So you see, every negative has a positive. Moreover, the online workshops were not bad, but also not very exciting. Of course, this has to do with the limited amount of options an online environment has to offer. A lot of people also missed the drinks during the introweek, this was completely forbidden, which restricted some bonding activities that would normally have happened. In the end, we can still say we had a lot of fun, even though there were a lot of restrictions.

FLUP

First thing we asked ourselves was: why is it called the FLUP? Isn't that kind of a lame name? But it stands for "follow up", the follow up of the intro week. Normally it's a whole weekend spent with fellow first-years, but like everything else this year, nothing goes like it usually goes. So the team of GEWIS had to be creative and still make something out of this activity, while taking the corona measures into account.

What is the best alternative for a weekend of fun? Cycling and food of course! Eindhoven was littered with all of the fraternities who did their best to organize games which, despite corona, could be played.

FRATERNITIES AND A WHOLE LOT OF FUN

First-off we have GELIMBO, the only thing I can say is that it was pretty chaotic, think of doing a corona-proof polonaise, non-alcoholic lemonade shots and making balloon animals. Who would expect anything else from a fraternity of which Carnival is a big part? Then we cycled all the way to the south of Eindhoven to Défi! Here we did a game where we had to whisper



and guess which words the other person was saying, I'll confess now that I cheated, I could hear the others the whole time. Next on the list was B.O.O.M., that's where the segregation and the need to beat the other team started. The exact moment was when we started playing dodgeball, spoiler alert: we won. Next to B.O.O.M. was GEPWNAGE where we played a game of blind Pacman, where his controls were screaming different amounts of "waka". This was by far my favourite game. Cycling on to ATHENA where we played a few games of charades and heard great stories about a high beer which I sadly couldn't join. Going on to a small cantus from I.V.V, after which I had almost completely lost my voice. Last but not least, we had a mock-general members meeting (or algemene leden vergadering in Dutch). For this, Koen set up a great idea of the GEWIS cinematic universe, which I still fully support! Then, the pizza arrived, we had a little chat at the end and like that, it ended.

HOW TO MAKE UP FOR ALL THE THINGS WE MISSED

Even though intro and FLUP were a lot of fun, it still feels like we missed out on some stuff. Of course, the activities helped us to meet new people and we learned about all the stuff you can do on the TU/e, but it's not how we imagined our first year of being a student to start. Luckily, there is a simple and obvious solution for us to make up for this intro. Once the corona measures are over (if they will ever be), we can just become intro-parents ourselves! In that way, we will be able to experience all the weird stuff which happens during a normal intro. All problems solved!



THE BLUE OF BLOOD SWEAT AND TEARS

A LAST BOW

It's been a while now, and when I read back my previous article on behalf of my board in the Disaster Edition of this magazine, I immediately become nostalgic again. No, a board year is certainly not easy, but what you get in return is all worth it. The memories of everything we've been through, the problems we've had to solve and the lessons we've learned will always stay with me.

TEXT Bouke Bosma (secretary of the 38th board of GEWIS)

You start your year completely naive. You are prepared for most of what will come from your predecessor, but you really realize how exhausting and debilitating a board year is only after you have started. It all really starts during the intro. The first week where you have to be present at full capacity as a board, and where something is asked of you at any moment. Fortunately, the intro is also a highlight of your year and a place where you already get to know a lot of your sjaarzen. But, at least for me, it was the first moment in my board year where I let blood, sweat, and even tears flow.

And after that week you think: "Well, it's over, now it's calming down a bit". Again very naive, of course. Before your weekend is over and you've been able to get your rest, the "boekenborrel" comes around the door and you have to be ready for all the people who have questions. And as a former secretary of our association, I can tell you that there are a lot of questions in about a week before the new year. What helps is that during the vacations you have already become a real unit with your board, and you can rely on each other because you know exactly what you have to offer each other. Fortunately, the next highlight of the year is approaching.

Before you arrived at the FLUP, many liters of free golden fun-pipes have passed everyone's uvula at

different constitution drinks, so being under the influence has become second nature at this point. Many sjaarsjes also experienced this when they thought they could beat us in a game of beerpong. Of course, there were also other challengers, but the final score at the end of the day for team board was 10 games won and 0 lost. There you are with your beautiful words of 11 o'clock in the morning with a grilled cheese sandwich in your mouth: "Okay, one game then". The rest of the day was of course so unforgettable that the memories are missing.

Anyway, it all sounds nice, but it also has its downside. In the first quartile, I also had two courses I had to take, out of a total of four during my board year, so I would get my Bachelor. In hindsight, it's nice to say that I succeeded as well, but the mental stress this caused, in combination with personal circumstances, made me several years older in a month. It was killing me and I would never do that again.

Luckily, after such a first quartile with a lot of constitution drinks, there is always the rest of the year. Your board work becomes more and more routine and you work faster, you have to go to fewer things and you can focus more on GEWIS activities and yourself. This shouldn't have come much later for me, but fortunately, my board was aware of this as well,



and they gave me complete peace of mind. Besides that, I am also someone who does not allow themselves to be knocked out of the field, so they wouldn't have gotten rid of me anyway!

And you notice, when you've found your peace and quiet again, your year will be a lot more fun. One of my highlights that I would like to share with you is the WISO in Groningen. What a half-baked WISO that was, man. At a WISO there are all kinds of motions you have to stick to as an organizing association, and of course, this didn't happen. Not to such an extent that eventually a motion of no-confidence was made by the other parties present. So a new president of the meeting had to be elected, and after having trumped the president of Thalia, I turned out to be a suitable candidate for this position. It was not as if I had been listened to, but it felt nice to get an apology from CH, our sister association in Delft, because you slammed a table in half so they were quiet.

The last part of the year we had to deal with some kind of virus that threw a spanner in the works for all the physical activities. I remember very well that just before this time I told my board that I really wasn't finished being the board of our toko, and that I really wanted to go on for another year. Although this is of course not a real option at all, I am also glad that I did not really choose this. During this period many (read: almost all) nice things fell out of our board year and

it was just doing your duties. I also did not get through this period without shedding a tear.

All in all, looking back at my board year, a lot of lessons were learned, memories were made and people were met. But everything has its time. I felt very empty just after I had been knocked out. The blue that I had been wearing all year with my board had moved from the outside to the inside of my body. The blue of blood, sweat and tears, which just suddenly passed away. But only partially, because what I learned, my buddies forever Kees, Anne, Romy, Bas, Suus and Ruben, and all the memories produced can never be taken away from me. And that is why I am ready to leave this blue feeling behind me. So here's my last bow. Thank you for letting me be your secretary!





NATURE'S HAPPY ACCIDENTS

Earth is filled with noteworthy people. Be it the intellectuals who lay the foundations for modern science and education, like Albert Einstein and Georg Prokert, or the comedians who never fail to bring out a laugh in others, such as Rowan Atkinson. But we humans are only one of the organisms inhabiting this planet filled with life. For this article, I went on a journey through the vast and dangerous landscape that most of us refer to as the internet, and returned with some of the most interesting flora and fauna I could find.

TEXT Tobin van den Hurk - B.O.O.M.

We all know some people who seem tough on the outside, but beneath their outer shell, there is actually a rather soft person, just like a turtle! Except that not all turtles carry a protective shield on their backs. There is an entire family of turtle species known as softshell turtles that look like they were dropped from a 12-story student housing complex and spent the next 2 weeks melting in a summer-of-2020-heatwave. After not seeing it move for these 2 weeks, people would consider the poor thing to have passed away. However, this conclusion is rather hasty, as the Asian giant softshell turtle spends 95% of its life motionless. It prefers being buried close to the surface, coming up to take a breath twice a day. It's official: This animal both looks and behaves just like a freshman the day after his or her first GEWIS party.



This next section is rather minimalistic in writing, forcing me to show off my expertise in compensating and show you a rich plethora of awe-inspiring pictures to keep you as reader satisfied. Slugs are the most horrible and disgusting animal on the entire planet, according to a conducted survey of our panel consisting of myself and myself only. It has recently come to my attention, however, that sea slugs look surprisingly mesmerizing. Their bright colours warn predators of their poisonous properties, similar to frogs. Behold this little collection of mine.

Most of us have heard of YouTuber Logan Paul, and those who have must surely be excited to hear that the infamous YouTuber is now allegedly preparing to have a boxing match with none other than Floyd Mayweather. While it is no secret that some people out there (e.g. some Supremum article authors) would love to see Logan Paul get destroyed by a professional boxer, humans are not the animal that packs the fastest punch. For those expecting the winner to be either a gorilla, grizzly bear, or a dolphin: You're wrong. Especially Team Dolphin, you are very wrong. Our boxing champion does live in the ocean, though. The mantis shrimp can use its club to perform a punch-like movement at a speed of about 22m/s, which is about 50% faster than a professional boxer. These little fellows would fit perfectly in Woensel as their punch



is faster than the acceleration of a bullet and can actually break right through glass. But there's more! If you detach one of their clubs, they simply grow them back, they have remarkably good vision, and they are coated with a surprisingly resilient armour. The mantis shrimp is now officially my second favourite superhero, right below The Crimson Chin.



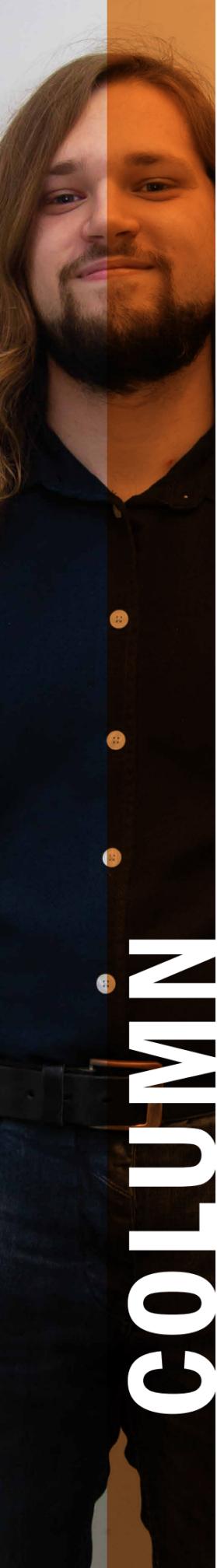
Time for a beauty contest. I am not talking about one of those pageants where people decide on who is the prettiest, but rather a contest on which animal is so ridiculously ugly or strange that it deserves some recognition for it, similar to what happened with Honey Boo Boo. Our first contestant is an animal that is undoubtedly known by some of you: the blobfish. This fish looks like a jellyfish had a baby with Squidward. Apparently, its ugliness can be explained through simple physics. This sad bag of jello is supposed to live in depths over 1000 meters. The combination of

the great difference in atmospheric pressure and the lack of any form of skeleton makes the blobfish's insides drool outwards when pulled out of the water, making it look the way it does.

