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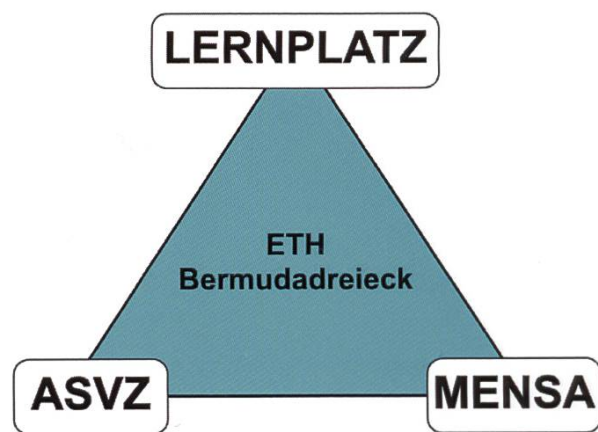
visionen.vis.ethz.ch

März 2022



bring your towel

Magazin des Vereins der Informatik Studierenden an der ETH Zürich (VIS)



Editorial

Dear VIS member,

I am happy to present to you this VISIONEN issue. The theme is sports this time!

You say sports aren't your thing? I refuse to believe this! Consider that your hand muscles of steel just successfully lifted this gigantic magazine (60 pages!!!) Changed your mind yet?

All kidding aside, sports are good for everyone! No matter what kind of sport. No matter when you do sports. Sports are always good for you, as long as you don't hurt yourself. So let's pump it up!!!

Going to ASVZ makes most ETH students' hearts leap (literally). Many of you are probably similar to me: I know ASVZ quite well. During intensive times of my studies, when I disappeared into the ETH Bermuda Triangle (see picture), I visited ASVZ very often. Nevertheless, it continues to surprise me really how much it has to offer. I've repeatedly tried new sports during my studies, which was a lot of fun, and I want to encourage you to do the same. Join the Super Kondi or the yoga classes! Or maybe try out the different dance classes like breakdance, hip hop, but also the partner dances like salsa or tango! There even exists a sauna, and, and, and...!

If you're still not convinced, you definitely don't want to miss out on the sporty articles written by our team of instructors:

Johan will tell you about bizarre sports that will surely make you alternate between laughing and face-palming (page 22). On page 19, you'll get the (probably) most entertaining lesson on protein consumption from Matthew, who will guide you to mad biceps. Afterwards, Robin, our sarcastic keyboard specialist, will teach you all about the complex apparatuses used in the sport of typing (page 26). Also, be sure not to miss the two texts where Pascal satirizes the ASVZ showers (page 12) and presents you a shower-related Herculean AlgoLab task.

This HUGE issue (60 pages) contains many more awesome content, e.g., a book suggestion from Fiona, ant colony advice, a pen & paper game — and an article where I tell you about how I got pranked by a Visionen issue from 1991! This issue also features a lot of English content for all of our international readers.

Despite the stressful exam period, we in the editorial team have tried to put some good ideas on paper – this time, even with a brand-new section called *SHORTS* for short articles (page 50)! I hope we can keep you entertained!

Ricardo



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bring your towel

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We IT

**«Das Studium
hat immer noch
Top-Priorität.»**

Claudio Ferrari,
Werkstudent

**«Auf Augenhöhe
entwickeln wir die
Firma gemeinsam
weiter.»**

Katja Sonderegger,
Software Engineer



Claudio, Katja und Nicolas
erzählen dir, warum sie ihren
Job lieben. **#weloveit**



ergon.ch/weloveit

**«Plötzlich bist du mit
Herausforderungen
konfrontiert, die
du im Studium so
nicht hattest.»**

Nicolas Trüssel,
Software Engineer

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ergon

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people –
smart
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Präsikolumne

EMIR İŞMAN - THIRD PRÄSIKOLUMNE, STILL CONFUSED

Dear readers,

After a semester where we could (mostly) live normally, I hope you could all survive the past exam phase! Now that the authorities have decided that the virus does not pose a problem anymore, we can continue planning the semester as usual.

Every semester, VIS holds a general assembly where VIS members decide on every issue concerning VIS: budgeting, bylaws, and any other proposal you may submit. Additionally, we take care of the elections of committees, representatives at various bodies and, of course, the board. Even though I have no idea when this issue of VISIONEN will actually reach you, it still should not hurt if I spread the news here as well: This semester's general assembly takes place on March 7th, 2022, 17.00, in StuZ (CAB F 21). We have free food and drinks - therefore it is a great opportunity to meet new people while enjoying

a couple of drinks and occasionally raising your voting card to vote on new proposals and elections. If you would like to know more about how the general assembly works, I will take the lazy route and kindly redirect you to the VISIONEN issue 2021/1 where Juan explains it in a very detailed fashion.

I hope to be able to continue to write here in this corner during this semester as well (subject to my reelection in the GA). After an uneventful semester break and exam phase, I am glad to see that life is back at ETH, CAB and oVIS! I am looking forward to a semester with lots of cool VIS events, enjoying drinks in PapperlaPub every Wednesday, writing fast numerical code a.k.a. ASL, prosecco breaks in oVIS and much more. Have a great start!



Switzerland's largest academic IT recruiting fair

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🕒 Sat, 12 Mar, 11-17:00

📍 Mensa Polyterrasse

100+ Companies

Startups & Market Leaders

Job Offers & Internships

Master / Bachelor Theses

CV Checks

Hopokolumne

JOHN STAIB MATILLA AND THE HOPO TEAM - ALWAYS READY TO HEAR YOU COMPLAINING

Once again so that everyone knows who we are: We are all about our university politics here. We will help you with the problems in your student life as long as you reach out to us, whether it is about exams, exercise sessions, lectures, the food at the mensa (just go to Clausiusbar)... You can always do this by reaching out to us in hopo@vis.ethz.ch.

I also highly recommend you guys to read the minutes of our meetings, which you can find on the VIS-HoPo site on the VSETH Wiki. Since I understand looking it up by yourself seems like an insurmountable task I will also try to make them a bit more accessible next semester without spamming you people with mails next semester 😊

As to what we have been doing since last time we wrote here. Well these last few weeks have not been the most active for HoPo, since everyone was vacationing or studying. At the time of writing this we have not yet started the new semester and I will be visiting the grading conference of DINFK in the next few days. We also got the feedback for many of your lectures thanks to our amazing semester speakers, the highlight

for this would probably be Professor Hiptmair actually getting a student to edit his videos next year, which might make it one of the first core courses with a director's cut.

Also, we have had some positive developments in finding study places for students. Apparently, the computer science library is looking for new people to work there so they may open for a few more hours and you might be able to spend more time in the most silent place in all of Switzerland. If we combine this with foodlab finishing their remodelations, we might have enough seats everywhere for when the Lernphase is already over and we don't need them anymore.

Other small developments would be our team still meeting with the guys from code expert so that your favorite coding platform may be improved, a professor accidentally leaking the possible criteria for the data science master admissions thanks to our loyal lecture snipers (we are still trying to maybe get a student into the admissions committee with mixed results) and the exam planning committee not wanting to let students going in exchange take the exams outside of Zurich on a technicality (nice as always).

Now going into the new semester we will probably have a lot to report after the grading conference (a lot of happy things for sure). We will also be having a meeting with Denise Spicher and her team to brainstorm ideas on how to help the students, which given how cooperative they are will surely result in a lot of good (seriously she's the best).

Also, you can expect more developments on the mentoring project which was started last semester with great success. We are still working for our beloved Erstis to not be lost in the overwhelming place that ETH can sometimes be.

We are also looking forward to your complaints and difficulties (to solve them, not for you to have them) in the next semester and hope you all enjoy your (hopefully COVID-free) summer semester as much as we will 😊

Have a nice day and may the force be with you,

John

ANZEIGE

Imagine a world
without fear of cancer.
(We do.)



It is our commitment to innovate med-tech for cancer care.

Varian Medical Systems is an international company with an R&D site located close to Baden. Teams at this site create software and hardware for radiotherapy products in the fight against cancer.

We are looking for the following talents:

- Software Engineers
- Hardware Engineers
- Research Scientists

Will you join us?
Scan the QR code and
find your future job online.



PASCAL STREBEL – HAS NOT YET FULLY PROCESSED THE MENTAL DAMAGE INFLICTED ON HIM BY ALGOLAB

The authors of this year's AlgoLab exam have chosen Hercules' ten tasks as its theme. Due to Covid, the duration of the exam was shortened again, contrary to the original planning, which is why only four of the six prepared tasks were used. However, we at Visionen have gotten an exclusive copy of one more leaked task:

Exercise – Hercules and the ASVZ Showers

Full of hydra blood, giant snot, bird poop and stable droppings from his previous labours, Hercules wants to treat himself to a hot shower in between so that Cerberus doesn't smell him from miles away when he ventures into hell for his final labour. He also urgently needs a few minutes under a shower because he is still a bit horny from his encounter with the Amazons.

On the way to the ASVZ showers, Athena warns him just in time about all the dangers that could lurk there. Especially dangerous are the musclemen and the old people. Since Hercules himself is extraordinarily muscular, a collision with one of the former would be fatal. He must also beware of the latter, for they might steal the skin of the Nemean Lion, the source of his almost invulnerable powers, which unfortunately isn't waterproof, so he cannot take it into the shower with him.

Thus, Hercules first pays a visit to the Delphic Oracle, who can predict the showering times of the musclemen. In addition, he uses his extraordinary mathematical skills in combination with his knowledge of human nature to determine two parameters m and o . Here, m denotes the maximum number of musclemen he can avoid at once (that is, who can be in the shower with him at the same time without a fatality). o stands for the maximum amount of time he can spend in the shower without an old person accidentally stealing the Nemean Lion's skin.

Now Hercules wonders when he has to enter and leave the shower so that the previous constraints are satisfied and he can shower for as long as possible. At first, however, he is satisfied by simply knowing the maximum duration of such a shower.

Input The first line of the input contains the number $t \leq 30$ of test cases. Each of the t test cases is described as follows.

- A test case starts with a line that contains an integer k , denoting the number of musclemen currently in ASVZ ($1 \leq k \leq 2^{10}$).
- The following line contains two integers m and o , separated by a space, denoting the maximum number of musclemen Hercules can avoid at once ($1 \leq m \leq 10$) and the maximum amount of time he can spend in the shower without his cloak being stolen ($0 \leq o < 2^{31}$).
- The following k lines each describe the showering times of a musclem. The i -th such line contains two integers a_i and b_i , separated by a space, denoting the shower start and end times of the i -th musclem ($0 \leq a_i < b_i < 2^{31}$), as predicted by the Delphic Oracle. A musclem enters and leaves the shower immediately, i.e., he counts as inside the shower at the time a_i and outside at b_i .

Output For each test case, output a single line consisting of a single integer denoting the maximum time that Hercules can spend under the shower, subject to the constraints given by m and o .

Points There are four groups of test sets, worth 80 points in total. For each group, there is also a hidden test set that is worth 5 points, so you can achieve $80 + 4 \cdot 5 = 100$ points overall.

1. For the first group of test sets, worth 25 points, you may assume that $k \leq 100$ and $m = 1$, i.e., there can be at most exactly one muscleman in the shower, apart from Hercules, and there are not too many of them in total.
2. For the second group of test sets, worth 25 points, you may assume that $k \leq 1000$, $m \leq 2$, and $\forall 0 \leq i < j < k : b_i \leq a_j$, i.e., the shower intervals of the musclemen may only overlap at the start and end times.
3. For the third group of test sets, worth 15 points, you may assume that $k \leq 1000$ and $m \leq 2$.
4. For the fourth group of test sets, worth 15 points, there are no additional assumptions.

Sample Input

```
1
3
1 5
0 3
3 5
4 6
```

Sample Output

```
4
```

ASVZ Shower Guide

PASCAL STREBEL - SOMETIMES EVEN DOES SPORTS BEFORE SHOWERING (GO SPORTS!)

For all not completely mentally disturbed people, showering belongs to ASVZ like beer belongs to board meetings and a motion of order to stop the discussion belongs to the general assembly in VIS. I have even witnessed computer scientists who only go to ASVZ to take a shower and leave out the sports part completely. By showering, you are not only doing yourself a favor, but also all fellow students and lecturers within a radius of ten meters around you. Unfortunately, as you may have already heard, there are many dangers lurking in the ASVZ showers and along the way there. But to make sure that your wonderful showering experience (and everything related to it) doesn't turn into a nightmare, I've put together the following survival tips, arranged by sports facility.

Polyterrasse

- The first challenge already awaits you in the relatively narrow entrance areas of the dressing rooms. Broad musclemen regularly run through there, and you have to dodge them. It's best to get ready to duck when you enter and then slip between the skinny legs of the jocks to avoid a collision.
- Especially if you spend your lunch break here, there is another danger besides the musclemen: old people. They are everywhere, mostly naked, walking around confused. While you're in the shower, you should always keep an eye on your bath towel, because every now and then there's a mix-up.
- You may need to wait for the right time before exiting the shower. Foot fungus phobics regularly let the cold-as-ass floor-cleaning sprinklers run wild without any consideration for the suffering incurred. What are clean feet worth if you get frostbite in the process?

Irchel

- Some lunatic has thought it a clever idea to alternately label the dressing rooms as male and female. Furthermore, the entrances are perfectly oriented to provide a direct line of sight to the shower exit. So if you don't want to get shrieked at (and possibly reported for sexual harassment), better double check before blindly ripping open a door.

- For some reason, there's a little pee booth in the middle of the group shower. Obviously, you wouldn't want to stand in there.
- Beware of the cat! She doesn't like to get wet and lets you feel it.

Hönggerberg

- Mind your steps on the stupidest staircase ever invented (VAMP HS21.1 reported in detail).
- Otherwise, it's actually pretty nice here.

Rämistrasse 80

- If you are alone or the first to enter the shower, turn on all showerheads to full heat and wait about 10 minutes. Maybe one of them will actually warm up a little.
- Some of the showers have two compartments with a wall in between, and deciding which side you want is harder than choosing the right starter Pokemon. General rule of thumb: If one part is full and the other is still empty, you go to the empty one. Otherwise, you check out the people standing in there and decide after stalking their linkedin profile.



General Best Practices

- The ASVZ rules explicitly prohibit intimate shaving for a reason. Be prepared for the worst.
- If you choose a corner shower, you can bend over to pick up the dropped soap without worrying.
- Usually, the same rule applies as for the men's urinals: If there are five showers, they are completely filled by three people. It is considered unfriendly if you go to the shower right next to someone. And standing under the same shower as someone else is a complete no-go!

With this knowledge, you'll be well prepared for anything that can happen under the ASVZ showers. So don't be a creep and stay clean!



How ASVZ Might Stop Your Bot

MICHAEL KELLER – RECOMMENDS NOT TO TRY THIS AT HOME

So, you've decided you've had enough. You have missed out on so many cool ASVZ events simply because you were a tad too slow to sign up. In a Dr. Doofenschmirz-like evil monologue, you decide to get to work on the "Compysy-over-normys-inator" bot to sign you up before anyone else. Here is how Perry the Platypus (a.k.a. ASVZ) may foil your plans.