The second contender for weirdest animal is the atretochoana eiselti. Very little is known about the animal, as it has only been spotted twice in Brazil. Due to its rarity, I fear we will never know why this animal received its mysterious nickname, "penis snake". Even if you had not heard of the blobfish and you have never seen a penis before, then I truly hope the generations reading this are old enough to have watched Kim Possible in their childhood. Anyone who watched this show A) instantly developed a weak spot for redheads and B) knows what a naked mole rat looks like in 2D. While I was aware that the naked mole-rat (as its name suggests) surely is no pretty animal, I was nevertheless shook when I found out how hilariously ugly they are in 3 dimensions. It is for this reason that the naked mole-rat is our third and final contestant for our beauty contest. The animal looks somewhat similar to a demented old man who is wandering around a supermarket naked and confused, wondering how the hell he ended up there.

Hopefully, this article taught you something new and made you feel a little bit less insecure when looking at yourself in the mirror. If you know any crazy animals, or have a strong opinion on who should win the beauty contest, feel free to let me know! I leave you with a shoutout to my homeboys David Attenborough and Freek Vonk.





A GENIE(US) IN A BOTTLE FULL OF RAIN

I must admit in all honesty that the genre 'Singer-songwriter' has never been one that I found interesting. I always imagined those artists featuring an acoustic steel guitar, some very sad lyrics about a breakup or a difficult life situation, followed by the magical words 'but it is all going to be fine' accompanied with a silly Fedora and BOOM the whole issue is fixed now. I generally do not get a lot of musical satisfaction from these types of topics. It turns quite monotone, quite quickly. I can say that my view upon singer-songwriters nowadays is way less tunnel-visioned than before. I discovered some singer-songwriters who were actually able to catch my attention, without the means of the typical singer-songwriter image. One of these artists is one that I want to highlight in this edition: Tom Waits.

TEXT Lars Verstraelen

In a time where the COVID-19 outbreak and the Australia bushfires would signal the start of a new year, for me it would start with the discovery of some very classical musicians. My nephew advised me to listen to Leonard Cohen and Bob Dylan, which I almost immediately found fascinating. Experiencing their music in a serious listen for the first time was wonderful in its own right, and I decided to be more open minded towards singer-songwriters from their time periods. A little while later however, my nephew came to me with an amazing discovery: the album Rain Dogs from Tom Waits. To say that a new world opened in front of me would be a total understatement.

Even though I just described my previous vision of singer-songwriters as writers of whine-music with a guitar, Cohen and Dylan still kind of kick started that in the sense that they brought personal emotion instead of mere observation into songwriting. It would still be accompanied with guitars and pianos, but whatever. Tom Waits, however, does not adhere to a sound that can be cast into this mold. In fact, you would not easily be able to find songs – written by him – that would sound even remotely standard or comfortable. You'd be lucky if you could 100% focus on a guitar or a piano during his songs. More often

than not, Waits' music on Rain Dogs features some very tribal sounds, where xylophones, woodblocks, marimba's and drums are very likely to find a passage. It creates a vibe that is rather natural and tribal. This could not be achieved if guitars or pianos were included as it would add 'manufactured' sounds, whereas the simplicity of just having the beat makes for the most natural and engaging experience. The whole record was filled with beautiful but rough and honest ambience, all mixed together with Tom Waits' lyrics. The way in which Waits would deliver these however, is what really stood out to me.

Messages in singer-songwriting music need to be conveyed with a captivating voice, otherwise it is hard to understand that the music 'comes from the heart'. Tom Waits agrees with this, but not in a way in which you would expect a singer songwriter to. He utilizes three different voices: Imp, Demonhound and Grandfather. The Imp is the voice that you would very clearly hear in the song 'Clap Hands'. It is very hard for me to describe that voice without it sounding like a joke: it sounds like the little devil that would sit on your shoulder, arguing with the angel about what you should do in a dilemma. It is naggy, sassy and guttural; perfect for songs that feature some very tribal

backgrounds – and most definitely fantastic considering that the lyrics of 'Clap Hands' are written about a fairytale going full schizo. The Demonhound voice, which you could really hear well on songs like 'Cemetery Polka' and 'Chicago', comes deep from Tom Waits' stomach. It sounds a bit like a dog barking a sea shanty, especially when he spurs some quick short words out. I especially love the way in which he shouts 'CLAP HANDS' in this voice during one of his more famous live performances. It really catches your attention, as you feel like it is story time back in kindergarten; your teacher comes up with different voices for the characters in the story, and each one captivates you more strongly than the previous one. The Grandfather luckily sounds as you would expect: it is a very gentle voice, a bit more melodic and accompanies the more sensitive lyrics, such as those on 'Hang Down Your Head' and 'Time'. If the above mentioned songs are a bit too strange, then these songs are a good way of smoothly understanding Tom Waits. It is accompanied by some guitars and simple percussion, which makes the songs quite bite-sized. The voices that live in Tom Waits' head thus create an impressive spectrum in which he narrates his strange musical world.

But what exactly is it that he tries to narrate? Normally, if we were to accept the over-generalized idea of a singer-songwriter, the lyrics are meant to be about heartbreak, loss, love, overcoming life's obstacles, or other subjects that touch life in some fashion. Waits would however gladly sell those subjects by the pound; what the man tries to touch lives way more in the realm of the surreal. As briefly mentioned before, a song like 'Clap Hands' is literally about plots of fairy tales becoming twisted or illogical within the story. Waits does not fully appreciate the touchable or the easily digestible. To name some more examples: 'Cemetery Polka' is (among others, because this song sells weirdness like hotcakes) dealing with digging up old family members together with their hidden cash. Now, I never said that his music is even somewhat normal. Some subjects however are very multi-interpretable: 'What's He Building?' is either



- » a song about a man wondering what another man is doing in his house, implying it to be dangerous or worrying
- » a song about how easy it is for people to make up conspiracies and rumors.

Tom Waits

He has a very clear understanding of how things are either strange by nature, or by self-infliction.

Now, I always like writing about and enthusing others to listen to the same clusterfucks of music that I enjoy. But this time, this little capture of Waits' music is not another opportunity to show the next weird thing in music. I wanted to write about this music because it opened my imagination in many more ways than other artists have done to me. Waits has the ability to describe the touchable concepts in life in a very abstract manner, while also knowing perfectly well that the abstract can be materialized or at least imaginable. As a to-be mathematician, this is in some way what we are doing on a daily basis: we make reality abstract, and we make the abstract recognizable. In the same way that I consider mathematics art, I consider Tom Waits' music art. He presents a new way to speak about the imaginative, all while staying close to simplicity, concreteness and the natural; it is mathematics on a musical tray (also known as Tom Waits' ashtray).



A TECHNICAL INTRODUCTION TO SINGLE SIGN-ON

The term Single Sign-On (SSO) has multiple meanings in the industry. A well known one is to describe users signing into a platform once and gaining access to multiple applications. However, a SSO solution can provide a lot more than just simplified authentication.

TEXT ISAAC

It can provide:

- » Authorization based on roles to restrict or allow access to certain resources;
- » Centralized user management, making it easier to audit and be compliant to certain certifications;
- » Supporting multiple authentication protocols to connect to other identity providers;
- » Connect legacy systems to integrate with existing user bases;
- » Integrate multi factor authentication into the login flow.

In addition, these solutions provide the benefit of having the authentication mechanism centralized and based on standards. This means not having to deal with authentication, or storing of user data in applications that need some form of login functionality.

SSO FLOW

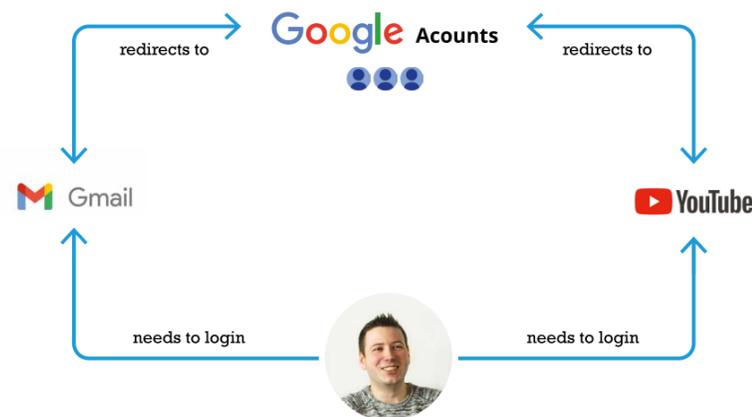
Before we go into the details of what SSO solutions can provide, the below image will be explained to give

a better understanding of the standard Single Sign-On use case.

As a user you want to be able to access the web application provided by Google called Gmail. In SSO terms, an application that needs authentication is called a resource service. To gain access to the application, the user will need to authenticate itself with Google.

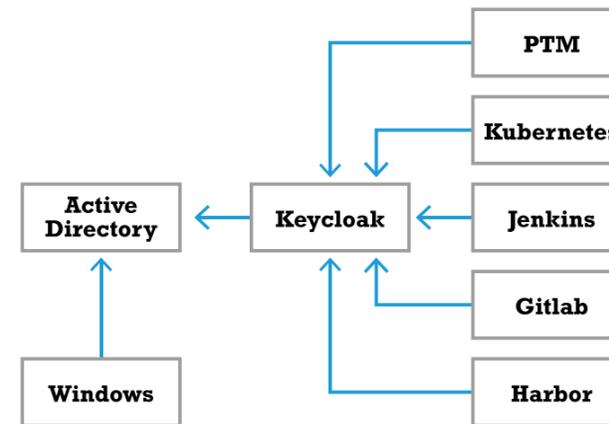
Google is the Identity provider which holds the credentials of the user account and can validate the users provided credentials. Once successfully authenticated, the user gains access to the Gmail application.

Afterwards, the user wants to watch a video on YouTube. As YouTube is also an application of Google, the same identity provider is responsible for authenticating the user. As the user already successfully authenticated with Google, the user will be automatically logged into YouTube as well.



OPENID CONNECT

Authentication is one of the main functionalities of a SSO solution. This is relevant towards the end-users but is also needed to communicate with different identity providers. Enabling communication with different identity providers gives users the ability to login with an existing account. This is a very common functionality for most websites where users are able to login with their Google or Facebook account. The protocols OpenId Connect and OAuth2 play a big role in making sure this is possible.



OAuth2 is a defined specification and the implementation should be the same for all parties, but in practice you see that there are differences when you setup authentication with Google or Twitter. The OpenID Connect protocol was therefore invented to standardize the implementation even more. The OpenID Connect protocol is a layer on top OAuth2 that standardizes certain aspects like endpoints and token formats. With standardization, a lot more out of the box solutions become available in the form of libraries, SDKs and products that make it even easier to enable authentication for your application. In addition, when your SSO solution supports OpenID Connect, it will provide your partners an easy way to connect to your platform as well.

Because OpenID Connect is standardized and well-defined many products have appeared on the market that implement this protocol and can be used as out of the box solutions. Some of the key players are:

- » Red Hat SSO
- » Ping Identity
- » Okta
- » Auth0
- » Amazon Cognito

It is highly recommended to first check out these products and see if they fit your needs before developing your own solution. Developing an authentication mechanisms is very difficult to get right and any mistakes can have big consequences.

REAL WORLD USE-CASE

If we put all this knowledge into a single relatable use case you could think of any company were you work with different software tools. A lot of these tools require authentication and providing credentials for each one every day shouldn't be necessary. Applications at organizations usually already integrate with an Active Directory making it possible to use one set of credentials for multiple applications. However, this solves only part of the problem. These credentials will have to be provided every time the user wants to login to one of the applications. Solving this issue is possible by setting up one of the previously mentioned products as a service provider and federating the users from the internal Active Directory. Employees can still use their single set of credentials but only must provide it once as the service provider will now manage the authenticated session. All applications that support OpenIDConnect can be connected to the product and have it act as the authentication mechanism.

CONCLUSION

SSO is a powerful technique that enables users to easily and safely access different applications. There is however a lot more that an SSO solution can offer and is explained in a three part SSO blog that can be found on isaac.nl/sso-blog





SPACIAL VOTING GAMES

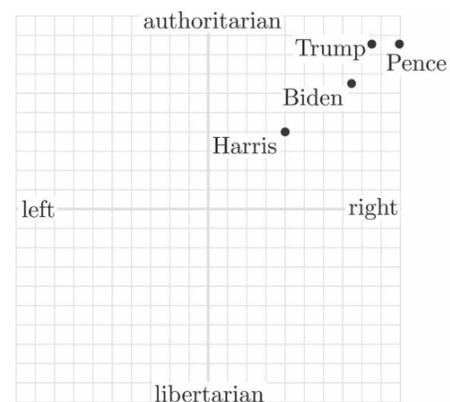
HOW TO WIN ELECTIONS BY BEING PATIENT OR SPENDING MONEY

Suppose the Board of the TU/e wants to decide what percentage of its annual budget will be spent on sports facilities. Any proposal by the Board has to be approved by the University Council, and the Board thinks there might be a counterproposal. Fortunately, the Board knows each Council member's personal preference for the sports budget. Can the Board make sure their proposal will not lose a vote against the counterproposal, without knowing what the counterproposal will be? The answer is yes: if the Board proposes a budget such that at most half of the Council members want a smaller budget and at most half the members want a larger budget—such a budget always exists—then their proposal will not lose a vote against any counterproposal. (The vote may be tied, but in such cases the Board does not need to adopt the counterproposal.)

TEXT Mark de Berg

In the example above, the decision involves only one issue. In real life there are often multiple issues at stake. In spatial voting theory the policy space (that is, the space of possible proposals) is modeled by R^d , where the different dimensions correspond to different issues. Such models are also used in a political context, where “proposals” correspond to candidates in an election. The Political Compass **0** has plotted the position of various politicians involved in the US Presidential Election 2020 in a 2-dimensional policy space, with the x-axis representing their position on economic policies and the y-axis their position on social issues (Figure 1). Note that the political opinions of the voters can be represented by points in the policy space as well. The underlying assumption in the spatial voting model is that each voter will vote for the candidate whose point in the policy space is closest to their personal opinion. (If the distances to the candidates are the same, voters abstain.)

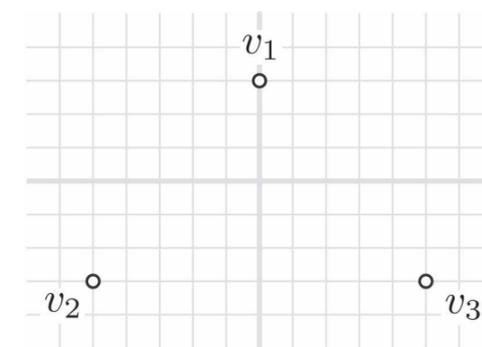
In an abstract setting we have a d -dimensional policy space R^d and a set V of points in R^d that represent the



0 Positions of four US politicians in a 2-dimensional policy space.

opinions of the voters. Now suppose we have an election between two candidates, who still have to announce their position and who only care about winning the election: they have no ideals and are prepared to take any position in the policy space that increases their chances of winning the election. Is it

possible for a candidate who knows the opinions of all voters—that is, the locations of all points in the voter set V —to pick a position such that they will not be beaten by the other candidate, no matter which position the other candidate takes? We have already seen that in 1-dimensional policy spaces the answer is yes, but what about 2- or higher-dimensional policy spaces? Figure **1** shows an example with three voters in R^2 , where no matter which position the first candidate picks, the second candidate can always adjust his position so that he beats the first candidate. Is this a special case? No. For virtually all voter sets in R^2 (and similarly in higher dimensions) it is better to be patient: if you let your opponent announce her position first, you can pick a position that is preferred by more voters.



1 For any position of the first candidate there is a position for the second candidate that wins two of the three voters.

In the spatial voting model, each voter will vote for the candidate that is closest to the point representing their personal opinion. Above we tacitly assumed that distances in policy space are Euclidean distances. We can also use a different distance measure such as the Manhattan distance. (The Manhattan distance between a candidate $c=(x_1(c), \dots, x_d(c))$ and a voter $v=(x_1(v), \dots, x_d(v))$ is defined as $\sum_{i=1}^d |x_i(c) - x_i(v)|$.) Does this make any difference? Yes! In R^2 the first candidate can now always pick a point such that they cannot be beaten by the second candidate, no matter which position the second candidate picks. In R^3 this is no longer true: in

3-dimensional policy spaces with the Manhattan metric it is better to be patient, and announce your position last.

“Candidate c_1 may increase their fame, which corresponds to decreasing the value of β , by spending more money on their campaign.”

Of course the assumption that each voter votes for the nearest candidate is a bit naïve. People often vote for a candidate that is more famous or more charismatic. A possible way to formalize this is as follows. Suppose that the first candidate, c_1 , is more famous than the second candidate, c_2 . Then there is a constant $\beta \leq 1$ such that a voter v will vote for c_1 if $\beta \cdot \text{dist}(v, c_1) < \text{dist}(v, c_2)$. Candidate c_1 may increase their fame, which corresponds to decreasing the value of β , by spending more money on their campaign. Remember that in 2-dimensional policy spaces and for Euclidean distance, the candidate to announce his or her position first will generally lose. Can candidate c_1 avoid this by spending enough money on their campaign? And how much do they need to spend? In abstract terms: what is the largest β such that there is a position c_1 for the first candidate such that they will win the election, no matter which position the second candidate picks? Can we compute this value of β and the position c_1 , given the positions of voters in V ? Is there an upper bound on the money to be spent, that is, is there a constant β that would suffice for any voter set V ? In case you are interested in some answers to these questions, have a look at: B. Aronov, M. de Berg, J. Gudmundsson, M. Horton. On β -Plurality Points in Spatial Voting Games. **2** In Proc. 36th Symposium on Computational Geometry, pages 7:1-7:15, 2020.

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MEMBER

A DIFFERENT MOMENTUM

25 *th of September 2020. 1500 graduates. 3000 people at the afterparty. 4 music performances. A budget of €[CENSORED].*

TEXT Susan van Ewijk

IN THE BEGINNING

When I got the call I had been waiting for all day "You have been chosen for MomenTUm!" those numbers were what I had in mind, we all did. We started out with a group of 7 people. 4 FSE board members, one board member from Simon Stevin, one board member from S.S.R.E. and yours truly. Corona was still a mediocre beer and a distant Chinese virus when we had our first meeting with the group, physically at the university.

I went on holiday for a week, and when I got back you could say 'shit hit the fan'. Everyone was urged to work from home, and the university closed its doors. The second MomenTUm meeting we had was online, and the third, and the fourth, you get the idea. At first it was decided to continue the arrangements for MomenTUm The Afterparty as planned. We had some tough Teams discussions over who should be the headliner this year and I learned that it is unfortunate I'm not such a good singer, because those people earn good money for 30 minutes of performing.

A few things you must know about the 'MomenTUm workgroup' is that this group of students is only responsible for the afterparty. However, we did have influence on what was planned during the ceremony and we arranged most promotion material as well as the graduate gifts!

2020 IS CANCELLED

After a few months a sad decision had to be made by our executive board: MomenTUm 2020 was cancelled. But no MomenTUm meant no MomenTUm workgroup, so we could essentially pack our bags and go home

(Oh wait, everyone was already home). This entered us into a whole other Teams discussion: is there anything we can do for the graduates instead? Sure, they were all invited for 2021, but the 25th should still have a celebratory feeling.

I will admit, MomenTUm – The Livestream was not born in a few days. It wasn't even weeks; months is probably closer. Throwing out everything we had, and coming up with a TU/e wide event that doesn't exist yet, turned out to be more of a challenge than expected. Do students prefer music or a program? How long should the program take? Can we do something live? Should we do something like the TU/e radio? How do we involve graduates, other students, maybe even parents? Many of these questions remained unanswered until August, which was only about 2 months away from the 25th. One thing we did decide on early: the original date should remain.

A NEW PROGRAM

Near the end of August the program was eventually finalized, and what followed was a month of chaos to get all involved parties aligned with our plans. The first part we recorded was actually the closure of the main program. The part that was recorded after this was 'A MomenTUm for You', which originated as an 'All you need is love' rip off. People could nominate a graduate, and 5 nominees would be surprised at their homes with confetti, a bouquet and a diner cheque! About a week before the 25th we had the big day full of recordings planned, where we would record the quiz, the DJ's and the bands, all on the same day. We started at 11 in the Blauwe Zaal with the Magic TU/e quiz, presented by, as they call themselves, 'the best

paid magicians of the Netherlands', Magic Tom & Yuri. If you have ever seen them perform, this was a bit chaotic, but we definitely started that day with a good laugh. Next up were the DJ's whom we would record on the balcony of Metaforum. Fortunately for us it was a wonderful day, so we mainly chilled on the balcony for an hour or so. The DJ's were less happy with the good weather, as the sun made them a bit sweaty. Don't worry though, we provided them with cold drinks! That brought us to our final recording of that day, the bands in a lecture hall in Auditorium. A good lesson here was that for a good recording of a band, you need 3 hours of sound check, and that Auditorium closes at 8, but if you beg the security guard very kindly you can stretch it to half past 8. The day was long, but successful, and now it was up to the company we had hired for editing everything together!