They block you

Creating a bot may work well when there are no consequences for your actions. Often, this might be achieved by hiding your bot's identity behind a fake email address and a VPN. With ASVZ, however, you have to register using your personal student email. If they determine you're using a bot and that violates their terms of service, they could simply block you from registering for events entirely.

They change the website

Depending on how you implement your bot, you might have to maintain your code every time ASVZ changes parts of the site. If they change a small detail every week, you might get frustrated enough with your bot breaking constantly that you abandon the idea entirely.

CAPTCHAs and Co.

I'm sure you've had to click on all of the images containing traffic lights before. These challenges (CAPTCHAs) are easy to integrate into a website and extremely effective at preventing bot activity. There are many talented engineers at Google, Cloudflare and other places working on these methods. You, a single ETH student will, in all likelihood, not be able to get around these, should ASVZ decide to implement them.

Your conscience

Let's say you manage to code up a bot that works sufficiently well for your needs and doesn't get detected by ASVZ. I'd still argue that it's rather unfair to your fellow students to use it. Like Spiderman says: "With great power comes great responsibility" 🤖. Please don't use your skills in a way that puts your fellow students at a disadvantage.

Legal Stuff

Obligatory “I’m not a lawyer, this isn’t legal advice”. To the best of my knowledge, you are liable if you cause a service disruption. If you and a sufficient amount of other people start using bots (that refresh the ASVZ site multiple times per second) and thus cause the website to go down, you could be in trouble.

Hopefully, I’ve been able to convince you that using your awesome coding powers for evil is a bad idea. Instead, consider joining CAT and CIT, the awesome IT committees the VIS has! There, we will know how to put your skills to good use, for the benefit of your fellow students.



ANZEIGE

ENDLICH!
DIE MIGROS ROLLT DAS UPDATE FÜR
DEN INTERNET EXPLORER 2.0 AUS **

**** BESUCHE UNS AN DER VIS KONTAKTPARTY!**

Zum Glück haben wir uns seit 1995 in der IT weiterentwickelt* und sind zu einem der grössten IT Arbeitgebern der Schweiz geworden – agiler und vielfältiger denn je.

Wusstest du, dass jede*r zweite Mitarbeitende im Migros Hauptsitz am Limmatplatz in der IT arbeitet? Insgesamt über 1000 Personen nach agilen Methoden.

In 139 verschiedenen IT Funktionen und unzähligen Projekten rund um die Themen Data-center/Cloud, Netzwerk, Workplace, online Plattformen, Apps, Internet-Auftritt, Digitale Supply Chain, Analytics und vielen mehr.

Starte deine Karriere
bei der Migros
und gestalte mit uns
die Zukunft!



MIGROS

Some Fitbit Experiences

FIONA – DOES NOT LIKE FITBIT

My Sister bought a Garmin watch and lent her fitbits to me. You don't look a gift horse in the mouth, but I'm still quite disappointed. All I wanted was to check my vital signs to know I'm still alive.

What I'm working with:

Charge 2 (2017)

My sister had problems with the wristband, which just never really fit. It's not possible to actually go running with it because you will lose the watch. She sent the watch in multiple times and got different wristbands, but the problem never disappeared. So this watch is not useful for high-frequency movement, but it can still track my sleep.

Versa 2 (2019)

The battery is very bad; the watch will stay alive for two hours at most. My sister got it from a friend who did not use it anymore. The battery was already this bad although the watch was only half a year old. So this watch is useful for activities that don't take longer than 2h.

To be able to really use a fitbit watch, you have to open a fitbit account and download the app. That's when I was asked to go premium. Because clearly it's not enough to buy a watch! To use all of its functions, you need to pay 8.99€ per month. (I just tried to find the price in Swiss francs, but on the fitbit website for Switzerland, the price is in euros¹).

To synchronize the watch with my phone, the phone has to be online because Google² will only make your information available to you if you give it to them.

To get your heart rate in the same chart as your sleep state, you have to go premium. But in another chart, you can look at your heart rate from the whole day, including the night, so you will find that premium information, just not layed out very nicely.

Although I changed the settings and personalized my info, the two watches have different opinions on my menstrual cycle. One will tell me I'm bleeding while the other is convinced that this will only start in 3 days. They never ask³. Changing this takes more work than I'm willing to do, so I'll just sit here and judge.

I might be a little too hard on fitbit, since I'm not using their most recent products. But I never heard any Garmin user complain about any of my problems with fitbit.



[1] why?

[2] fitbit belongs to Google

[3] Why should they?

Don't sweat it, take a sauna

ELIAS RUFF – YEARNINGLY AWAITING THE REOPENING OF THE ASVZ HÖNGG SAUNA

Yeah, sports are cool, but have you ever taken your time to properly relax after being on your grindset? Instead of simply bringing a single towel, why not include two additional ones and extend your stay with a relaxing sauna session at the end? Here is a quick rundown of an addictive pastime.

Some form of sitting in an enclosed space and sweating to your heart's content has existed in northern cultures for a long time. The Finns have, according to official numbers, almost half as many saunas as there are inhabitants. And while simply sitting around and sweating might remind you more of the excruciating consequences of climate change that loom on the horizon, I can assure you that there is more to it.

Here's a basic explainer of the magic. The heat in European style saunas is usually very dry, with air temperatures generally ranging between 60°C to 95°C. Because of the low humidity, your body's natural cooling system, a.k.a. perspiration, works pretty efficiently in transferring heat from your body to the surroundings at the cost of your sweat. Due to that dynamic, you can enjoy these conditions for a modest time. A stay in the sauna itself is normally up to 15 minutes, but you may, of course, leave earlier if the heat is too much to bear. The best part about sauna are the infusions, where water is poured over heated stones in the sauna. This increased

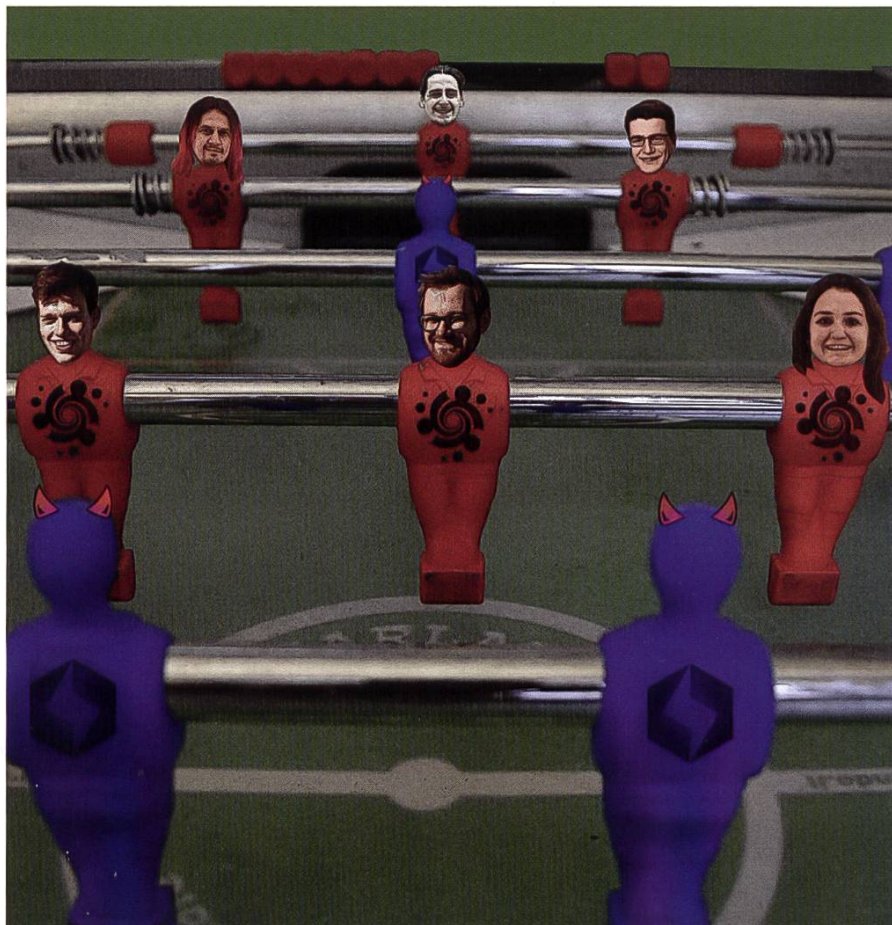
humidity exacerbates the sweating, which feels very cathartic, and if you're lucky, there might be someone present who'll wave the hot air on you with a towel, using intricate moves. After heating up, you should cool down with a shower or a bath and if you're adventurous, you use the coldest water available. That temperature change gets the blood flowing and leaves you refreshed. You can do that multiple times in a row, just be sure to take appropriate rest in between. Your body knows how much.

The etiquette varies a lot depending on where you go. Here in Switzerland, saunas are regarded as a place to relax and can usually be found at gyms or spas, with the saunas being mostly mixed gender and the occasional women-only sauna. You're usually nude with a towel to sit on or wrap yourself with and another for non-sweaty drying purposes.

That's a lot to take in, I know, but this is where the fun begins. Although health benefits have not been scientifically proven, spending an hour or more in the sauna is relaxing beyond belief. It is hard to explain. Something in my lizard brain really enjoys doing nothing but sweating profusely and afterwards, when you rest, your body feels exhausted in a good way. I could spend entire days in the sauna, were it not for the degree of a certain institution I aspire to have someday. And like many other relaxing activities, a visit to the sauna is even better with friends to chat with and suffer together. You can also bring things to the next level. If you spend the extra money on a visit to a professional spa, you encounter infusions with scented oils, salt peelings and creams that leave you smelling wonderful and with amazingly soft skin.

Luckily, the ASVZ was ingenious enough to install a sauna area at the Höngg complex and a small one at Irchel, which lets you enjoy this primal activity for an extremely modest extra fee in comparison. Sauna has also had numerous ardent followers among the VIS over the years, which has, for example, lead organizers of the snow days to take access to a sauna into consideration when looking for a venue.

If you've been intrigued by all of this you can either visit your nearest spa or follow the ASVZ instructions for whichever facility is open/preferable and have a go at it after a workout or just for the sake of it. It'll do wonders, especially in winter.



Auch das Visionenteam ist sportlich.

A Protein Odyssey

MATT WEINGARTEN - EIN BYLINE-VERGESSENDER VORSTAND

Strutting around the CAB halls and parading the fattest dumper the computer science department has ever seen, building an impressive physique to assert dominance over your Lenovo ThinkPad (empirically shown to reduce bugs) or achieving such extreme levels of vascularity that people can't help but ask themselves if you are hiding a full meal of spaghetti bolognese right under your skin (my personal driving factor). All valid reasons to hit the gym and hit it hard. Now, before we all start throwing around the heaviest weights we can find and ingesting trenbologna sandwiches in chase of these crazily enticing rewards, I want, no, I *need* you to be aware of some nutrition fundamentals. Besides, a sports-themed student magazine release just doesn't feel right without at least one below-average article on nutrition and its effects on your body-building journey.

Ever since our ancestors famously cracked open a tub of Gold Standard whey protein over 50 million years ago and subsequently suckled nature's premium gift to humanity out of the small plastic spoon, we as a species have never once ceased to ask the hard-hitting questions. The most prevalent of which is "How much protein do we need to consume daily for optimal gains?". While the answer to this question has eluded our forefathers for millennia, we are finally able to reap the benefits of modern science. Or so you would think...

Let's further examine this inquiry from the perspective of John Doe. John has decided to turn his life around, he is sick and tired of being an average-looking schmuck. He surmises the most mature approach is to hide any insecurities with an exterior shell resembling a juiced-up Love

Island participant. Jealous of the person dating his crush? His parents disappointed in him? Caught in an endless cycle of procrastination and underperforming? Obviously, inversely correlated to how shredded you are! Whatever his motivations are, John knows he is a genius. He starts his meticulous research to answer our big question, finding himself on the distinguished research platform known as "YouTube".

On opening a video, he immediately winces in response to the sound of a 120-kilogram absolute unit of a human being screaming straight into the microphone. Right after he scrambles to turn down the volume, he is elated at the sight of his new role model and he can almost feel the testosterone oozing from the screen. He knows he has just struck a goldmine of information! Leading him further down the fitness rabbit

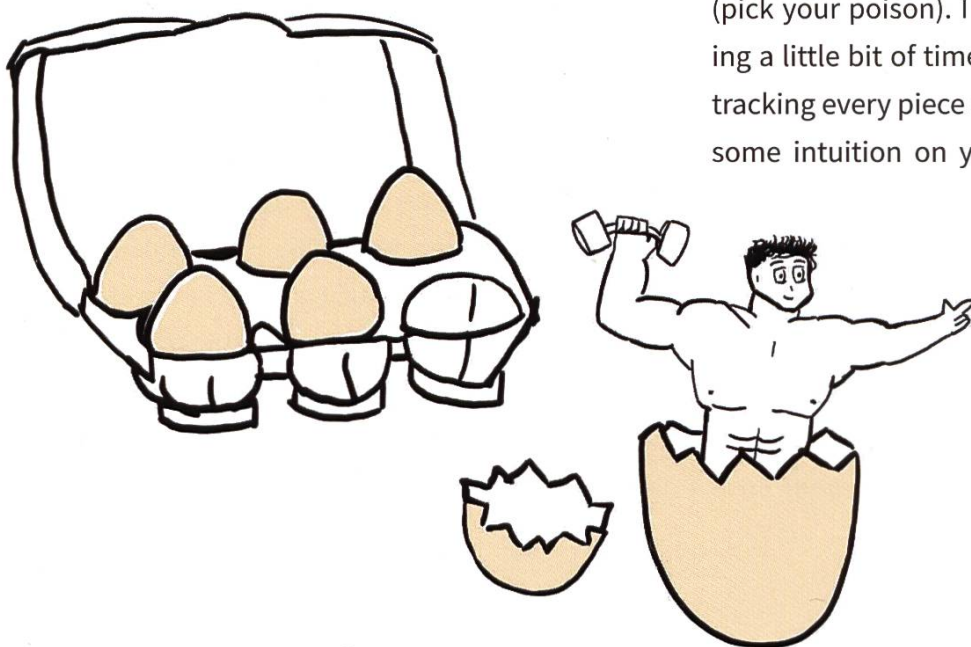


hole, he takes a sip of coffee and plunges himself into the cutting edge bro-science literature. Triumphant, after a full night of back-breakingly hard work, he has finally narrowed down the required amount of protein to be somewhere in the range of three and a half protein shakes per minute and 2 raw cow livers a day.

Even for intelligent people like John, it can be challenging to properly determine what his next course of action should be. There is still a huge variety in answers by industry experts, even to such a simple question. To make sure this article contains an ounce of useful information, I will describe what I have been following (after years of doing everything wrong). My guiding light has been the stunningly beautiful meta-study by Morton et al.¹. With data from 50 studies and around 2000 participants, they conclude that an intake beyond 1.6 g/kg showed absolutely no increase in gains to fat-free mass. But even this has to be taken with a grain of salt and should not be taken as a one-size-fits-all metric. Another study by Helms et al.² shows that protein

intake for an already trained athlete trying to reduce body fat should be between 2.3 - 3.1 g/kg of fat-free mass in the body (subtracting away body fat from the equation). Keep in mind this study has been conducted with athletes trying to reach low body fat percentages, so the protein intake is overinflated when applied to an average person in a caloric surplus. On top of all this, to make matters even worse, the world of protein consumption is not spared from rampant inequality; protein != protein. Ciuris et al.³ assign a digestibility rating to different foods based on the amino acid breakdown, showing that you may be forced to consume higher doses for the same result if on a purely plant-based diet.

Bringing it back to our main protagonist, let's assume John Doe is one of us average CS students weighing in at just shy of 35kg. A typical starting protein diet with a ratio of 1.5g/kg would suggest he consume around 55g of protein per day. This manifests itself as 450 grams of tofu, 2 chicken breasts, 9 eggs, or 100 000 grains of rice (pick your poison). I highly recommend spending a little bit of time, just one week is enough, tracking every piece of food you eat and gaining some intuition on your consumption. This al-



lows you to hand-wavingly follow basic principles without obsessing over food, because who the hell has time to count track macros forever? Once you have some experience under your belt, you can dive into the nitty-gritty of diet planning, adjusting your intake in small steps based on observed results!

have, or if you want to star in the next Terminator movie. Make sure you are in the general ballpark of said numbers to avoid getting scammed by overinflated numbers advertised by grifters selling supplements, while also not wasting the grueling hours in the gym with a terrible diet.



What is the takeaway? Your protein needs should be specific to you and only you. It depends on whether you are in a caloric surplus or deficit, whether you are a vegetarian or not, how large your wallet is, how much fat-free mass you

Illustrated by Ricardo

Citations

[1] Morton RW, Murphy KT, McKellar SR, Schoenfeld BJ, Henselmans M, Helms E, Aragon AA, Devries MC, Banfield L, Krieger JW, Phillips SM. A systematic review, meta-analysis and meta-regression of the effect of protein supplementation on resistance training-induced gains in muscle mass and strength in healthy adults. *Br J Sports Med*. 2018 Mar;52(6):376-384. doi: 10.1136/bjsports-2017-097608. Epub 2017 Jul 11. Erratum in: *Br J Sports Med*. 2020 Oct;54(19):e7. PMID: 28698222; PMCID: PMC5867436.

[2] Helms ER, Zinn C, Rowlands DS, Brown SR. A systematic review of dietary protein during caloric restriction in resistance trained lean athletes: a case for higher intakes. *Int J Sport Nutr Exerc Metab*. 2014 Apr;24(2):127-38. doi: 10.1123/ijsnem.2013-0054. Epub 2013 Oct 2. PMID: 24092765.

[3] Ciuris C, Lynch HM, Wharton C, Johnston CS. A Comparison of Dietary Protein Digestibility, Based on DIAAS Scoring, in Vegetarian and Non-Vegetarian Athletes. *Nutrients*. 2019 Dec 10;11(12):3016. doi: 10.3390/nu11123016. PMID: 31835510; PMCID: PMC6950041.

Absurd Sports Around the World

JOHAN STETTLER – FOUND A LOT OF NEW ITEMS FOR HIS BUCKET LIST

We all know this rule: If it exists, there is porn of it then somebody out there has probably turned it into a sport. Here, I present to you a list of the most absurd sports that I have found on the internet. Yes, of course you can watch YouTube videos on your own instead of reading this article, but if you're already here, you might as well continue reading. I only included sports on this list where humans are in danger at their own risk. This excludes any sport where animals are included. Maybe you'll find a new hobby!

One of the easiest ways to become the best country in a sport is to be the sole country practicing that sport. Switzerland has a few of these sports, but the weirdest one, in my opinion, is **Hornussen**¹. It is a game similar to baseball: One team tries to hit an egg-shaped plastic thing, called the Hornuss, as far as possible into a field. The fishing-rod-like tube, with its wooden piece head gliding on a rail, is used as a bat, which leads to the unique whirling batting technique Hornussen is most famous for. The other team tries to stop the Hornuss by throwing wooden pizza shovels in the air and stopping the projectile. It is the best excuse for the farmers to be drinking and calling it fitness.



While the Swiss people are busy yeeting some plastic around, other countries have found other stuff that's seemingly equally suitable. The Scots throw tree trunks², the Finnish toss their rubber boots around³, and some people even throw their phones⁴, just to compare distances! You can basically grab any object and claim the world record of throwing it the furthest.



Back to Switzerland: Some people here were such big fans of **Adiletten** (Adidas slippers), they organized an entire yearly Olympics based on them.⁵ You run in slippers, you use them as ping pong rackets, there are weird group skiing races, and, what a surprise, you compete in a “throw your Adiletten the furthest” contest.



Then we have the Brits. It is the country that brought us two very well-known sports, football and cricket. But here I have a less familiar sport for you: Every year at Cooper's Hill during spring break, somebody gets crowned the Queen or King of Cheese, if this person is the first to catch the cheese wheel in a **Battle-Royale-style downhill race**.⁶



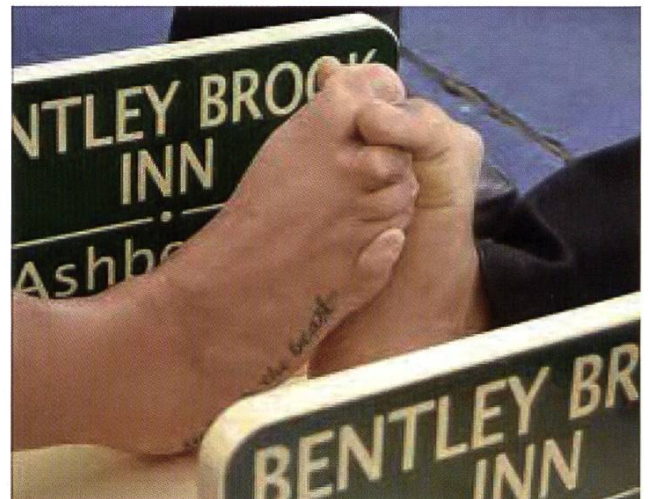
If you prefer a sport with your significant other, then you should visit Finland in summer, and participate in the **Wife Carrying World Championship**.⁷ You don't even need to be married to participate. It is a simple obstacle race where you need to carry your “wife”. If it weren't for this sport, scientists would not have figured out the most efficient and creative way to carry another person around.



Take your lance, take your horse and get ready for jousting! Excuse me?!? I said we are not harming animals in this article. So, okay. Take your lance, some rowers, a floating vessel and prepare for **water jousting**⁸. This is an actual thing done in France.



If you don't want to come up with something entirely new or you're just not the most creative person, then simply take **any existing sport and add something to it**. Football, but on a bicycle; hockey, but on unicycles; Arm wrestling, but with your toe; football, in mud; volleyball, in snow; golf, but with frisbees or with fishing rods; rugby, but with a broom between your legs and you call it quidditch; hockey or rugby, but underwater — the list goes on and on.





My personal favorite: **Extreme ironing**. You just come up with a crazy place or situation where you need to iron a piece of clothing⁹.



Sources:

[1] <https://www.myswitzerland.com/en-ch/planning/about-switzerland/custom-and-tradition/hornussen-where-the-nouss-flies-from-the-ramp-and-into-the-playing-field/>

[2] <https://www.scotland.org/events/highland-games/highland-games-traditions>

[3] <https://www.dw.com/de/flieg-stiefelchen-flieg/a-1220247>

[4] https://www.kleinezeitung.at/sport/5292101/6758-Meter_Oesterreicherin-stellt-Weltrekord-im-HandyWeitwurf-auf

[5] https://www.tvwislig.ch/?page_id=2723

[6] <https://www.visitgloucester.co.uk/things-to-do/history-and-heritage/cheese-rolling-in-gloucester>

[7] <https://radseason.com/event/wife-carrying-championship-sonkajarvi-finland/>

[8] <https://www.bbc.com/travel/article/20120820-worldwide-weird-water-jousting-in-south-ern-france>

[9] <https://einfachstars.info/blog/19271-extrem-buegeln-ist-eine-sport-art.html>

Robins Tastatursport

SCHMIDI - KANN BALD EINEN TASTATURZOO AUFMACHEN

Die Tastatur... Das Lieblingssportgerät eines jeden Möchtegern-Informatikers. Tastaturen können komplett unabhängig vom Bizepsumfang bedient werden, was sie zu einem äusserst beliebten Trainingsinstrument macht. Tastaturen diskriminieren nicht, sie buchstabieren nur. Aber nicht alle Keyboards sind aus dem gleichen Plastik gegossen! Also streckt eure Finger aus, entspannt eure Handgelenke, schaltet eure RGB-Beleuchtung ein und macht euch bereit für eine kurze Safari durch die faszinierende Welt der Tastaturen.

Tastaturanatomie

Als allererstes machen wir einen Exkurs zu den verschiedenen Grundbausteinen einer Tastatur:

Im Kern eines jeden Keyboards steckt ein PCB (Printed Circuit Board, Posaunenchoralbuch oder Panama City Beach). Dieses bestimmt oft die Art und Form des Geräts. PCBs gibt es in zahlreichen Ausführungen. Beispielsweise ohne Ziffernblock (TKL - Tenkeyless), nur mit 68 Tasten (60% Keyboard), Split Keyboards und viele mehr. Für die Masochisten unter uns existieren auch 30% PCBs, bei welchen man nur auf belanglose Tasten wie beispielsweise die Leertaste verzichten muss.

Als nächstes wird das PCB mit vielen Switches bestückt, welche den Mechanismus unter einer jeden Taste bilden. Switches bestimmen, wie sich das Drücken einer Taste anfühlt. Grundsätzlich unterscheidet man zwischen linearen (Cherry Red, Gateron Black, ...), taktilen (Cherry Brown, Romer-G, Boba 4U, ...) und clicky (Cherry Blue, Kalith Box White, ...) Switches.

Bei Keycaps unterscheidet man zwischen zwei verschiedenen Materialien - ABS und PBT.

ABS (Acrylnitril-Butadien-Styrol-Copolymer) Keycaps existieren eigentlich nur, um als schlechtes Beispiel zu dienen. Sie beginnen schon nach kurzer Zeit zu glänzen und fühlen sich schmierig an. Damit widerspiegeln sie die Körperhygiene von ABT-Keycap-Besitzern auf authentische Art und Weise.

PBT (Polybutylenterephthalat) Keycaps hingegen sind ABS in sämtlichen Belangen überlegen. Sie halten länger, fühlen sich besser an und sind teurer.

Weitere Bestandteile eines Keyboards sind Platten, Stabilizers, Cases, Foam, O-Rings, usw. Davon verstehen die meisten von uns aber sowieso nichts.





Praxiseinblicke mit Aussicht in die Zukunft



Sichere dir jetzt dein
IT-Praktikum bei BSI!



Welche Tastaturen gibt es überhaupt?

Rubberdome

Werfen wir doch mal einen Blick auf die Tastatur des Ottonormalverbrauchers. Mit seiner lausigen Schreibgeschwindigkeit von 30 Wörtern pro Minute hat er es nämlich nicht verdient, seine dreckigen Finger auf eine bessere, mechanische Tastatur zu legen. Solche Tastaturen haben meist Rubberdome-Switches verbaut. Sie sind so sehr im Bereich des Mittelmässigen einzuordnen, dass sie gar von Grossmüttern als "ausreichend, aber leicht schäbig" bezeichnet werden würden. Bei jedem Tastendruck denkt man sich, dass man vielleicht doch mehr Geld für seine Tastatur hätte ausgeben sollen.