FINAL WEEK

The last week was hectic. We were in touch with the editor every day, watching parts of the program already to provide feedback. Besides that, we transcribed every part to assist in the subtitles to make sure it was finished on time. Transcribing Tom & Yuri was definitely a challenge. Fortunately, everything was finished on time, and on the 25th of September at 16:00, MomenTUm – The Livestream was live! With about 500 systems viewing the livestream during the main program, we were very content with the result.

THE GIFTS

Somewhere in the beginning I mentioned we were also responsible for the graduate gifts. I will tell you we gave it a final try to 'bring back the bachelor hoodie', but unfortunately this was not possible. However, a nice initiative from the university was that we were allowed to give away the last hoodies during the livestream. We do hope all the graduates enjoyed the other gifts, especially the socks of course!

PR TEAM

I'm glad I got to organize MomenTUm, even though it was nothing like what I had signed up for. At times I felt we were more of a PR team than an organization, as one of our main tasks became managing social media, and putting as many giveaways as possible online to catch people's attention for this alternative program. When the university is closed, social media suddenly becomes one of the few communication channels you have for promoting your event. One thing I'm very proud of are the limited edition MomenTUm socks of this year, did you spot our favorite building, Metaforum, on there? If you have won a pair, I hope you enjoy them! Now that MomenTUm 2020 is over, let's be hopeful and look forward to 2021 to make MomenTUm a huge party again!

Did you miss out on MomenTUm – The Livestream? The full main program is uploaded to the TU/e YouTube channel!



HI THERE!

HOE WE VANUIT HET NIETS EEN VOLLEDIG GEAUTOMATISEERDE VERZEKERAAR BOUWDEN

TEXT Ruud Kleynen - CEO Hi There

INSCHATTEN EN PRIJZEN VAN RISICO'S

Verzekeren is wiskundig gezien best een ingewikkelde aangelegenheid. Het gaat over het inschatten van risico's, het prijzen van die risico's om vervolgens de vertaalslag te maken naar een verzekeringspremie. Werk dus voor met name actuarissen, econometristen en wiskundigen.

Gelukkig zijn er krachtige computers en programmeertalen zoals Java en Kotlin die het uitvoeren van die premieberekeningen een stuk makkelijker maken. Door het gebruik van die computers zouden ook alle daaraan gelieerde processen, zoals de administratieve verwerking, incasso en winstbepaling volledig geautomatiseerd kunnen verlopen. Maar dat is in de praktijk niet zo.

VEROUDERDE IT-SYSTEMEN

Eigen mainframes en verouderde en niet goed functionerende software waren de reden waarom duizenden mensen nodig zijn om verzekeraars te laten functioneren, wat resulteert in hoge kosten en klantbediening die onder de maat is. Verder viel op dat software engineers bijna nooit een achtergrond op het gebied van verzekeringswiskunde hebben. Dat is vragen om problemen en dan moet ik altijd aan Franklin Covey denken die zei: *"Begin with the end in mind"* en aan de quote van Simon Sinek: *"Start with Why"*. Als je geen idee hebt waarom je iets doet en niet weet wat je stip op de horizon is, dan is het onmogelijk om een goed systeem te bouwen.

Voor ons was het zo klaar als een klontje. Met de komst van de Cloud én materie kennis (verzekeringswiskunde) én kennis van software engineering moest het mogelijk zijn om met een klein clubje mensen die verzekeringswereld te disrupten en doen wat die

verzekeringswereld niet voor mogelijk hield, namelijk het bouwen van een volledig geautomatiseerde verzekeraar, die slechts door een handjevol mensen gerund wordt. Dat werd onze uitdaging en dat gingen we doen. De startUp Hi There werd opgericht. De opdracht: binnen anderhalf jaar een digitale basisverzekeraar bouwen.

DOORZETTINGSVERMOGEN, KENNIS EN TEAMSPIRIT

Dat bouwen vraagt om focus, doorzettingsvermogen, creativiteit en passie. Het is een ontdekkingstocht waarbij van te voren niet helder is hoe die stip op de horizon te bereiken. Daarbij is het zoeken van de juiste wiskundige abstracties en de vertaalslag daarvan naar software een van de grootste uitdagingen. Want zo'n IT-systeem moet flexibel en makkelijk aan te passen zijn. Dat klinkt eenvoudig maar dat is zeer complex. Dat heeft ook te maken met de grote omvang van zo'n systeem. We hebben er vier jaar over gedaan om die abstractie op orde te krijgen en te vertalen naar software-legoblokjes.

Zo'n bouwproject vraag ook om teamspirit, want samenwerken is nog niet zo eenvoudig. Maar ook dat samenwerken kregen we onder de knie met als gevolg dat binnen anderhalf jaar de volledige geautomatiseerde verzekeraar er stond. Een mooie bijkomstigheid was een rangschikking bij de beste 50 InsurTechs ter wereld en een opname in het ScaleUp programma van Microsoft. Een eer die maar 9 Nederlandse bedrijven te beurt viel.



FIRST YEAR SUPPORT!

Hey! We are FYS. As you may have heard, FYS stands for First Year Support. We have only been brought into existence this last year, and our goal is to introduce the first years to the wonderful and cool committees and fraternities GEWIS has to offer.



TEXT Liselotte Schoenmakers - FYS

FYS consists of nine very helpful people, namely Arnoud Bakker (chairman), Ties Barendse (secretary), Celine de Jong (treasurer), Jasper Gregoire (vice-chairman), Lucy de Graaf, Wouter van der Heijden, Koen de Nooij, Liselotte Schoenmakers and Daan Verkade. We all met each other through GEWIS. FYS was formed as a board-initiative, but runs mostly autonomously now. Every meeting we get to know each other better!

Every one of us used to be a first year student, just as some of you may be right now. We all started university at some point, without many friends in the same field. Yet, we all made friends within our study which for the most part we have to thank GEWIS for. This is one of the reasons we're so motivated to help first year students with getting to know GEWIS and its lovely members. Due to the COVID-19 pandemic, it's more difficult than ever to get to know new people. Because of this, we want to help the new first years wherever we can to make friends amongst each other and get acquainted with our association.

We want to give the first years an impression of GEWIS by organizing activities ourselves, collaborating with GEWIS' other committees and fraternities, and promoting other activities. For example, we organized the Great GEWIS Game - our very first activity - which turned out to be a great success.

All participants were divided into little groups primarily consisting of first year students accompanied by two or more older GEWIS members. In every round the groups were presented with a committee- (or

fraternity-)related theme which they needed to bring to life using only their webcams and attributes they had laying around. This created some very interesting (read: ridiculous) scenarios, pictures of which can be found on the GEWIS website! (scan the QR-code) After each round, teams could award each other medals based on the effectiveness of their photos, and at the end the team with the most points won an awesome prize.

Now that you've heard of the Great GEWIS Game you must be excited about what's coming next. Keep that up, because there are plenty of new activities on their way.

We are always thinking of new activities to plan. So, if you ever have a great idea for an activity that we can organise, please contact us because we want to organise as much as possible. Committees and fraternities are also more than welcome to send us an email for cooperation, promotion or general advice regarding first year students! You can reach us at our email: fys@gewis.nl

Virtual hugs from FYS!



MOCHA TREE CAKE

GETAART would like to honour the anniversary of B.O.O.M. Now I could write beautiful story about trees losing branches every now and then but staying strong and growing new branches. But, I'm not that good of a writer, I'm more of a baker kind of girl. So, let me just tell you how to create such a fallen branch out of pie!

TEXT Yanelle Stolwijk - GETAART

INGREDIENTS:

BISCUIT:

- » 50g butter
- » 6 eggs
- » 190g sugar
- » 190g flour

CUSTARD:

- » 2 packages (10g) vanilla sugar
- » 500ml milk
- » 150g sugar
- » 4 egg yolks
- » 2 tablespoons flour

MOCHA CREAM:

- » 70ml espresso
- » 30g sugar
- » 160g dark chocolate
- » 500g butter
- » 120g powdered sugar
- » 500g custard



PREPARATION METHOD:

CUSTARD:

1. Put the milk, vanilla sugar and 100g sugar in a pan and bring to a boil.
2. In a separate bowl, stir the egg yolks, the rest of the sugar and the flour until combined.
3. Put a bit of the milk (half a glass) in the egg yolk mixture and stir to combine. Add another bit (half a glass again) and stir to combine.
4. Add the egg yolk mixture to the pan and let it cook on low heat, until it becomes as thick as yoghurt.
5. Put the custard in a bowl and let cool.

BISCUIT:

1. Preheat the oven to 200°C.
2. Melt the butter.
3. Beat the eggs and the sugar until it has about doubled in size.
4. Sift the flour into the egg mixture and gently scoop the flour through. Also scoop the melted butter through the mixture. Make sure to keep the mixture as light and fluffy as possible.
5. Put baking paper on a baking tray. Divide the mixture over the baking tray and smooth out. Make sure your baking tray is big enough, you only want a thin layer (about 1cm). Otherwise only use half of the batter and bake the other half of the batter in a second shift. Another possibility is to bake all the batter at once, and horizontally cut the cake after it is baked (and cooled) to achieve the right thickness.
6. Bake the biscuit in 6-10 minutes until golden brown and let it cool.

MOCHA CREAM:

1. Put the espresso with the sugar in a pan and cook until it is as thick as syrup.
2. In the meantime, melt the chocolate au bain-marie.
3. Use a mixer to beat the butter and powdered sugar until it is very, very airy. It should at least triple in size and become very pale.
4. Add the custard, espresso syrup and mix until combined.
5. Save a bit of the mixture in a separate bowl (about 1 cup), to make sure you will have some lighter and some darker cream.
6. Add the chocolate to the remaining mixture and mix until combined.



MOCHA TREE:

1. Place the cooled biscuit on a big piece of plastic wrap. Make sure the piece of plastic wrap is significantly bigger than the biscuit.
2. Cover the cooled biscuit with the darker mocha cream. You can add some filling now if you wish, I added some chocolate chips to give it a bit of a crunch, but nuts or amarena cherries also combine very well.



3. Use the plastic wrap to make a nice tight roll, twist the ends in opposite directions and tie up.
4. Place the roll in the fridge for at least an hour to stiffen up.
5. Take the roll out of the fridge and remove the plastic wrap. Cut off the ends of the roll to create nice clean edges. The cut off ends can be used as side branches.
6. Place the roll on a serving tray, place the cut off ends to the sides of the roll.
7. Cover the ends of the roll and the ends of the side branches with the lighter cream (as if it is the lighter inside of the tree) and the outside of the roll and the side branches with the darker cream (as if it is the bark of the tree).
8. Use a wooden skewer to decorate the tree. Trace circles in the lighter cream, for the growth rings of the trees. Create dots and trace lines in the darker cream to create the structure of the bark.