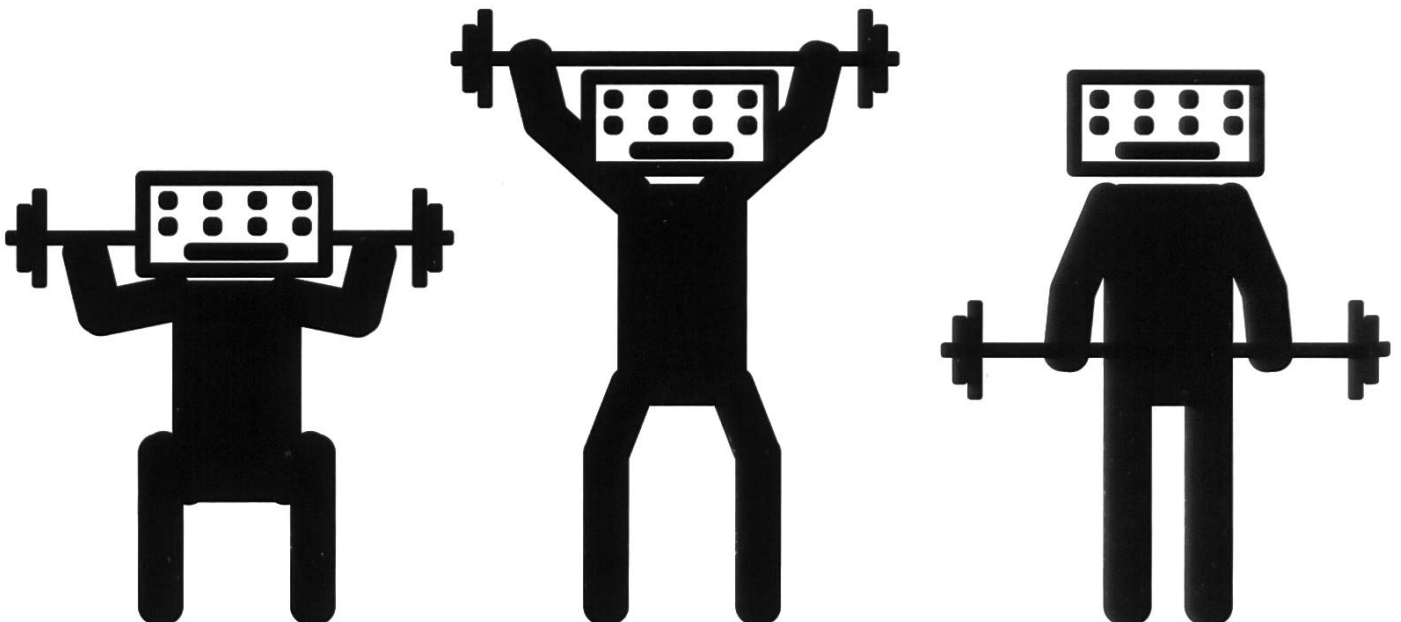
Gaming Tastatur

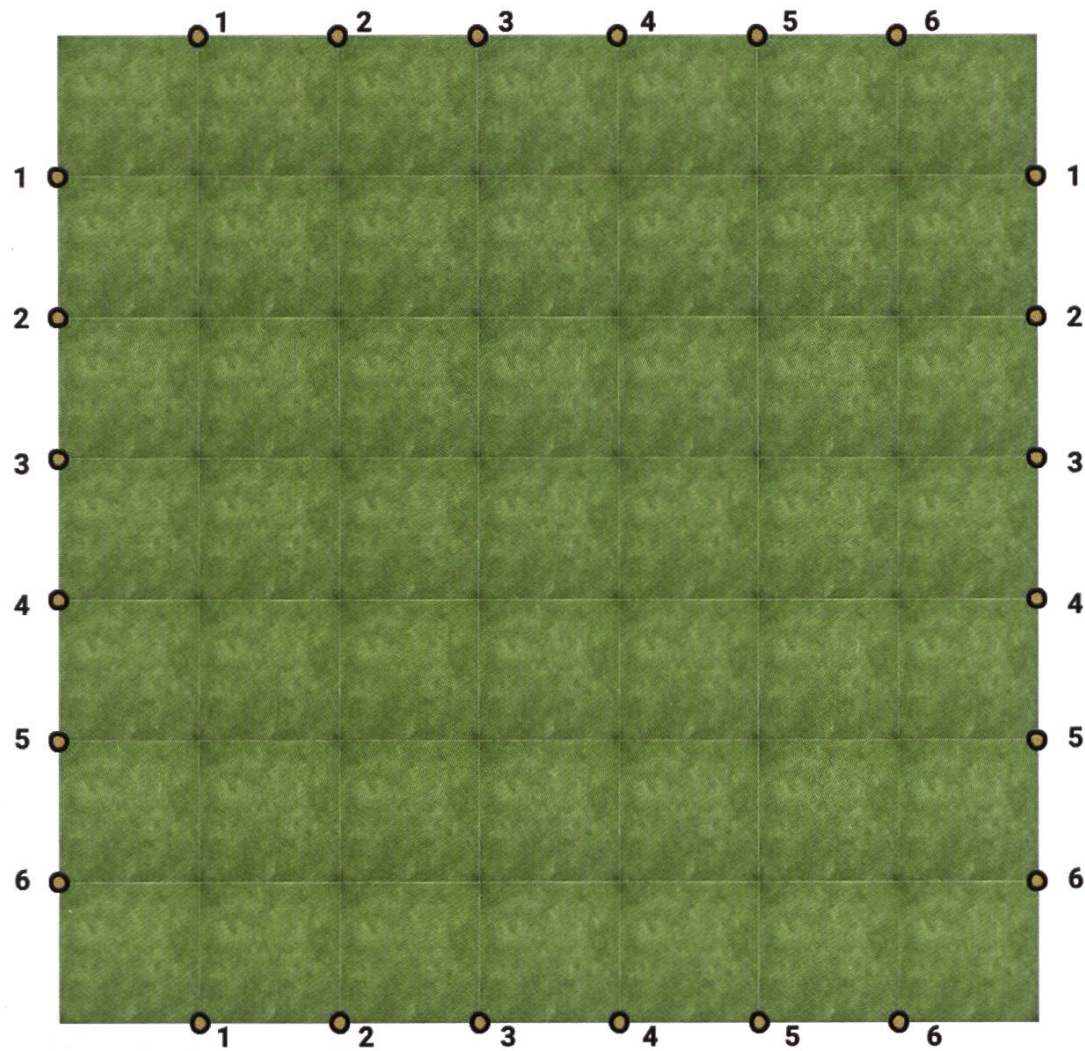
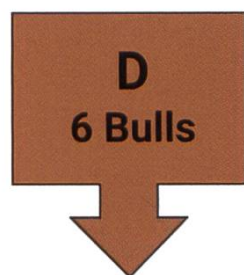
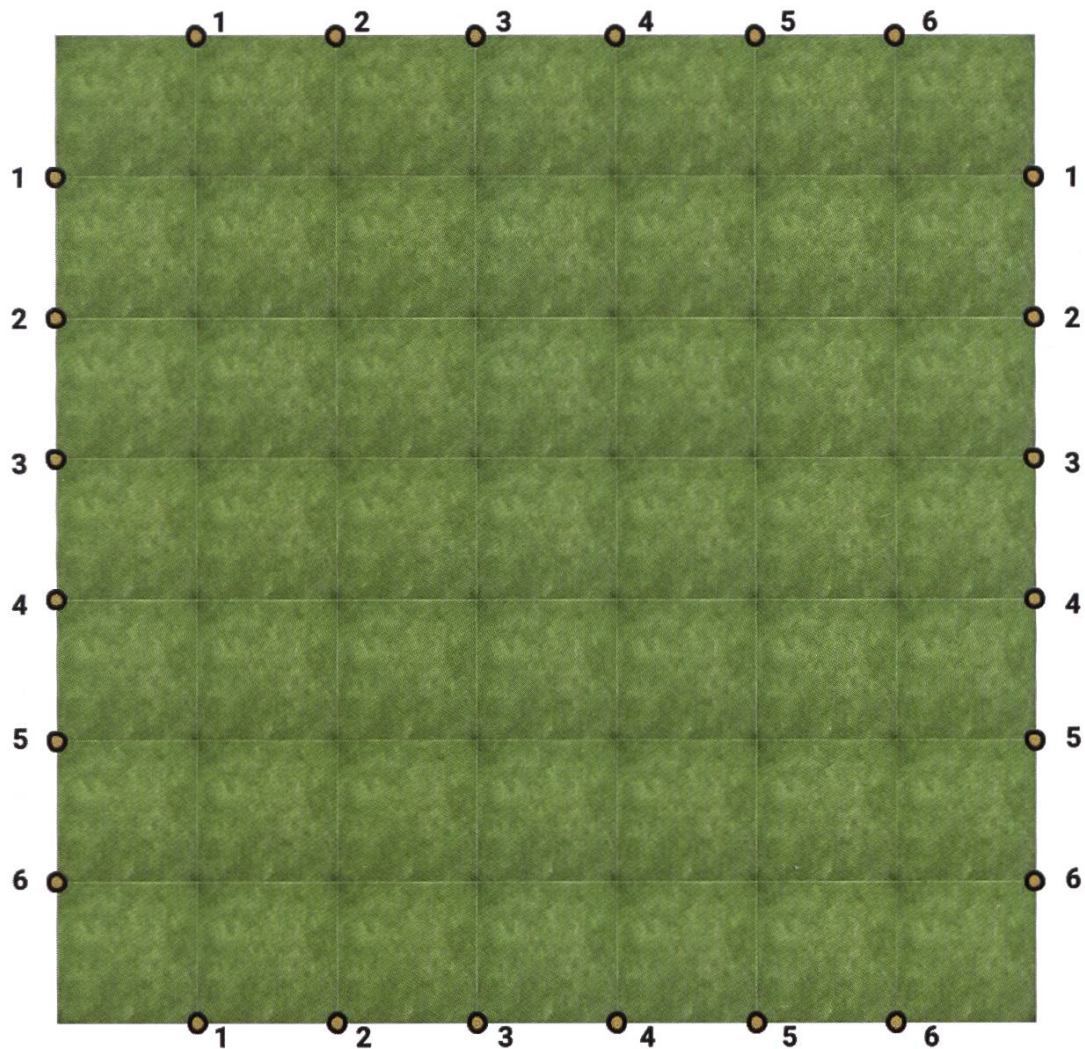
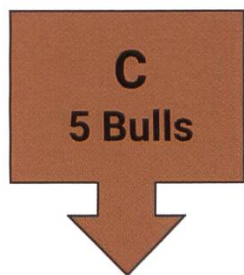
Als nächstes betrachten wir die Kategorie der Gaming-Tastaturen. Diese zeichnen sich grösstenteils durch ihren exzessiven Gebrauch von RGB-Lichtern aus. Gaming-Tastaturen sind mehrheitlich gigantische Fullsize Keyboards mit

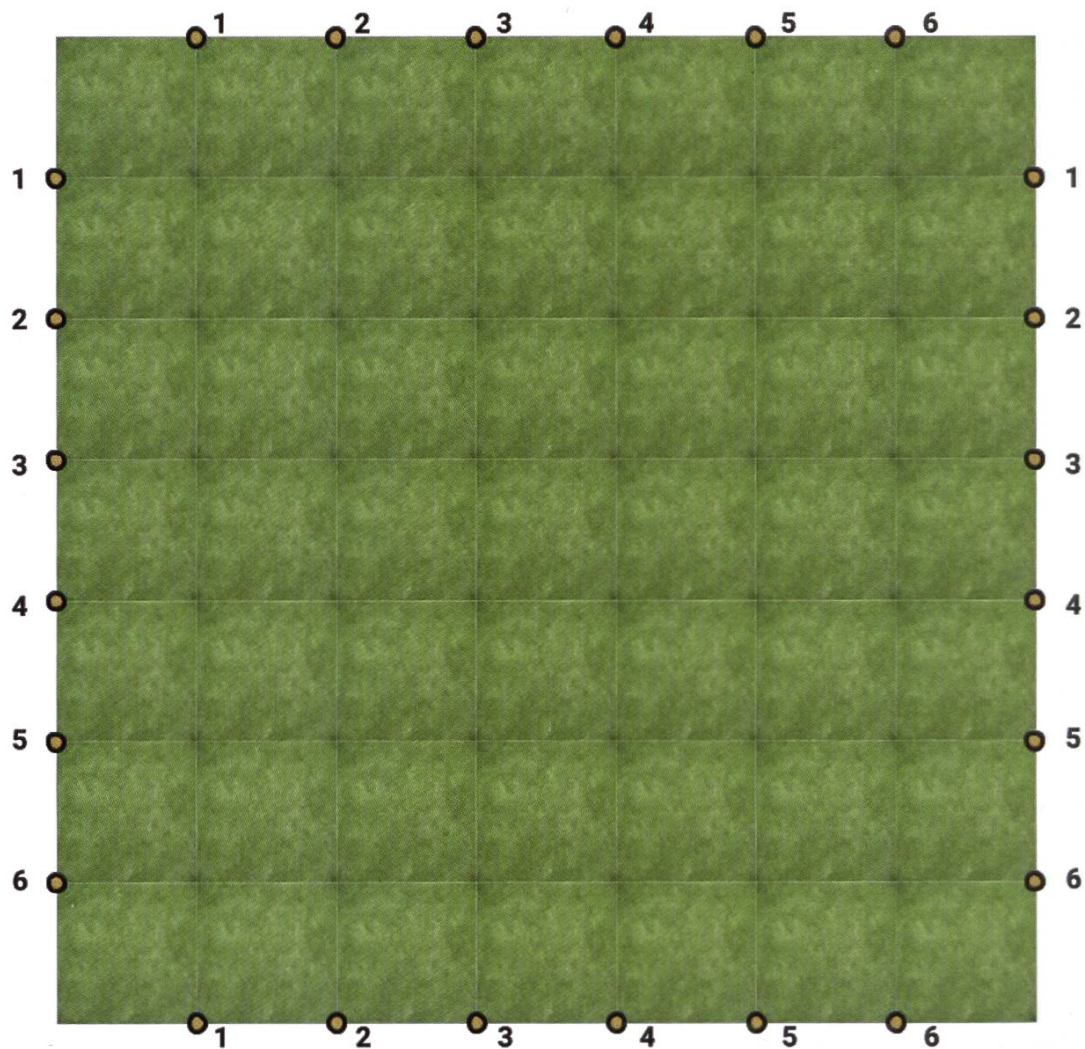
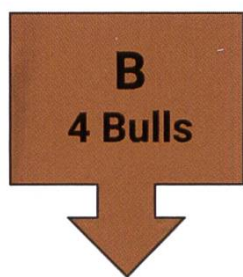
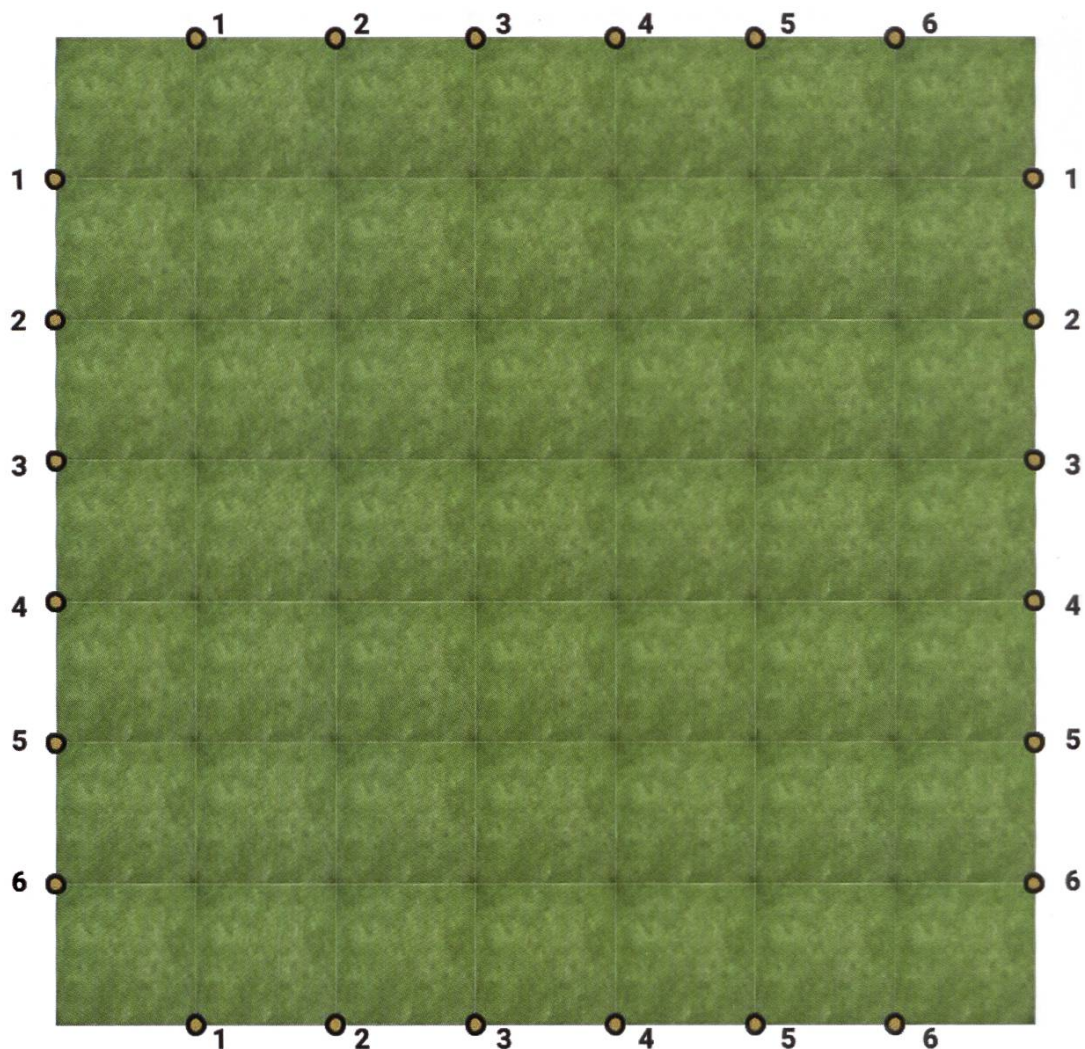
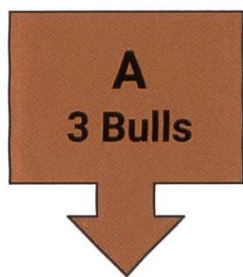
zusätzlichen Multimediatasten, ABS Keycaps, linearen Switches und Aftermarket Waifu-Handballenauflagen. Teurere Gaming-Tastaturen eignen sich grundsätzlich auch für den alltäglichen Gebrauch und für längere Schreibsessionen. Sie sind aber alles andere als diskret.