LEARNING FROM THE BEST

THE WONDER OF COLLECTIVE BEHAVIOUR

Have you ever wondered how an entire flock of starlings in the sky, moving at speeds of up to 60km an hour, can make drastic turns in an instant; or how a school of rummy-nose tetras can rapidly and spontaneously rearrange themselves at the sight of an enemy; or how bees and ants come to a collective decision on foraging strategies? I have. And as it turns out, I'm not alone. Captivated by such phenomena, scientists from all fields of the natural and social sciences have invested their entire life to understanding the mechanism by which these patterns are created. They are neither regular nor are they entirely random. They are, simply put, complex.

TEXT dr. Oliver Tse

Our world is abundant with such examples of complex phenomena that emerges spontaneously from relatively simple interactions of elemental parts with each other and the surrounding environment—unlike music from an orchestra, there is no ‘conductor’ deciding on the behaviour of the system. These so-called emergent phenomena pervade all areas of our natural and social world and are manifestations of interacting systems that exist at different scales of organisation ranging from the smallest of scales (subatomic entities, cells, individual organisms) to the largest (ecosystems, societies, planetary systems).

As one can very well imagine, a multitude of theories have been postulated and many more books written on the topic of emergence, most of which attempting to explain the hows, whys and wherefores. While I can surely ramble on about the intimidating and conflicting philosophies underlying each proposed theory, there is a different set of questions I need to ask myself as an Applied Mathematician: Can I learn something from the way these creatures organise themselves? Can my expertise be of any use in understanding the emergence of these coherent patterns? If so, how? Where do I even begin?

Fortunately, animal groups and human societies provide a wealth of fascinating, yet accessible, examples of the emergence of complex behaviour. In

such systems, there are two apparent scales of organisation that are tightly linked together: the microscopic and the macroscopic, or more casually, the individual and the group. Just like how analysing a single ant cannot explain how hundreds of them could collaboratively build bridges to span gaps with their bodies, one cannot observe emergent behaviour by inspecting a lone individual—the interplay between the two scales is key.

Agent-based modelling (ABM) has, in the last decades, become the go-to-method for simulating emergent phenomena, and offers a theoretical portal from which mathematicians and computer scientists can participate in exploring and unravelling these complex systems. In many of these systems, the tools available to us enable us to predict and analyse the multitude of patterns that emerge on the macroscopic scale when specific interaction mechanisms are prescribed on the microscopic scale, and in certain cases, to even influence the system into exhibiting a desired pattern. For instance, we can now specify simple microscopic interactions in ABM that give rise to complex patterns such as aggregation, consensus formation, flocking and synchronisation. While still a long way from having a complete understanding of emergent behaviour, we do have the basic means to learn from these organisms, and we ought to. Let me explain.

Ants, for example, have been long known to possess collective intelligence—intelligence that emerges from self-organisation and indirect communication within a social system. The way in which these virtually brainless creatures build extremely complex architectural structures without any apparent purposive plan, and their ability to collectively find the shortest path to the best food source using highly sophisticated messaging systems, are both perplexing and inspiring. In fact, they have initiated the development of elementary computer algorithms capable of solving hard combinatorial optimisation problems, such as the Traveling Salesman Problem.



Migratory birds travel in flocks of up hundreds of thousands of birds along migration routes that can span tens of thousands of kilometres. Perhaps the most challenging feat during migration is navigating through a complex environment with minimal energetic cost. By functioning collectively like a distributed sensory array, these birds employ a diverse range of sensory modalities and can respond to an impressive array of cues, including magnetic fields, solar radiation and light polarisation, in order to complete these migrations successfully.

Here is yet another example. Schooling fish, like all other vertebrates, are constantly confronted with many challenges: they live in a dangerous environment that is unpredictable; they have to take in complex, but limited, sensory information, and quickly translate that into motion; and they seem to be doing all these tasks efficiently. Uncovering the underlying mechanisms that enable these remarkable creatures to parse complex information into actions effectively could facilitate the engineering of robust, resilient, and effective technologies, such as autonomous multi-robot systems, smart grids, and distributed sensor networks. It may even pioneer the next generation of artificial intelligence.

Now that I have, hopefully, convinced you on the benefits of learning from ‘the best’, do allow me to babble on a little longer.

For whatever reason, humans have evolved into living in hierarchies, which rely on good leadership that ideally benefits the collective whole. As idyllic as it sounds, history has proven time and time again that hierarchical systems are susceptible to acute flaws—leaders may be vulnerable, corrupt, or self-interested. But, if there is one thing that animal groups and their emergent behaviour have taught us, is that, we too, are inherently social organisms, whose activities exhibit many of the elements of co-operation and conflict found in animal societies. These social activities are extremely important to us, and have become the constituents for emergent behaviour: they determine our economic welfare and how we are governed; they drive the stock markets and create traffic jams; they produce emotional turmoil that brings about religious and racial divide, and dichotomy in the expectations on our behaviour during a pandemic; they even determine how long we are willing to wait in queues. Like it or not, the choices that we make, and the actions that we take as an individual, ultimately leads to the emergence of collective behaviour. This leaves us with one question: what are we trying to achieve as a collective? Are we, collectively, good shepherds of natural life on earth, or have we chosen to be agents of our own destruction?





CREATIVITY

A couple months ago I went to see the *Tenet* movie in the cinema and loved every minute of it. I highly recommend you watch it yourself, so if you want to remain spoiler-free, make sure to skip to the next paragraph. Are you sure you want to stick around? Alright! The plot of the movie heavily revolves around time travel, but in a way that is completely different from anything I have ever seen before. Instead of jumping through time, this movie explores going in reverse through time. Throughout the movie you stick with the main character and observe him going forwards through time, while at times his surroundings suggest the movie is playing in rewind. This brings with it scenes that are tough to act out and an amazing overall picture. Nice job, Nolan!

TEXT Erik Takke

I found the plot to be very refreshing and creative, and it got me to reflect on my own creativity a bit. Thinking back to all the things I'd done in the past year, I noticed that I have actually undertaken some pretty creative projects and was really happy about this! I'd always told people I was not creative, but now noticed that I had more in me than I was giving myself credit for.

OK, I'm making it sound like I stumbled across some jar of creativity and suddenly became a creative genius. That could not be further from the truth. First of all, I wouldn't consider myself a creative genius: I am simply more satisfied with the projects I undertake as they are novel to myself. Second, it has taken quite some effort to become this 'more creative' version of myself. Still, I think I have gathered some insights that might

prove useful, so I thought it would be fun to tell you about some of the things that worked for me. Perhaps my findings can be an inspiration for you.

SET A GOAL

In my experience, creativity is all about creating something new. It does not have to be revolutionary, as long as it is something new for you. However, it is really all about actually creating something. So, first things first, set yourself a goal on what it is that you want to create. Don't worry, it does not have to be a rigorous plan; a vague idea suffices. As time progresses and creative ideas pop up, chances are your plan will change anyway. You just need a basic goal to get yourself off the starting line.



START GENERATING

Now that we have set a goal, the next step is to start generating some creative ideas. For me it works best to get comfortable and let my mind wander while thinking about what it is that I want to create; oftentimes the ideas start trickling in at a slow but steady rate. An easy way to keep the flow of ideas going is writing / sketching everything down. In doing so, you allow yourself to 'forget' about some of the ideas and make space for new ones. And yes, even write down the dumb or even completely unrelated ideas! When looking back at my page with ideas at the end of my brainstorm session, I've found time after time that ideas that are seemingly useless by themselves can often be combined with other ideas to form something really fun!

CHANGE YOUR PERSPECTIVE

Life in general is a great source of inspiration for me. Although staying in my own room/house/neighborhood is very comfortable, there is not much that genuinely inspires me anymore. This is not at all strange: I've grown accustomed to these places. So, and this might sound a bit scary, I'd encourage you to get out of the house and go places you haven't seen before. Although the places you go might not be a direct inspiration to whatever it is you want to create, simply crawling out of your comfort zone can help kick your brain into creativity-gear.

In case you are really keen on staying in your PJ's in your room, you can also try to get a new perspective on things by literally changing your perspective. Get down low or up high, draw in close or observe things at a distance. Perhaps even set the world upside down by performing a handstand. Who knows what it will inspire you to do or create.

LOOK AT WHAT HAS ALREADY BEEN DONE

I have found that creativity is essentially nothing different from getting inspired by what is around you and transforming that into something new. So yes, to spark your creativity it is perfectly fine to let somebody else's work be an inspiration for yours. Even plainly copying the work of others can be very useful: you might learn new techniques or gather insight into

why it was created in that way. I'll plainly admit that I have replicated many things, learned from the process and subsequently incorporated (parts of) it in other projects. Just don't fool yourself and others by claiming you came up with it yourself.

KEEP TRYING AND GIVE IT SOME TIME

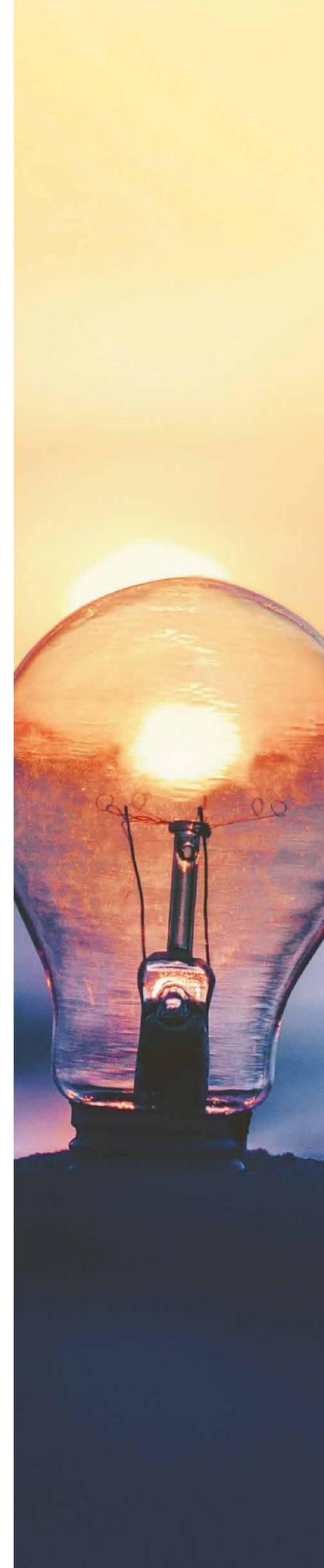
I would be lying if I told you that by now I find it easy to come up with a creative idea. It simply takes time to come up with something new. Throughout the search perseverance is key: "If at first you don't succeed, try, try, try again." So, if after your first brainstorm session you are not entirely excited about your ideas yet, have another session, and another, until you get that perfect idea. Make sure to take a break between sessions though. It prevents you from spiraling back to previous ideas. Go out and get inspired by exploring the world around you some more, or just let it rest for an hour/day/week/month.

THROW YOUR PHONE OUT OF THE WINDOW

Although I can't say that I have done this myself, I still think it is a proper piece of advice. In many situations I find that my phone can be a major distraction, pulling me out of the 'zone' by an attention grabbing notification beep. When having such a moment, at least make sure to silence your phone and let your only distraction be your own thoughts. Yet, I still think you should give throwing your phone out the window a try: who knows how this new experience will inspire you?

So, what does following these 'steps' give you? An example is this very article. I can't say it is perfect or extremely creative, but again, that is not the point. I like to think that there are some new elements in there – at least for myself – and I had a lot of fun writing it. That is really what it is about: keeping your spirit lifted and enjoying the journey.

P.S. in a creative mood? What do you think about creating an article/recipe/poster/whatever for the next *Supremum* magazine? Feel free to contact us at supremum@gewis.nl and we will look for a nice spot to feature your creation!



*Infimum: A strange or funny quotation from a teacher, a student or faculty member.
Here you can find infima sent to the Supremum committee via inf.gewis.nl.*

*Het gaat over Mart die na 9,5 jaar eindelijk afgestudeerd.**

Merel P. haar zusje tegen Merel: "Goh dat zie ik jou ook nog wel doen."

Lars: "Olifanten kunnen hun eigen neus inslikken"

Luuk: "Je had alle keuze om dat niet te zeggen"

Roy K.: "Koen is onze bestuursfeut!"

Irne komt weer heel blij aanlopen

Irne: "Ik denk dat ik naar HBO ga!"

Noa belt met Leon die in gesprek is

Leon: "Nu moet ik mijn moeder ophangen."

Wouter: "Roy val je nou op planken van 48+?"

Wouter: "HG-noort"

Anouk: "Hij lag er wel op, maar hij ging er niet in."

Koen terwijl hij een fles ice probeert te adten: "Wie stopt er ook koolzuur in dit spul?!"

Leon: "Maar als je dood bent, dan heb je toch geen bloed meer?"

Wouter: "Ik heb spierpijn in mijn hoofd"

Sanne van W.: "Ik streef naar de kwaliteit van de GEZWEM website."

Sabine: "Het recept werkt gewoon niet"

Noa: "Nee het recept werkt wel, maar Sanne werkt gewoon niet"

Liselotte: "shotje?"

Celine: "waarom?"

Liselotte: "want shots!"

Celine: "OKE!"

Roy bestelt pennoshots

Intens dronken sjaars Celine: "Roy, kun je voor mij een heel groot glas water bestellen"

Rink: "Noa, je moet niet aaah zeggen als ik aan Anne zit."

Rick W.: "Het probleem dat wij hebben is dat de trekker trek scene te groot is"

Thijs van de L. kijken naar een fles alcohol: "Staat hier geen gebruiksaanwijzing op?"

Jealy: "Janne, wat is de achternaam van je broer?"

Sjaars: "Nu we het toch over geld hebben, is het vandaag niet DUO?"

Noa: "Hé, het trio is veranderd in een tweeo."

Vinz tijdens fuck de dealer: "ik heb nachtmerries gehad waar ik betere tijden had"

tEun "El tEmple": "Je moet even op internet opzoeken hoe je moet ademen"

Liselotte S. schiet pepernoot mis

Wietske de B.: "Lies, die pepernoot hoeft geen 1,5 meter van Job te houden"

During an online lecture: "Are you really called test test?"

Rink: "Ik had even van die schoolreisje vibes"

Noa: "Ja zo onder de bussen liggen!"

Sanne: "Ik ben liever een eierdooier volgens mij. Maar wat is een eierdooier eigenlijk?"

Ruben: "Een midnight mini snack. Een olijffe. Die stop je in je navel."

Anoniem: "Ik denk dat we haar wat positive vibes moeten geven!"

Max O.: "Kotsen is leuk!"

Koen van den B. in de efteling: "Wat is deze magnum frikandelspecial"

Rink: "Ja chips pakken van rechts heeft voorrang."

Tijdens thirty seconds

Eline S.: "niet Samsung maar..."

Thijs van de L.: "Gert"

Alex: "Ja hij gaat helemaal vanuit Weert naar Limburg"

Suus: "Als het vrouwen kleding is, is het niet van mij"

Roy: "Hoezo moet je geld overmaken als je wilt overmaken?"

Gijs is lam en Loek wil hem water laten drinken

Loek: "Hier, drink water"

Gijs: "Het zit in een colafles; ik ben niet dom"

Anne tegen Sanne nadat ze een toetje had gemaakt

Anne: "Ik adem alleen maar de kruimeltjes in"

Roy: "Ik ben meer een back-end man dan een front-end man."

Leon: "Ja wanneer stopt het eigenlijk?"

Robin: "Wanneer je alles in het gebied hebt bevrucht!"

Thijmen: "Je kan eigenlijk altijd alles eten"

Sanne tijdens instructie van Intro to Crypto: "Ik krijg hierdoor echt zin om binair te gaan adten!"

Pieter E.: "Niet maagd genoeg voor de WC"

Tim H. met een blokkendoos: "Ik heb er één uit gekregen!"

Niekie: "Je moet de blokken er juist in krijgen..."

Sinterklaas tegen de voorzitter van Pattern: "Zit jij ook bij een eerstejaarscommissie?"

Arend V.: "Mijn theedoek is doorweekt en bovendien vuil."

Thijmen S.: "Ik zit al aan mijn derder theedoek."

Arend V.: "Je moet ze ook niet opeten Thijmen."

Jealy: "Jij kan scrollen!! Slechte bestuurder!!"

Arend: "Water is niet nat, want nat betekend met water bedekt."

Ruben: "Maar water is wel bedekt met water"

Arend: "Dan heb je oneindig veel water"

Ruben: "Nee want het buitenste laagje is droog"

Daniëlle: "Mijn vaatwasser heet Frits!"

Lars: "Lost die ook wel eens optimization-problemen op?"

Daniëlle: "Nee, hij lost alleen vet op."

Jealy: "Irne en ik gaan samen naaien."

Irne komt aanlopen

Irne: "Ik vind HBO mensen leuk!"

Irne: "Ik heb echt al 5 jaar een rijbewijs, ik kan nog steeds geen auto rijden."

Kostek: "Ik kan wel navigeren, ik kan alleen niet communiceren."

Tim: "Ik vind het altijd zo jammer dat we zo dicht bij Limburg wonen..."

Kees: "Geen idee waar ik het mee eens ben. Ik ben een soort gemiddelde in Nederland."

Roy K.: "Koen, jij bent CO toch? Waar komen babies vandaan?"

Tim: "Ik heb wel eens gehoord dat je duim-tot-penis verhouding gelijk moet zijn aan de golden ratio"

Gijs: "Waarom is mijn golden ratio kleiner dan die van Samuel?"



HEYA!

As you might have heard this year B.O.O.M. turned 15 years old!! Now we love being outside the most, even during these winter times, as long as we have something to keep us warm. Some strohcomel is always a good idea to have around. Being outside is of course best with lots of friends. And the dish I'm going to tell you about today is also best to be shared with a lot of friends (at least when covid has been reduced to a minimum). It'll warm you up when sitting outside around a nice campfire or when inside on the couch. Now I'm talking about a good stew of course! I love to make them around fall and winter. Setting them up in the morning and letting them cook all day. The whole house will smell lovely, and you get to pre taste every time you walk by. Gotta make sure everything is going well!

TEXT Ruben Brinkman - B.O.O.M.

LIST OF INGREDIENTS:

- » Around 1kg of stewing beef also called braadlappen in Dutch, make sure you get some good ones
- » 1 liter of good beef stock
- » 330 ml of porter
- » 800 grams of plum tomatoes (2 cans)
- » Around 100 grams of flour
- » 5 cloves
- » 5 dried bay leaves
- » Around a tablespoon of rosemary
- » Around a tablespoon of thyme
- » 2 large carrots (the really big ones)
- » 2 large leeks
- » 4 sticks of celery
- » Worcestershire sauce

NOW LET'S GET STARTED WITH THE HOW:

STEP 1

First get a good big dutch oven. Put in just a little bit of olive oil and heat it up to a good medium heat. Put the stewing beef in and make sure it browns really nicely. If you happen to not have a big dutch oven, any large pan will do.

STEP 2

Whilst that is going on you can chop up the vegetables! Make sure to cut them not too small. I would halve the leeks and carrots and then cut everything in about 2cm chunks. Because it is going to be stewing for quite some time the vegetables can be larger than you would normally cut them.

STEP 3

Once all the meat has browned take it out of the pan. Add the vegetables in and bake them as well. After a couple of minutes add in the rosemary and thyme.

STEP 4

Now add the flour, as mentioned you should use about 100 grams but just make sure everything is coated. Cook everything with the flour for a couple of minutes. This might seem hard but it really improves the flavour and takes the flour-y taste away.

STEP 5

Now add the porter and stir it in well. If you do not like porter a red wine would also work here.

STEP 6

Now add in the cloves, bay leaves and beef stock and stir everything through.



STEP 7

If everything has been stirred well add the meat back to the party.

STEP 8

Now here is where you have a choice. You can either leave it on the stove for a good couple of hours. Or pop it in the oven at ~170 for the same amount of hours. This really depends on your own taste. Want the meat falling apart when you just look at it? Leave it there for 5+ hours. Want the meat to still hold its shape? Leave it there for just under 3 hours.

STEP 9

I left mine on for about 6 hours. Now you can taste and add pepper, salt and Worcestershire sauce to taste.

STEP 10

Now for serving it up. You can eat this in many ways, first is of course just as it is right now. You can also serve it with some mashed potatoes or even a nice pasta. Don't like either of those? Turn it into a soup! Just add water till the consistency is what you would like for soup and serve up.

I served mine up with very creamy mashed potatoes. Want to make those too? Put around 1kg of floury (kruimig in Dutch) potatoes in a pot, boil them for about 20 minutes. You should be able to easily put a

fork into them. Once boiled make sure to remove all the water and leave them sitting for a couple of minutes. Now add about 200ml of cooking cream, 50 grams of unsalted butter and some nutmeg, salt and pepper to taste. Be sure to mash them well and make sure everything has really got to know each other. You can start with less cream and add more if you do not like the consistency yet.

Well and there you have it! A lovely stew. Now this is of course just a simple base recipe, stews are easily

customized and change to what you like yourself. I just love having one on for a full day, sitting around the fireplace enjoying a nice and lazy Sunday. And because you made it in the morning you don't even really have to cook in the evening! This also goes for a nice and active Sunday, have a good stroll around the woods enjoying the lovely scenes autumn and winter create. And once you come home the lovely smell of stew in the house.

I hope you all enjoy it!

Met takken!