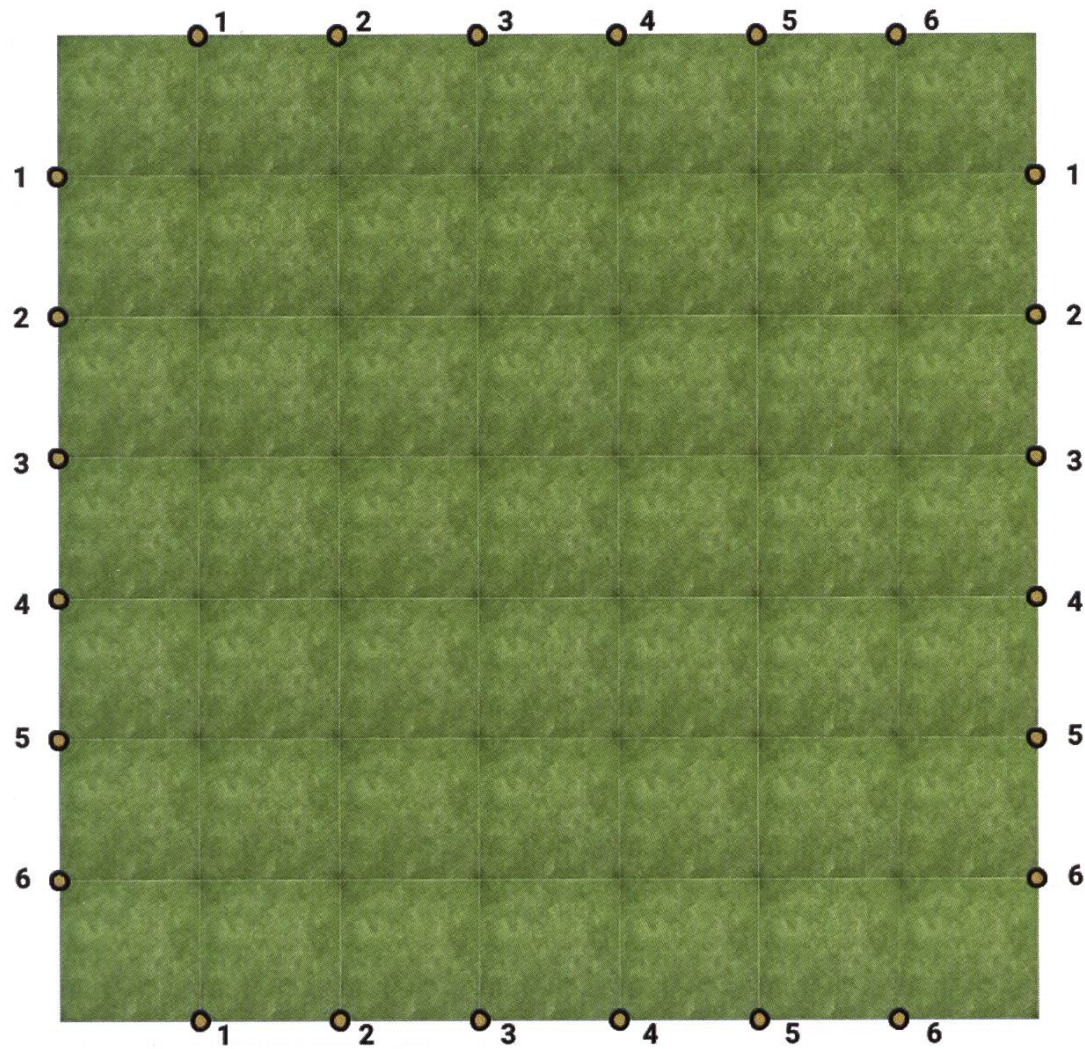
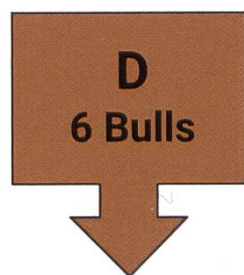
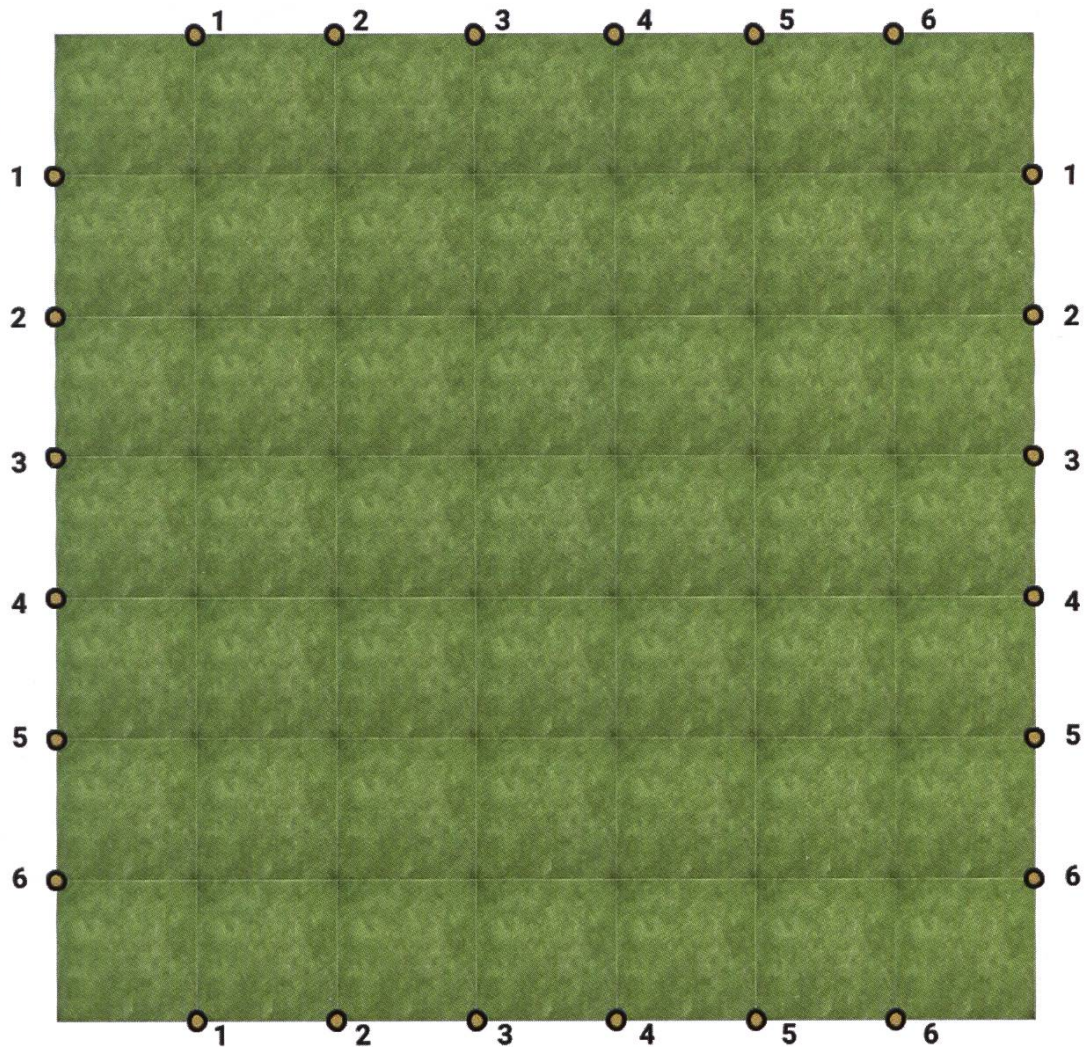
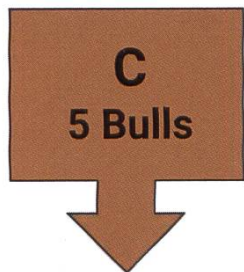
Brauchbare Bürotastaturen

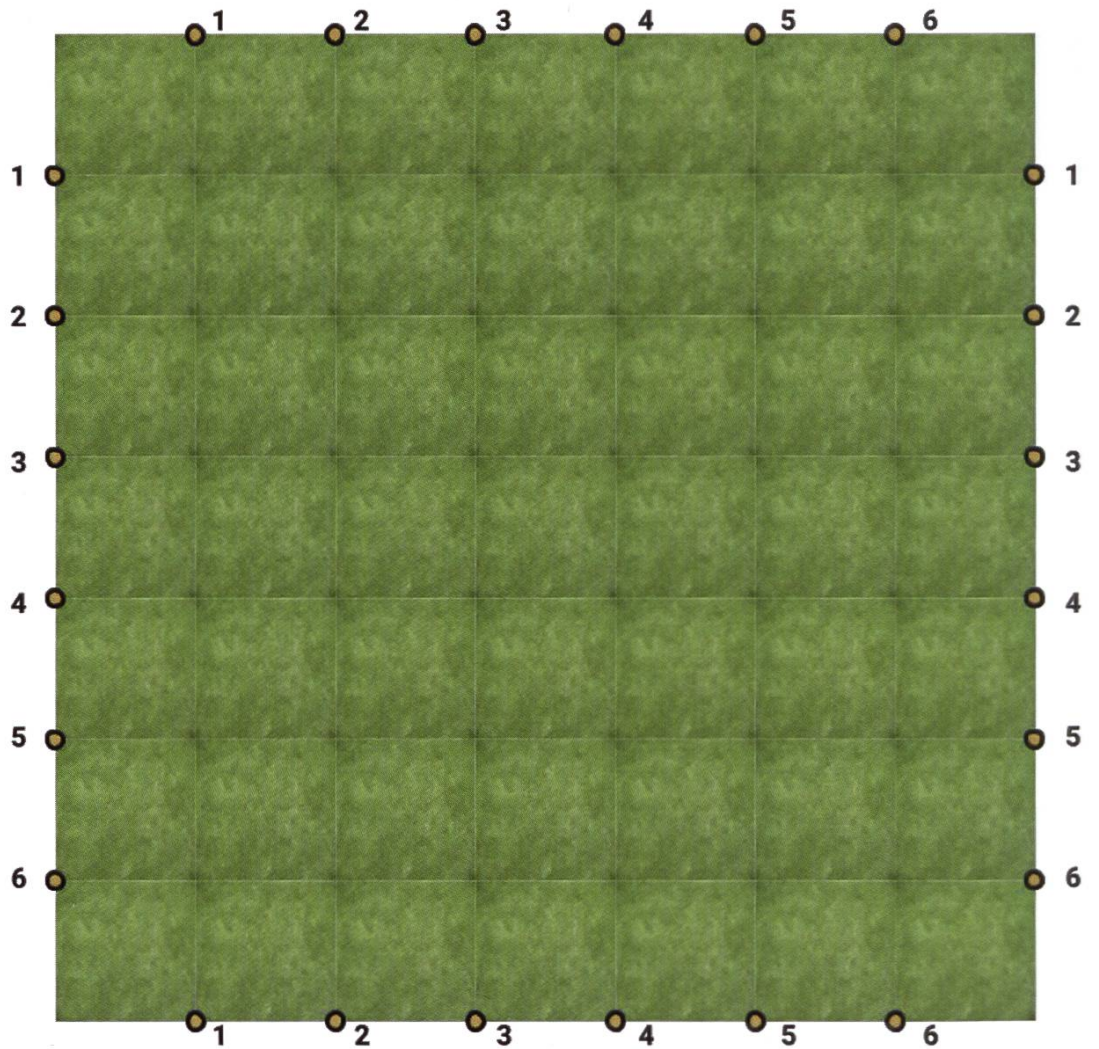
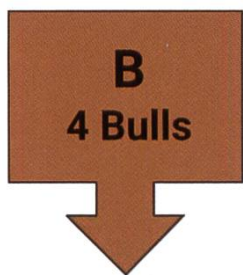
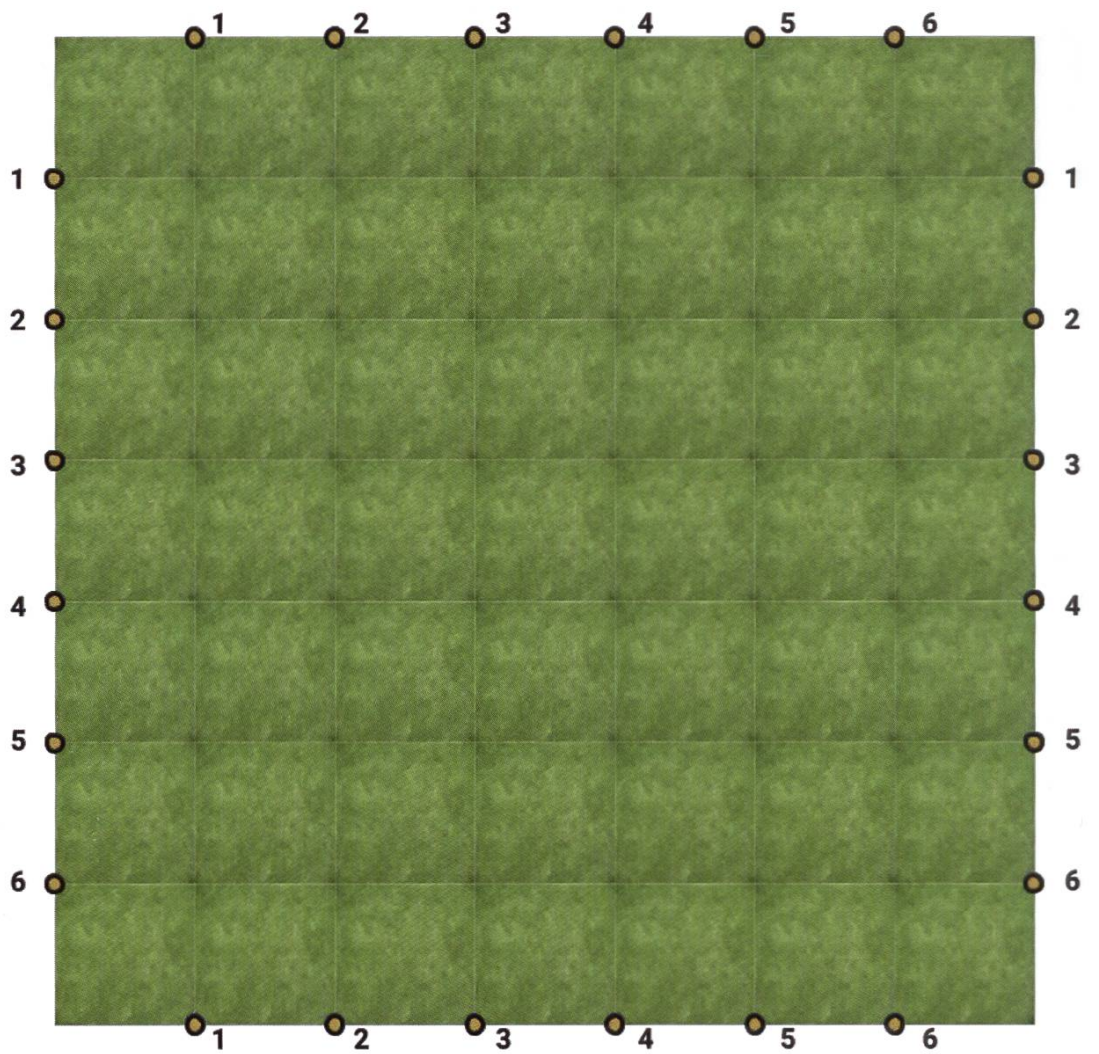
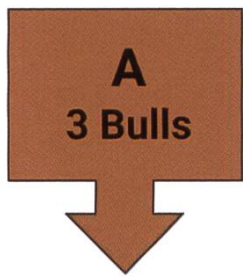
Wer eine gute mechanische Tastatur fürs Büro sucht, der hat Glück. In dieser Kategorie stehen viele 60-75% Tastaturen im mittleren Preissegment zur Verfügung. Der kleinere Formfaktor erlaubt es, den Schreibtisch anderweitig mit belanglosem Kram zuzumüllen. Mechanische Bürotastaturen sind zudem mit clicky oder taktilen Switches versehen. Das bedeutet, dass bereits nach kurzem Gebrauch die ganze Abteilung wissen wird, dass du jetzt eine mechanische Tastatur besitzt.