DOWN TO EARTH

Around a year ago, I was honored to join the University Council. I did not have much experience with codetermination yet, but was eager to get to know the world of educational vision, policy-making and decision making in our university. A world that's rather unfamiliar to most of our students, but is – in the end - about them. My first document to read: TU/e's Strategy 2030 "Drivers of Change". A document that should say so much about our student's future, but appeals to only so few of them. Dear Executive Board, could you please get down to earth?

TEXT Ralph van Ierland - Fraction chair of Groep-één

It was approximately day two of 'me in the UC', the University Council. Reading about the strategy of our university: focusing on top talent staff and students, 'transform from teaching to challenge-based learning' and being a 'world-class example' as a university. Sounds great, I guess... But what does that mean to us, students?

Okay, I have to say, to me, strategies and mainly visions often have quite a large amount of 'feel-good material'. Woolly sentences that give everyone the 'Yes indeed!' feeling, like companies which say: "Openness is in our DNA", "true change and progress can only be obtained when working together" or even worse: "we have a no-nonsense, results-driven, collaborative, open-minded and personal way of working"⁰. Yes, these kinds of things are really written in visions, check the references.

However, I cannot really blame our Executive Board for this. This is just how people want to see a vision. If it's too specific, there is too little room for real improvements and new ideas. As a matter of fact, I wrote such pieces myself as well; I haven't read much more woolly documents than my own vision on education, which I had to make for my (elective) education track in the Bachelor. To obtain my teacher qualification, I wrote two of the most unspecific documents a mathematics student could ever write. It was one of the best grades on my list.

Now, however, it is different. We are not talking about some random vision of a random company, or a basic vision on education by a random student. This time, it is about us. And we want to know what is about to change and what we can expect.

Quite often when I talk about the University Council, I get the question of what we are actually doing. I haven't been in a Department Council or Program Committee myself, but I expect some similar questions over there. Perhaps you're now thinking: *Whut, program committee? Well, that's what I mean.*

The students in these councils are doing their best to echo the students' opinions through the university's policies. Allow me to explain this with an example.

Our university's vision on education contains quite a bit of 'challenge-based learning'. A lot, actually. It's the 'last legacy' of the founding father of our own TU/e Bachelor College, Lex Lemmens. A newly retired visionary that could be seen as one of the pioneers of challenge-based learning at the TU/e (only good words about this man). However, it seems to be rather easy to get lost in the feeling of great challenges to develop yourself in a way of self-directed learning and becoming your own version of the engineer of the future, etcetera.

It is a nice thought of how each student chooses their own path, and challenges themselves to develop in a broad set of skills. However, in practice, a lot of students

seem to be a bit more pragmatic. Most students simply do what they do best. We are experts in efficiency; the one who knows about programming fixes the programming, the one who's best in theory derives the mathematical analysis, and the one who's best at writing, writes the report (where the latter is often underestimated).

It would mean that a lot of students in that sense are not broadening their knowledge, even though it would perhaps be the best for their education. The vision is to create multidisciplinary engineers, but in practice, we do only what we already do best. Of course, this does not directly mean a challenge cannot be used for good education, but we need to be critical and tell these policy-makers what it is like to live in their creation. We have many smart people at this university, who come up with great proposals, but most of these policymakers have graduated ages ago. These people need some experience from the field. They need to hear from us what the pitfalls and flaws are, as we are also here to help them.

The University Council is one of our university's codetermination bodies (*medezeggenschap* in Dutch), which means we have formal rights. Rights on, for example, educational changes, but also when it comes to finances, our campus, or the university's vision and strategy. A lot of these politics happen 'behind the scenes', but we're actually working quite some hours a week on these topics.

Perhaps you have seen the publication by the NOS about the '*kwaliteitsgelden*'¹, the money that became available after ending the 'basic grant' in 2015

to improve the quality of our education. We, students, have quite an important say on this matter, and use this right to push for correct spending of these funds. Unfortunately, some university of applied sciences (Dutch: HBO instelling) has spent this on a new coffee corner and more sandwiches in the canteen. Let's not reach that point in our university, even though I do value a good cup of coffee during my lecture and I do forget to bring a good lunch pretty often...

In that sense, I think there is a good balance at the TU/e between those who make the policies, and the students who are reflecting on them. It feels like our university is innovating together *with* and actually tries to spend money on real improvements to the quality of our education. We don't end up with a great coffee corner, but we start at one.

And for me, that one is the coffee machine at GEWIS. Pouring a coffee from the can, which has already been on the heating plate a bit too long and was made with a little too much ground coffee. So then, with that coffee, I can complain a bit about the lost art of making good coffee. It is there where I like to share feelings with my fellow students and it is there where we talk about all those things that could be improved.

However, we won't see our Executive Board often around our coffee machine. It is our job to sometimes take their legs and put both their feet on the ground again. On our playground, preferably, so when they seem to be stuck in their woolly visions and seem to forget about the real world, we can bring them back to where we live; down on Earth.

⁰

TU/e Strategy 2030

¹

<https://app.nos.nl/op3/followthestufi>





LET'S TALK TABOO!

When I asked SUPREMUM if I could write a piece on mental health, I had in mind certain aspects I wanted to cover. One of them is my experience with it. It's hard opening up as much as I did to a piece of paper, but if it helps at least one person, it'll have been worth it!

TEXT Leticia Malagutti

Heyy GEWISers! Hope you've been doing well with the new B.C/A.C (Before/After Corona) system.

I've been doing well so far, but this article is not about me (ok... maybe a bit, since I want to state my own experience, but still)! What is this article about, then? As the title suggests, it's taboo: MENTAL HEALTH! Now that the elephant in the room is already comfortable, it's about time we're comfortable with it. It's normal for everyone to experience some symptoms of mental health issues, especially in Uni, but if they keep coming up at a stronger rate, then it's time you start paying attention to them.

TU/e offers certain help, and I'd definitely advise you to contact the Academic Advisors (AA) about any issues you have (not only mental health, guys, talk to the AA!!) They may redirect you to other professionals in- or outside of the TU/e, but they'll do something!

MY EXPERIENCE

Since 2014, I thought I had something anxiety-related, but was too scared to ask for help. I thought that my parents would be disappointed and I wasn't a good enough daughter/person (queue in "Reflection", Mulan/"Wrong Side of Heaven", Five Finger Death Punch). I couldn't be more wrong. In 2017, I decided to ask for help because I couldn't take it anymore. That was my best decision ever! I was diagnosed with anxiety disorder.

2018 was a difficult year for me, as a senior in an American school in Brazil. I had not only the North-

American exams (6 APs and 2 SATs), but also the Brazilian Standardized Test (ENEM), 2 very different curricula. I was in class for ±14 hours a day and still had my homework/studying on top of that. During the weekends, I was either sleeping or studying. I didn't do anything else, basically, for eight months; it wrecked me. In March, my body gave in: I had appendicitis and was forced to rest for a month. Weirdly, that made me even more anxious! I wanted to study (oh my sweet summer child), but couldn't. Needless to say, my exams in May/June had undesirable results, making me feel even worse, but I graduated! That year I was diagnosed with depression, which seemed to have started in 2014. In November, my anxiety-diagnosis became more specific: Generalized Anxiety Disorder (GAD) and it seems my depression branched from it.

In 2019, after retaking some APs, I made it into TU/e. I'm happy I went, since I made some of my best friends and met GEWIS, |FUN|, Supremum... but I wasn't ready for it. In August 2020, I had 10 ECTS. However, I was in contact with the TU/e about my issues since the beginning of the year (AA!!!!), and I'm now in a "gap year" to take care of my mental health in Brazil. When I return to TU/e, I'll redo my first year. I'll be 21, so trust me when I say YOU HAVE ALL THE TIME IN THE WORLD! "The best time to plant a tree was 20 years ago. The second-best time is now." (Chinese proverb) Whatever you have to do, just start now!

I know it's hard to ask for help, especially in the environment you're all in right now. It's hard to accept you need help, and it's even harder to do so if you see all your friends "doing fine", but you need to understand

that asking for help doesn't make you less capable. It doesn't make you weaker, in fact, quite the opposite, even if it doesn't feel that way. No one is good at everything; everyone needs help with something!

It's not an understatement when I say stopping for a year was the hardest decision I have ever made. Mostly because I can't blame anyone else for it! I can't blame my parents; they gave me a choice. I can't blame TU/e; they were very helpful. I can't blame it on not having my BSA; I was given a second opportunity to get it. And this sucks, because this decision was purely my choice! It was me telling myself I'm not ready yet and need help. I can't do this alone. I need to be the one looking under my bed and telling myself there are no monsters there. It's really scary knowing that if it doesn't work out, it's my own fault. But my friends always tell me I'm doing the best I can and, honestly, that's all I can do (queue in "The Next Right Thing", Frozen 2). My friends, my family... they were the ones that gave me the strength to do this.

As Jane the Virgin once said "You're only as weak as you think you are. You're only as strong as you choose to be." And let me tell you, accepting your mental health isn't perfect and admitting you need help is never gonna be an easy choice. But just remember that you're not alone!

SUICIDE PREVENTION ADVICE

WAIT!

- W Watch out** for signs of distress and changes in behaviour
- A Ask** "are you having suicidal thoughts?"
- I It will pass** – assure your loved one that, with help, their suicidal feelings will pass with time
- T Talk to others** – encourage your loved one to seek help from a GP or health professional

LIGHTHOUSE

Lighthouse is a new association intended to help people with their mental health. The idea already existed B.C., but became a more pressing issue. This is only its first year, but everyone is really excited to help each other out. The best way to contact them is through their Instagram @lighthouse.eindhoven . I'm also open to help with any questions (to the best of my ability) through my email for now: leticiamalagutti@yahoo.com.br , a mouthful, I'm aware...

Some see mental issues as something merely negative. Maybe that's why discussing it is taboo. Most members described their issues as tough, disabling, exhausting, crippling, or absurd, but Jay had a different perspective! "I would like to use the word honoured because disability has brought me many gifts, like deep connections with other people and an open mind." When asked about joining Lighthouse, Jay said: "Peer:peer support is vital for me to finish my studies because people who experience the same things know what it's like even at the moments when I am no longer able to explain myself. This kind of support can be found nowhere else." Pim added that "getting more insight into my own mental health is very helpful".

10 ways to look after your mental health



Source: Mental Health Foundation (UK)

Alice, answering whether Lighthouse has already helped, cutely said "Hmm, Lighthouse makes me want to get my stuff together more this year, because I want to be really active with bringing the community forward, and for that I need to make sure I'm able to". Hopefully when it's a bigger association we all feel like them. Personally, Jacqueline explained it best: "I find the topic of mental health incredibly important and it is overlooked, belittled and not understood way too often. I am really curious as to how Lighthouse will evolve and will try to remove that stigma. I am always interested to see how others deal or struggle with the same issues I do."

As for how being helped with your mental health feels,

ADVICE

As you may have noticed, I really like quoting songs/ TV Shows/Movies to express what I'm feeling. I find it helpful having a quote booklet for when I'm not feeling all that well. They help me remember that I've survived 100% of my worst days so far. I also have funny/nice quotes from my friends to remind me that I'm not alone.

Try to first talk to your friends and ask them for help! Sometimes just by talking to someone about your issues goes a long way, and our friends are the ones who usually know us best, so more often than not they can give you amazing advice as well. My friends were the ones who mainly supported my decision of going away for a year so I can get better, even knowing I wouldn't be able to see them for a while; they just wanted to make sure I was alright.

That's the main thing about Uni... no one knows what the heck they're doing, but they're doing it together. For now, I can help you with an exercise called grounding:

“ think of
5 things you can see,
4 you can touch,
3 you hear,
2 you smell,
1 you taste. ”

Sounds silly, but truly helps.

"Look inside yourself, you are more than what you have become. Remember who you are." – Mufasa, The Lion King

6 WAYS TO PROTECT YOUR MENTAL HEALTH DURING SOCIAL DISTANCING

- Identify the positives
- Don't overload on news
- Be social, virtually
- Find things that make you feel calm
- Set a schedule
- Help others

HEALTHBOX

the answers were unanimously positive! Words like safe, alleviating and aiding were the most mentioned. The same feeling applied to helping people with their mental health, where answers were mostly words like gratifying, rewarding, loving and grateful.

Infimum: A strange or funny quotation from a teacher, a student or faculty member. Here you can find infima sent to the Supremum committee via inf.gewis.nl.

Lieke J. receives her ODC shirt

Lieke Screams excitedly: "Yaaaaaaaaaaaaaaaaaaaay!
The colour is so ugly!"

Luuk: "weten we zijn bankgegevens"

Amber: "mijn bank is groen... hahaha dat vond ik heel grappig"

Pratend over de kerststal

Samuel: "Oke, ik ben Jozef, Noa is Maria en dan is Rink Jezus"

Noa: "Maar wie is de baby though?"

Koen: "We gaan even terug naar de middeleeuwen.
Oh wacht, we bezitten België, kut!"

Jealy tegen Roy op WhatsApp: "Ben wel ovr een half uur weer poenhouder maar priem"

Roy: "Nee dat kan helemaal niet want ik ben de poenhouder"

Lydia: "Wat hebben weinig mensen hier Instagram zeg, ik kan bijna niemand taggen."

Semi: "Wij moeten gewoon werken Lydia.."

Houthuijs: "giet het of door mijn keel, of door de gootsteen"

Treinconductor: "Eten in de trein mag, maar vergeet niet na ieder hapje weer je kapje."

Celine doet zonnebril af: "Het is veel meer licht zonder zonnebril"

dag nadat Maradona is gestorven een minuut stilte voor een voetbalwedstrijd

Tim H.: "Zijn we stil voor Madonna?*"

Jealy van den A.: "Ik vind een High Beer wel iets anders dan Maandelijkse Borrel die elke week plaats vindt."

Ralf: "Ik dacht ff het is nog veel te vroeg voor een bak maar het is al half 3"

Rik M.: "7 komt toch voor 8?"

Daan: "Happy b-day sis!"

Leticia: "Happy Birthday to you too!!!"

Leticia thinks

Leticia: "Ohh... wait..."

Jealy moet het alfabet achterstevoren zeggen

Jealy: "Z Y X V W U ..."

Iedereen: "Fout!"

Jealy: "Het is toch UWV?!?"

Iedereen: "Dat is het uitkeringsbureau, niet het alfabet!"

Roy K.: "Biting on your wang is not so handy"

Wouter van der H.: "Als jij jouw kleertjes aan hebt, DAN calm ik mijn titties"

Leon: "Waar slaap jij vanavond?"

Jealy: "Thuis, maar het huismatras is nog vrij!"

Leon: "Oh, ligt er niemand bij jou?"

Keltjens, terwijl Erwin, Meeles en Ingmar een pint aan het adten zijn om de laatste flesjes van een lege krat te vullen, allen 26: "Wat fijn dat jullie nu eindelijk volwassen zijn geworden!"

Sanne de W.: "Waarom staat deze zwarte balk er? Is dat artistieke keuze?"

Gijs de M.: "Omdat het vulemmertje in Paint het niet in één keer weg kon halen."

Tijdens B.O.O.M. BuitenBioscoop, met New Kids Turbo.

Film: "Verdachten worden veroordeeld tot 240 uur taakstraf"

Pieter E.: "Oh, dat zijn maar 7 studiepunten"

THE FOOTPRINT OF 39

It's crazy to think that the Earth has rotated around 150 times since we started our board year. Even though we are almost halfway, it feels weird. Some of you might think that we are an imaginary board, never seen in person. Many haven't seen or talked to us, as not everyone is coming by the GEWIS room anymore. Luckily, we are from the same planet as you and absolutely no aliens!

TEXT Board 39

Our board year started sadly the same way the 38th board ended their year: at home. No inauguration drink, no summer holiday borrels and even no physical board meetings. Luckily, at the start of August we were allowed to work in the GEWIS board room incidentally and at the end of the month we were allowed to work there every day!

We all would've guessed, working together in the boardroom is much more fun than working at home. Not necessarily more productive, but really, a lot more fun. Instead of seeing pixels, we see each other's three dimensional faces. We can ask a fellow board member a question and get an instant reply. We can help each other easily, when someone has little time. We can scream things towards each other without the fear of someone else talking over your stupid joke. All very important and handy things for a board!

“ No Christmas sweaters from the 38th board, but instead trashy memes for the 39th. ”

Just like every continent, every country and even every city on this Earth has its own identity, so has every board of GEWIS. Even though we haven't been in the GEWIS room long, we are still doing our best to

leave our footprint. The quirks that identify you do have to “grow”, you cannot force them. Growing takes time. Of course you can copy your predecessors, but where is the fun in that? No Christmas sweaters from the 38th board, but instead trashy memes for the 39th.

Why memes? Well, because they are fun! At one point, Roy made a meme about Irne and it was too beautiful to not hang on the wall. However, Wouter had to prevent that Irne could take this image down. So what is the solution? Well, while you think of the answer, we will continue with another thing we do.



When we started with our board year, Jealy got the idea to capture our year on photo. Every week we gain new experiences, so it will be hard to remember what we did in September several months later. Thus the idea of the Selfie of the Day has been born. We made a Whatsapp group and try to share at least one selfie every day, capturing a memorable moment, experience or just something interesting. Unfortunately, our board year does not seem to be that interesting, as it seems to be very hard to actually send a photo every day.

Have you already thought of a solution on how to prevent Irne from taking down the memes in the boardroom? The answer is simple: you go up high, so Irne cannot reach it. So we did and started the chain of memes going around the boardroom. At some point we will probably have come full circle, but luckily there is more than enough empty wall space to fill.

Speaking about the boardroom, doesn't it seem somewhat clean and cleaned up? Of course, there are a lot less people in the GEWIS room and the board room these days, so of course it does not get as messy as usual. However, you might also have noticed that the free for all was a lot more filled in September and October. This all happened because of the cleanup urge of Irne and Jealy, to give the whole board some breathing room in the storage and board room.

Another thing that makes the 39th board so great is our color: peach. Every board has its own color. This color is used everywhere: in the suits, clothing, postcards and many other board attributes. In the past few years, we have seen for example light blue, pink, light green and purple. As a board, you can of course choose a color of one of your predecessors, but members will always remember the “old” board as well. So we started looking for a new color, which –



after much, much, much discussion – ended up being the beautiful color peach!

“ Het Dakterras hasn't burned down yet, so that's a plus. ”

Why peach? Firstly, it is a beautiful color that no previous boards (as far as we know) have chosen. Secondly, we have a gorgeous emoji that we can spam everywhere, for example in the Slack workspace of the 38th board. Thirdly, we have our own board fruit! Fruit is always nice and it probably also helps to prevent gaining boardkilograms. Do you need any more reasons? We don't!

These are just a few things that make us the board that we currently are. We will probably think of more stupid/fun things to do, but like we said, these things grow over time. So far, our board year is going pretty well and we're having a lot of fun. Het Dakterras hasn't burned down yet, so that's a plus. Let's hope that everything in the world will become better soon, so we can still enjoy the company of all the members before summer arrives again. See ya!

COMMITTEES & FRATERNITIES

GEWIS is built on top of committees. Besides, Study Association GEWIS has several fraternities which contribute to the atmosphere and organize activities.

Find out more at: www.gewis.nl/association.

FRATERNITIES

ATHENA
ATHENA



B.O.O.M.
Buitenplezier Op Onze Manier



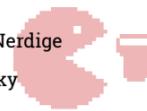
Défi
Défi



GELIMBO
GEWIS Ervaart Limburgse
Initiatieven Met Bewondering
en Ontzag



GEPWNAGE
GEWIS Plant Weer Nerdige
Activiteiten en Geeky
Evenementen



I.V.V
In Vino Veritas



COMMITTEES

AC
Activiteiten Commissie

AVICO
Audio- en VideoCommissie

BAC
BAr Commissie

BATA
Batavierenracecommissie

C4
Corporate Communication and
Contact Committee

CBC
Computer Beheer Commissie

GSM
GEWIS Social Media

FESTIVITEIT
Feestdagen Extreen Smaakvol
Tevens Ietwat Verantwoordelijk

FYC21-0 ITAM ★
First Year Committee

FYC20-1 THE MEERKATS ★
First Year Committee

FYC21-2 THE BEER
MUSKETEERS ★
First Year Committee

FYC21-3 GELØL ★
First Year Committee

FYC21-4 ROCK ★
First Year Committee

FYS ★
First Year Support

GEBALLMERPIEK
GEWIS'sers Ervaren BALLen MET
Rigoreuze Precisie In
Excentrieke Kups

GEDWAAL
GEWIS'ers Dwalen Waar
Anderen Anders Lopen

GEFLITST
GEWIS Fotografeert Leden In
Toffe Situaties, Toch?

GEHACK
GEWIS Ervaart Het
Algoritmisch Code Kloppen

GELIFT
GEWIS'sers Liften
Ieder Fantastisch Traject

GEMOLD
GEWIS'ers moeten
overal leugens doorzien

GETAART
GEWIS'sers Eten TAART

GEZWEM
GEWIS Zeilt Weer Een Meter

INTRO20
Introductieweek 2020

ODC
Ouderdagcommissie

SR
StudentenRaad

STIJL
Huisstijl Commissie

SUPREMUM
Supremumcommissie

TRAIN
Training

WC
Web Commissie

SUPREMUM COLOPHON

SUPREMUM

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