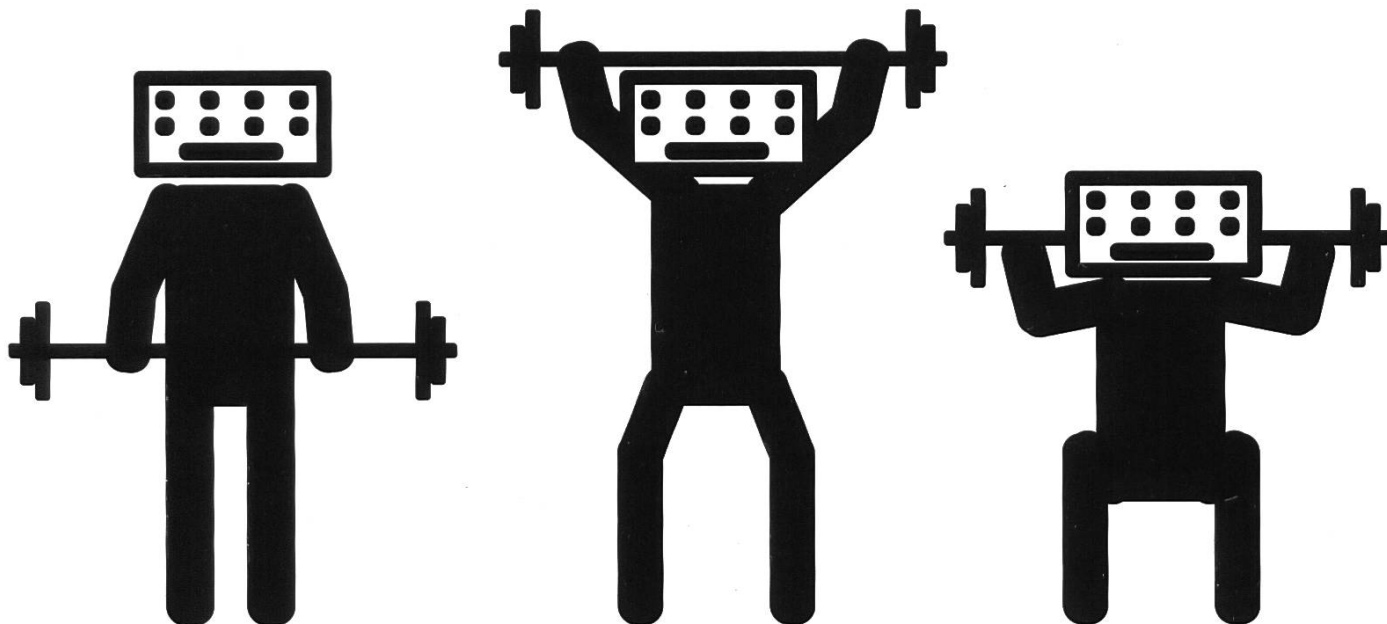












Split-Keyboards

Wer seine Tastatur tagein tagaus zum Schreiben verwendet, der sollte zu einem Split-Keyboard greifen. Diese haben im Gegensatz zu herkömmlichen Tastaturen drei wichtige Vorteile. Die ergonomische Form sorgt über mehrere Stunden hinweg für bequemes Schreibgefühl. Des Weiteren sorgt das ungewöhnliche Layout dafür, dass die Tastatur von deinen Kollegen als Alien eingestuft und daher in Ruhe gelassen wird. Zu guter Letzt wird nicht nur die Tastatur, sondern auch dessen Besitzer als Alien klassifiziert. Niemand wird sich jetzt noch mit dir unterhalten wollen und du kannst endlich ungestört arbeiten.

DIY

Die absolute Königsklasse der mechanischen Tastaturen sind ohne Zweifel die DIY-Keyboards. Geräte dieser Kategorie sind selten in freier Wildbahn anzutreffen, da ihre Besitzer/Schöpfer die Öffentlichkeit meiden wie die Pest. Diese Kreaturen verlassen ihren Keller nur regelmäßig, um am Briefkasten ihre AliExpress-Lieferung entgegenzunehmen. Am Weihnachtessen mit der Familie werden sie an den Kindertisch gesetzt. Untereinander kommunizieren sie ausschliesslich via Reddit Threads und verwenden viele Akronyme. Du willst auch dazugehören? Wirklich? Ein eigenes DIY-Keyboard zu bauen erfordert viel Zeit, Geld und eine Prise Autismus. Dafür wirst du stolzer Besitzer einer wunderschönen Tastatur, die niemand ausser dir toll findet. Doch sei gewarnt - Mit dem Bau einer eigenen Tastatur gibst du 30% deiner Seele ab, unterschreibst offiziell deinen Austritt aus der Gesellschaft und bekommst deine Jungfräulichkeit zurück. Gott stehe dir bei.



Score

Number of Bulls encapsulated on field
(Only the Bulls alone in one area count)

A: $a1 =$

B: $b1 =$

C: $c1 =$

D: $d1 =$

Number of not used posts on field
(is 0 if not all Bulls are enclosed alone)

A: $a2 =$

B: $b2 =$

C: $c2 =$

D: $d2 =$

Number of Lives left

$L =$

Total Score:

$$3 * a1 + a2 + 4 * b1 + b2 + 5 * c1 + c2 + 6 * d1 + d2 + 3 * L =$$

Raging Bulls: a Roll and Write Game – Part 1

JOHAN STETTLER – OBSESSED WITH BOARD GAMES

May I introduce you to roll and write games? This is a board game genre where players choose their actions based on the dice result they roll and mark something on a sheet. These games are easy to pick up and quick to play. I have selected a few which I will introduce to you over the course of every VISIONEN issue this year. You can immediately play them! All you need is a copy of the game (printed in this issue), a pen and some dice (or random.org simulating dice). If you want more roll and write games and cannot wait for the next issue, then just google “roll and write games”. You’ll find thousands of these, and a lot of them are free. Challenge your friends and see who gets the better score!

Game Info

- Name of the game: Raging Bulls¹
- Number of players: 1
- Age: 8+ (for unknown reasons)
- Type of Game: roll and write, strategy
- Expected game length: 20 - 30 min
- Designers: Nicolas Guibert, Mark Tuck
- Game Rating: 6.6 / 10 [1]

You need

- A game page (take the one from this VISIONEN issue ("the poster", page 30) or print one out online)
- A pen
- A ruler (something to draw straight lines)
- 3 dices (or roll one die 3 times, or go on random.org)

Setup

- In the top-left corner of each field, you find a number. This number represents the number of bulls chilling on the field.
- For each bull, roll two dice, indicating the column and row of the grid, and place a dot on the corresponding position.
- Re-roll if two bulls land on the same position.

Game Objective

Build fences (by connecting the dots on the sides of the field) such that each bull is enclosed and completely alone in its area. Be resourceful, since no post can be connected more than 3 times.

How to play (on page 34-35)



[1] <https://boardgamegeek.com/board-game/228570/raging-bulls>

How to Play

```
// Returns the number of fences connected to the post p
numFence(p):
    return number of fences (lines) connected to p

// Returns any post chosen by the player with the number x
post(x, n):
    p = choose any post of any side with the number x and numFence(p) < n
    if p exists
        return p
    else
        return null

// Connect the posts p and q with a straight line
connect(p, q):
    if p = null or q = null or the line from p to q goes through a bull
        do not draw a line
        return true
    else
        draw straight line from p to q
        return false

// Main function
Main:
    lives = 3
    Fields = {A, B, C, D}

    for each f in Fields do
        repeat until all bulls are enclosed
```

```
if you want, skip // continue on the next field without finishing this one
x, y, z = result of dice roll // roll all three dice
```

```
if x == y and y == z // 3 times the same value
    p = post(x, 3)
    q = p
    while p != null and p == q
        q = post(x, 3)
    if connect(p, q)
        lives = lives - 1
```

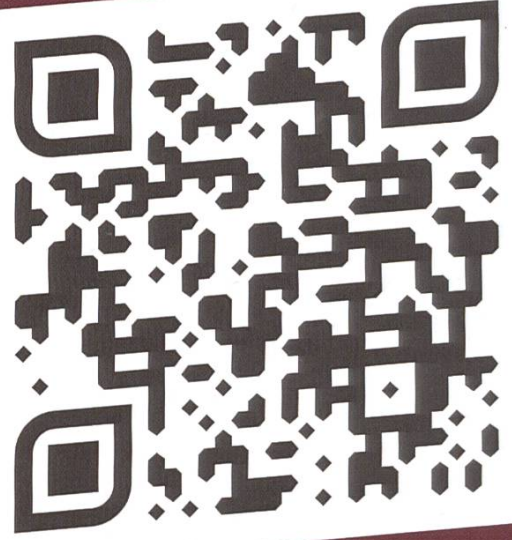
```
if x == y and y != z // 2 times the same value
    p = post(x, 2)
    q = p
    while p != null and p == q
        q = post(x, 2)
    r = post(z, 1)
    temp = connect(p, q) xor connect(p, r) xor connect (q, r) // connect only one pair
    if temp
        lives = lives - 1
```

```
if x != y and y != z and x != z // 3 different values
    p = post(x, 1)
    q = post(y, 1)
    r = post(z, 1)
    temp = connect(p, q) xor connect(p, r) xor connect (q, r) // connect only one pair
    if temp
        lives = lives - 1
```

```
if lives <= 0
    game over
```


MEET THE COMMITTEES!

VIS offers so much more than just free coffee, parties and exam collections. We also do university politics, take care of a cutting-edge IT infrastructure and many other things. Everything is organised by students on a completely voluntary basis along side their studies. Get to know our association, learn about the different committees and find out what is going on behind the scenes!



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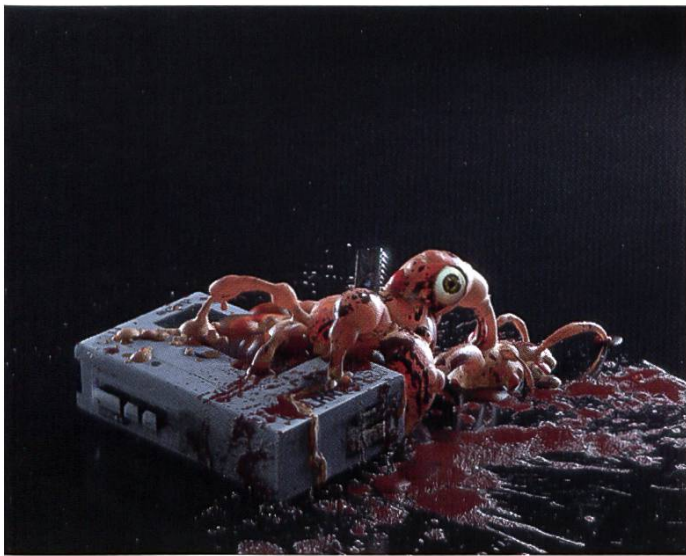
Do you want to organize fun events, design pretty posters, write amusing articles for our monthly magazine, plan the largest academic IT recruiting fair in Switzerland or develop new applications that can improve the lives of your fellow students? You don't need any special skills or prior knowledge. In fact, quite the opposite is true: Here, you can learn useful things that are not taught in any other lecture!

sudo make beat

GIULIA S/C - FOR ONCE, NOT SHARING SUPER FAST MUSIC

EPROM - FleshNet [2020, DeadBeats]

![Cover for FleshNet, artwork created by EPROM himself. Can you spot the chip?]

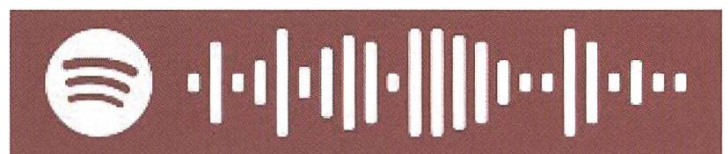


Erasable programmable read-only memory is a chip commonly found in old electronics. Each chip has a small window on top, which is used for... uhm, wrong EPROM. Let's try this again.

EPROM is an audiovisual artist from Portland, Oregon who's not only known for his abstract beats, but also intriguing 3D artwork, which often depicts dark or post-apocalyptic motives. Both his music and visual art convey a sense of technically advanced but doomed and fallen-apart worlds. It's hard to pin down what exact genre EPROM falls into, however Leftfield Bass* comes close to describing it. He also frequently works together with other artists, such as Flume or Alix Perez, with the latter forming the duo SHADES.

The single *FleshNet* encapsulates a looming sensation of doom with robotic entities marching through the world. Mechanical and machinesque-sounding basses paint an image of moving motors and pistons. Slow, distant shakers leading up to the main drum beat further deliver the impression of slowly approaching machines, complimented through 808s emphasising the impact of the machines' weight. Cold and metallic sounds with a tasteful pinch of dissonance help to paint the darkness. Finally, the track ends in a long, deep pad sound, leaving the listener with the impression of reaching a game-over screen. Even when the track is kept at a very bare-bones level, it still manages to create this atmosphere of a dystopian age of machines.

* Leftfield Bass is a wide range of unusual and weird bass music. It's an experimental form of deep dubstep and it is characterised by an atmospheric down tempo beat laced with abstract bass and synth articulations.



<https://twitter.com/eprombeat>

<https://eprom.bandcamp.com/track/fleshnet>



Like Antman, But Different

FIONA – HAS NOT SEEN ANTMAN, BUT NEEDED A CATCHY TITLE

Do you need a new hobby? Something to not be the ETH student who never talks about anything else than ETH? Or something to make your Tinder profile more snowflakey-unique? No money, no free space at your place, no time? If you answered at least some of these questions with “yes”, then ants are the perfect pet for you.

Or something to make your Tinder profile more snowflakey-unique? No money, no free space at your place, no time? If you answered at least some of these questions with “yes”, then ants are the perfect pet for you.

Yes, ants. Just watch *The Ant Bully* or any jungle documentary and you’ll see that these little insects are very fascinating. And to keep them, you only need like a 20x20x15cm plastic box. You can make it yourself. DIY, baby! You can even catch your queen ant yourself, go and ketchum all.¹

Of course, there are online shops for ants. Ants need proteins and carbs, so just give them some dead insects and some honey or sugar. You can easily leave them alone for 2 weeks if you give them enough food and water beforehand. Maybe, every two weeks you should clean the corner where they put their garbage. There’s more on how to keep them on youtube (where else?). This is also just where I got my knowledge from... (where else?)

Some further premium information about ants: Unlike bees, if the queen ant dies or is taken away, the colony dies. They cannot just feed a larva into a new queen. In summer, some new queens and masculine ants, both with wings, hatch and fly out. The new queens are inseminated by the masculine ants, who die right after doing their duty – because besides sex, men are useless (I’m talking about the ant world, of course). The new queens then lose their wings and look for a place to start their new colony.²



[1] No, you can’t just break into an anthill and steal the queen, that’s illegal. You need to find a fresh queen that’s just starting a new colony.

[2] These are the queens you need to catch. Do some research on when and where to find them. Some people even earn money by catching new queens.

YouTube Rewind 2022

C — TURNED OFF HIS ANALYTICS SO HE DOESN'T KNOW HOW MUCH TIME HE WASTED SPENT ON THAT PLATFORM

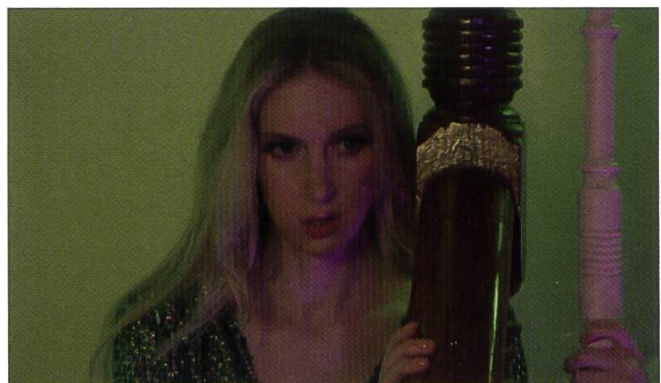
“AWW, THAT’S HOT, THAT’S HOT!”¹ — Let’s rewind to 2018, the pre-Covid era. A time where people only socially distanced in train compartments and surgical masks were a thing only seen in hospitals. In that year, on the 6th of December, YouTube released the video titled YouTube Rewind 2018, having no idea about the outrage it would cause. Due to the negative response, they discontinued the format. However, other creators made their own versions of it and I thought this would be an opportunity to do so too. I will mainly focus on video essays, since they are the S-tier format on YouTube. Some of the videos are very long, but I highly encourage you not to let that scare you off. If you compare it to the amount of hours you wasted watching some stupid show on Netflix, it’s negligible.

So, here goes my personal YouTube Rewind:



Vaccines: A Measured Response by hbomborguy
Length: 1:44:10

In this masterpiece, Harry Brewis conducts an analysis of the modern anti-vaxxer movement. He looks at the retracted paper by the disgraced doctor who sparked the movement and the development from there. Then he looks at the influence it might have had on important current media figures such as Bill Maher.



Envy by ContraPoints
Length: 1:48:15

Have you ever asked yourself why you identified with the joyful SpongeBob as a kid and getting older, you realize that you slowly turn into the envious Squidward? ContraPoints explores the subject of envy, looks at case studies in our current society, and takes a deep dive into the human psyche. The great thing about ContraPoints is that she’s not only a great storyteller, but also creates an epic atmosphere with astonishing visuals and breathtaking sound design.





Veritasium: A Story of YouTube Propaganda

by Tom Nicholas

Length: 51:35

We all know how influencer marketing is used to shape public opinion. However, it isn't only limited to influencers. Companies are increasingly trying to share their talking points framed as educational content. In this video, Tom Nicholas talks about that one time where the otherwise great channel Veritasium ended up platforming driverless cars in an uncritical way.



Dubai Is A Parody Of The 21st Century

by Adam Something

Length: 12:48

Ever heard of Dubai being a wonderful tourist destination? Me neither, all of my friends that have been there have come to the same damning verdict. Adam Something takes a closer look at why this futuristic-looking city combines all the worst ideas of city planning and informs you about the dark secrets behind it.

Tracing the Roots of Pop Culture Transphobia

by Lindsey Ellis

Length: 58:56

In recent years, public figures such as J. K. Rowling have voiced opinions that were perceived as transphobic. If you don't really understand why and want to understand their perspective, this video by Lindsey Ellis is a must-watch. She explores the misconceptions in J. K.'s opinions and traces some of them back to movies and other pieces of pop culture.



Jamie Oliver's War on Nuggets by Folding Ideas
Length: 17:33

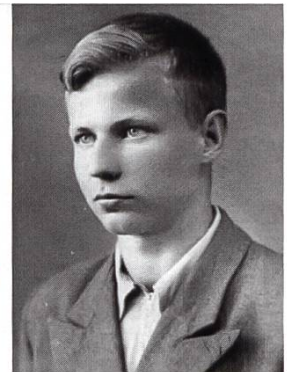
You might know the video by Jamie Oliver where he creates chicken nuggets by putting some meat and bones into a blender and asks kids if they would still eat them. He is horrified that most of them still would. Folding Ideas explores why the point Jamie Oliver is making isn't really compelling and you shouldn't feel bad for craving your tasty nuggies.



The Bizarre World of Fake Psychics, Faith Healers, and Mediums by Super Eyepatch Wolf
Length: 47:09

As you might have guessed, none of the aforementioned groups were ever able to prove that their powers actually exist. However, there is a broad group of people who still believe in the supernatural. Super Eyepatch Wolf explains why even educated, smart people fall for them and discusses the broader societal problem of their prominence.

$$\begin{array}{r} 21 \cdot 13 \\ \hline (2+1) \cdot (1+3) \\ = 2+7+3 \\ \hline 273 \end{array}$$



How Karatsuba's algorithm gave us new ways to multiply by Nemean
Length: 18:47

The mathematician Anatoly Karatsuba managed in 1960 to reduce the runtime of multiplication from $O(n^2)$ to $O(n^{1.6})$. Nemean revisits this leap and lays out how the algorithm works. He manages to break down the rather complicated algorithm so that even people with little prior interaction with computer science or maths are able to understand it.



[1] Will Smith in YouTube Rewind 2018, the second-worst of his films after *The Pursuit of Happyness*

Innovation Award and second place at the Not-a-Boring-Competition

SWISSLOOP TUNNELING - A STUDENT-LED ASSOCIATION BASED AT ETH CONDUCTING RESEARCH ON TUNNELING SOLUTIONS.

During the finals of the Not-a-Boring-Competition in September 2021, Swissloop Tunneling won the Innovation & Design Award and placed second in the overall challenge thanks to its 7 meters long and 2.5 tons heavy tunnel boring machine, Groundhog Alpha. In this article, you can read how Ole Müller, an Engineering Master's student in his last semester at ETH Zürich, experienced the competition, as well as other interesting facts about the team's outstanding success.

Ole sums it up: *"It was great to actually go somewhere into the field and test the machine. We learned so much about our systems by going to the desert in Las Vegas."*

In summer 2020, Elon Musk announced The Boring Company's first international tunneling competition. In order to build the Hyperloop concept, faster and more cost-effective infrastructure development is required, especially in tunnel construction. This is the only way it would be possible to build large Hyperloop networks in the future. Hyperloop is a futuristic form of transportation for both people and goods, consisting of a sleek pod-like capsule that, in its most advanced form, is magnetically levitating inside vacuum tubes, accelerating across the country at high speeds. The tech-

nology is also more sustainable and has a target speed of over 1000 km/h (600mph), which is faster than high-speed trains and even most commercial passenger airplanes.

In February 2021, it was announced that over 400 student teams applied for Elon Musk's Not-a-Boring-Competition. Of those, 12 finalists, the so-called Digging Dozen, were invited to Las Vegas to compete against each other with the goal of building a 30-meter tunnel with a diameter of around 0.5 meters as fast as possible. Despite the ongoing pandemic, Swissloop Tunneling was able to enter the USA in time with a National Interest Exception (NIE) and took part in the finals. The team managed to cope with the adverse conditions of over 40°C and successfully rebuilt the infrastructure on site after a sandstorm.

Ole documented how he experienced the heat and the sandstorm in his video diary on YouTube. Even in the toughest moments, he did not lose his sense of humor: "My laptop is so hot, I'm sad that I didn't bring any eggs, because I could probably scramble some on it at the moment."



After the exhausting week, the team's excitement about the second place and the coveted Design and Innovation award was even stronger. The intense team year and the week in Las Vegas will probably be remembered by all team members for a lifetime. The risk of betting on an innovative and possibly revolutionary tunneling technology seems to have paid off. The unique and innovative liner system makes it possible to fabricate a tunnel tube in situ using a 3D-printing mechanism for the first time ever.

During the process, a special polymer mixture is applied to the glasfiber-covered tunnel wall. The tunneling mechanism's discontinuous hydraulic grippers rest against the newly created tunnel tube after the polymer is applied, enabling the tunnel boring machine to move forward in

a continuous fashion. Additionally to liner and propulsion systems, which are located in the rear of the machine, two additional subsystems compose the front part: the so-called soil erosion system and the steering mechanism. The cutting head allows the removal from soil and chipping of stones from the tunnel's face thanks to a cutting wheel and the custom-designed cone crusher.

In order to adjust the machine's attitude and perform curves during the digging phase, an innovative custom-made hydraulic hexapod system is used, allowing the cutting head to move in the three-dimensional space with six degrees of freedom. To account for emergency situations, like getting stuck in harder soil, we could activate a so-called jackhammering mode, which allows the front of the machine to vibrate with frequencies as high as 20 Hz, and dislocate the blocking material in the tunnel's face.

Swissloop Tunneling's vision is to make tunneling for the Hyperloop concept faster, cheaper and more efficient. This summer, Swissloop Tunneling will demonstrate the machine's abilities in Switzerland, at the Swiss Tunneling Event, and then travel to the United Kingdom to participate in the European Tunneling Week (ETW). ETW was created by members of the four European teams: Warwick Boring, TUM Boring, Dirt Torpedo, DHBW Mosbach and Swissloop Tunneling.





Ole: "All in all, I am really happy that I was able to attend the competition and my supervisor gave me the time off from my master thesis to attend the really not-boring competition."

I had the motivation to document every day as a short video, so feel free to have a look at what we had to endure (YouTube: @Ministry of good ideas). Events like this are what brings the people together to act as one team and it was really worth every second!

This year we want to focus on bringing out this team feeling already much earlier so we started a coaching group that takes care of supporting the team already at an early stage and facilitate team events and retreats."

Would you also like to be a part of this innovative project and reach the next milestones with us? Then send us an e-mail with your CV, interests and motivation to apply@swisslooptunneling.ch.

Starting with the new semester, bachelor and master theses can also be completed at Swiss-loop Tunneling. More information could be found on our website: <https://swisslooptunneling.ch/>



Ein Streich aus dem Jahr 1991

RICARDO HEINZMANN - WURDE VON EINEM HEFT AUS 1991 VERÄPPELT

Wenn Naivität auf Hartnäckigkeit trifft, ist eine verrückte Geschichte vorprogrammiert. In diesem Artikel erzähle ich, wie ich von einem Visionen Artikel aus dem Jahr 1991 reingelegt wurde

Es begann alles vor ein paar Monaten, als ich ein paar alte Visionen Ausgaben zur Digitalisierung an die ETH-Bibliothek schicken sollte, die im Archiv gelagert werden. Wuuuuuu Archiiiiivvvvv. Wer bei dem Wort "Archiv" an einen staubigen Raum mit hohen Bücherregalen denkt, wo vermutlich einst Luther die Bibel übersetzte (genauso wie ich mir das vorgestellt habe), den muss ich leider enttäuschen. Das Archiv der Visionen ist nämlich traurigerweise nur ein Schränkchen, das im CAB steht und wo wir alte Ausgaben und Fotos lagern.

Da stand ich also im Gang vom CAB Stockwerk E und packte Magazine in Briefumschläge, als mein Blick auf das Datum "Februar 1985" fiel. 1985??? Boahhh! Nachdem ich meine Kinnlade vom Fussboden aufgehoben hatte, bestaunte ich das Magazin. Ein Objekt aus dem Jahr 1985 mag für viele nicht wirklich alt sein, aber für mich kam mir das Magazin wie ein versteinertes Fossil vor, was ich mal lieber beim Landesmuseum als historisches Fundobjekt melden sollte. Das lag vor allem am Kontext des VIS. Bisher habe ich nur selten etwas im VIS kennengelernt, was ein höheres Alter hat als Clemens B. in der Redaktion.

Lange Rede kurzer Sinn: Neugierig blätterte ich Seite um Seite in den alten Magazinen, woraus eine ungeplante 2-stündige CAB-Flur-Reading-Session wurde (wieder bestätigt sich: Studenten haben wirklich kaum Termine). Viele der Schmuckstücke, wie z.B. die legendäre VIS Boots-Party, habe ich in der letzten Ausgabe präsentiert (wer das nachlesen möchte scant den QR-Code und sieht Seite 21). Darunter auch, jetzt wird es interessant, ein abgedruckter File Data Dump, also die Daten einer Datei in Text Format, der eine Audioaufnahme codieren soll (siehe Bild). Der Artikel drum herum ging um die Preisverleihung eines Gestaltungswettbewerbs:

Da Fulvio Carraro bei der Preisverleihung die Hymne persönlich vorgetragen hat (er wurde von Susanne Werner auf der Gitarre begleitet), möchte ich denen, die nicht am Fest waren, diesen Genuss nicht vorenthalten (File abtippen ☺, uudecoden und uncompressen...):

Die Anweisungen waren die Datei abzutippen, sie zu "uudecoden"¹ und dekomprimieren.



Ich wusste sofort, was ich zu tun hatte. Heldenhaft machte ich es mir zur Aufgabe, *das Rätsel zu knacken* die Datei zu decodieren. Mit nichten wusste ich zu diesem Punkt, dass diese Aufgabe eine emotionale Achterbahnfahrt sein werden würde.

Das Geschehene im Kurzdurchlauf:

- Ricardo (selbstsicher): "Pff, ich tippe das doch nicht ab. Das geht doch sicher schlauer..."
- Gescanntes Dokument zugeschnitten, on-line Image to Text convertiert, Text uudecoded, Ergebnis eine Flac Audio Datei, Vorfreude, Anspannung, Aufregung, Dateifehler - kann nicht gelesen werden
- Angestregtes Bildschirm anstarren, nochmals probieren, gleiches Problem
- Extrahierter Text durchgegangen, beinhaltet Fehler
- Andere img2text Website, nochmals probiert, gleiches Problem
- Spezialist hinzugezogen, Lukas Möller (Experte für alles, selbstsicher, auch bekannt als "Häcki") vertraut meinem Können nicht und convertiert zum Text nochmal auf dem eigenen PC
- Gleiches Problem
- Ich erzähle ihm aufgeregt von meinem Ziel und brainstorme Lösungsansätze
- Zeit die das Abtippen gebraucht hätte schon lange überschritten
- Kontrast vom Bild hoch, Hintergrund entfernt, nochmal probiert, gleiches Problem
- Kopf wird gegen Schreibtisch gehauen, IQ sinkt um 10
- Apple img2text Feature auch Fehlerhaft
- Ich suche Fehler im extrahierten Text und beginne zu korrigieren, Arbeit ist mühsam und nervenstrapazierend
- Loris und Rucki werden hinzugezogen, es stehen 4 Menschen um den Schreibtisch
- Text fertig korrigiert, uudecoded, erzeugte Audio Datei abgespielt, Fehler
- Mass an Enttäuschung nicht in Worte zu fassen
- Jemand kommt auf die Idee, die Datei mit "cat" zu öffnen und es passiert folgendes:

```


rheinmann@net ~ % pbpaste I uudecode hymn.au.z created
rheinmann@net ~ % uncompress hymn.au.z
rheinmann@net ~ % cat hymn.au

```

[There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here. it will instantly disappear and [be replaced by something even more bizarre and inexplicable.z
 There is another theory which states that this has already happened.z
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 There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here. it will instantly disappear and ne ran acad av somethina aven more niarra and ineynlcan e
 There is another theory which states that this has already happened.
 Douglas Adams, "the Restaurant at the end of the universe"

Vier verdutzte Gesichter, 20 Sekunden Stille und 2 "Hääääää"s später sackte die harte Realität. Die encodierte Audiodatei hat nicht Inhalt, der aus purem Zufall einen logischen Text ergibt. Mir wurde ein mieser Streich gespielt. Die Audio von Fulvios lieblichem Gesang (begleitet von Susanne auf der Gitarre) wurde nie codiert und nie gedruckt, und wird nie vom mir vernommen werden können. Stattdessen bekamen wir ein beliebtes Zitat aus dem Buch "The Hitchhikers Guide to the Galaxy". Und das sogar direkt dreimal hintereinander.

Im Nachhinein hätte man sich das Ganze auch denken können. Hätte man die Länge einer Audio-Datei mit der Menge an gegebenen uudecoded Text nachgerechnet^{2,3}, hätte man her-

ausgefunden, dass der Text nur eine Audiospur kodieren könnte, die kaum länger ist als eine hundertstel Sekunde. Ein Autor des Artikels aus 1991 hat tatsächlich auf meine Anfrage reagiert. "Mir scheint das Smiley nach dem "abtippen" schon ein erster Hinweis zu sein". Naja, im Nachhinein ist man immer schlauer. 

[1]: UUencode war das erste verbreitete Programm, das es ermöglichte, Binärdateien (also z. B. Bilder oder Programme) so umzuwandeln, dass sie nur noch aus „druckbaren ASCII-Zeichen“ bestehen ~Wikipedia

[2]: unkomprimierte Audio Datei mit Sampling Frequenz: 44.1 kHz, 16 bit Auflösung, 1 Kanal ergibt 705600 bit/s

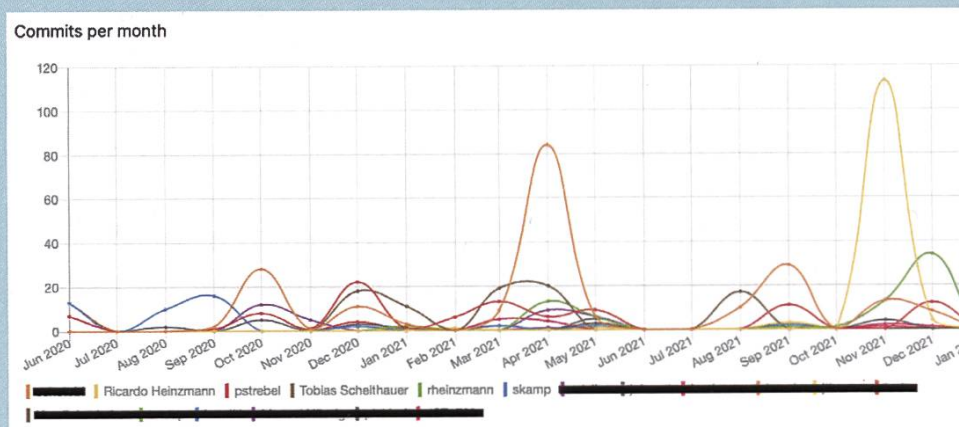
[3]: 1 ASCII Zeichen kodiert 7 bit. Der Text hatte 1030 Characters. Also kodiert der Text maximal 7210 bits

Shorts

Merge Them All

Ricardo Heinzmann - Zweigverbindungsexperte (branch merging expert)

Die Visionen verwalten ihre Artikel mit GitLab. Jeder Artikel bekommt einen Branch und einen Merge Request. Das hat mehrere Vorteile, wie beispielsweise Änderungsverfolgung. Die Verwaltungsarbeit, die so ein Repository bringt, ist aber natürlich etwas höher und ausserdem wohl nicht die Lieblingsaufgabe meiner VorgängerInnen. Dadurch hat das Chaos im Git repository früher oder später die Überhand gewonnen. Chaos heisst in diesem Fall **sechshundertvierundzwanzig** ungemergete Branches. Mithilfe von Noah schrieb ich ein Bash-Skript und konnte das Mergen automatisieren und unser Repository wieder zu neuem Glanz verhelfen. Die dadurch gewonnen Statistiken können ausserdem als ein kleiner Flex für meine Kompetenz als Chefredakteur eingesetzt werden *grins*



Frauenanteile

Nachdem wir im vergangenen Jahr in der Ausgabe "Beef" das Gendern diskutieren liessen, konnten wir feststellen, dass dieses Thema tatsächlich zu Diskussionen motivierte und mehr Feedback einbrachte als manch anderer denkwürdiger Artikel. Dadurch zu erhöhter Aufmerksamkeit verleitet, habe ich ein paar Daten gesehen, die mich beeindruckt haben.

Da wäre zum Beispiel der Frauenanteil unter den Studierenden in den Informatik-Studiengängen. Der lag nämlich 2020 (aktuellere Zahlen habe ich leider nicht gefunden), bei 15% im Bachelor und 17% im Master. Damit ist er noch niedriger als der Frauenanteil unter den Schweizer Twitterusern im just vergangenen Jahr, der bei 22.4% zu verzeichnen ist.



Ein Buch über Hormone

FIONA – HAT EIN TOLLES BUCH GEFUNDEN UND WILL IHRE BEGEISTERUNG TEILEN.

«Hormongesteuert ist immerhin selbstbestimmt» von Franca Parianen. Irgendwie schreckte mich der Titel etwas ab und doch konnte ich nicht aufhören es mir anzuhören [1]. Das Tolle an dem Buch sind aber auch nicht nur die Fakten, sondern die Art, wie diese vermittelt werden. Mit vielen Seitenhieben in Richtung unserer Gesellschaft und der Forschung und den Machthabenden, welche verhindert haben, dass wir schon mehr über Hormone wissen.

Das Buch unterhält. Es spricht sehr für ein Buch, das Fakten vermittelt, wenn es auch als Hörbuch funktioniert.

Hormone sind Frauensache? Oh no! Natürlich gibt es ein Kapitel über den Zyklus und einen zur Schwangerschaft. Es gibt jedoch auch einen zu den Hormonveränderungen von Männern während der Schwangerschaft der Frau. Aber das ist jetzt vermutlich noch nicht das, womit sich der Otto-Normal-Visionenleser momentan beschäftigt.

Das Buch erklärt, wieso es biologisch nicht einfach zwei Geschlechter gibt. Es hinterfragt unseren Umgang mit den Hormonen. Denn da wurde noch gar nicht so viel geforscht und Hormone funktionieren sehr komplex.

Wer also Abläufe im Körper oder die Welt besser verstehen will, wer einfach Gesprächsstoff braucht, um beim nächsten Date etwas interessantes von sich zu geben, oder wer einfach mal wieder ein unterhaltsames Buch lesen oder hören möchte, ist mit «Hormongesteuert ist immerhin selbstbestimmt» von Franca Parianen sehr sehr gut beraten.

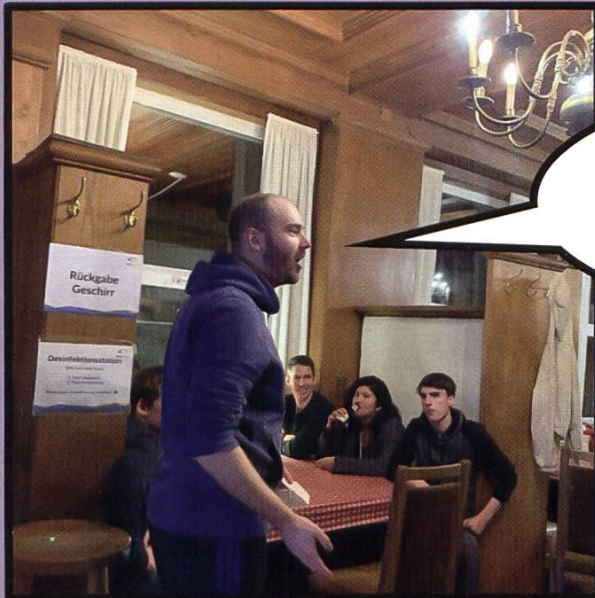


[1] Ganz praktisch ist das Buch als Hörbuch auf Spotify. Du hast also fast keine Ausrede mehr, es nicht zu hören/lesen.

Pascal Strebel - Had to do this crap himself because Robin was pissed off again

SNOWDOWN-SHOWDOWN

After a long time, the legendary Snowdayz could finally take place again. We were promised games, fun and alcohol. But once again Corona seems to spoil the whole thing...



Unfortunately, someone has been infected with Corona again.



Who do you think it is?



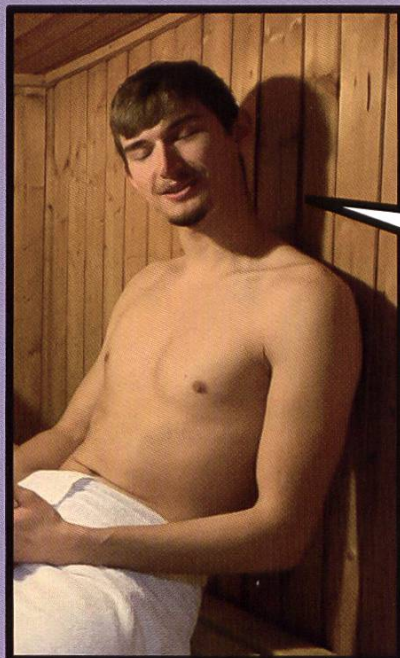
There is someone missing!



But how did she get infected?

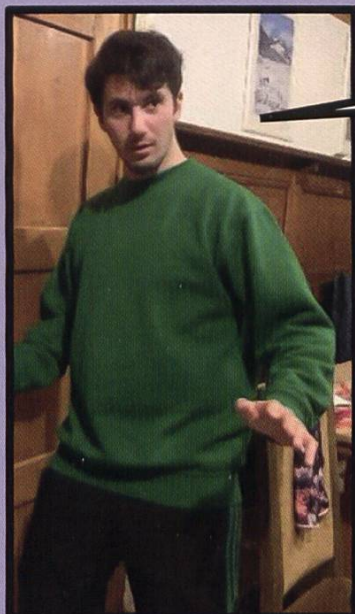
Yeah, who is Snowdayz' Patient Zero?

People begin to retrace the steps of the infected person....



... but no one seems to be able to solve the mystery...

Fortunately, there are real detectives among the participants.



I am a real detective!



They start to investigate.



Have you played board games with the positive person?

Yes!

So you infected her?!



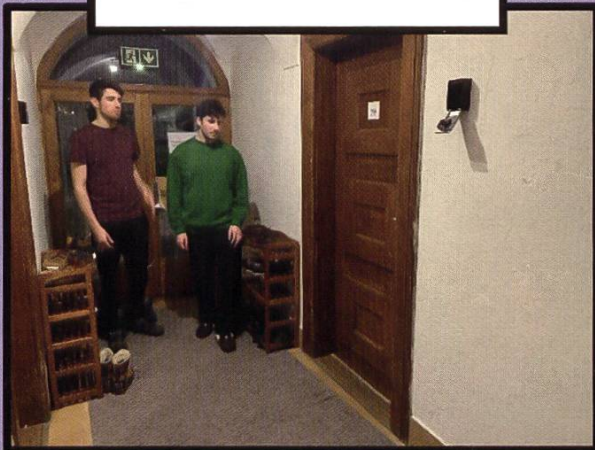
No, we all tested negative.



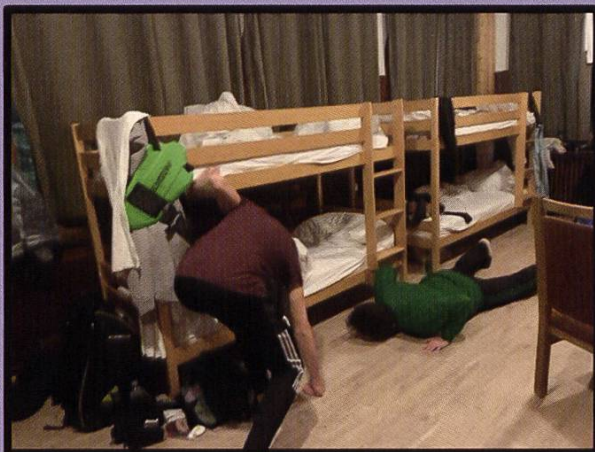
Looks like it wasn't them after all.

Maybe they lying...

The search continues...



Let's look for evidence in the infected person's room.



AHAA!!

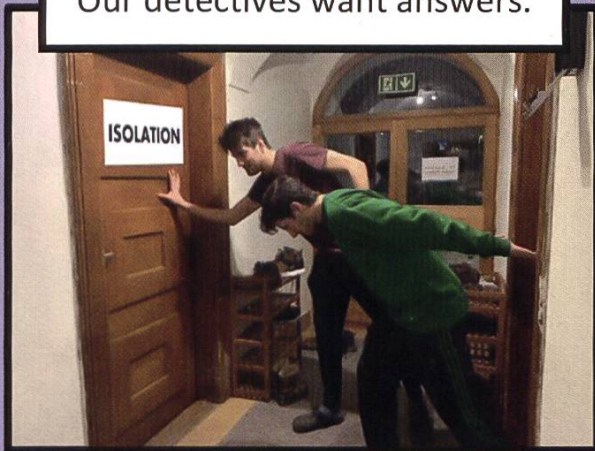




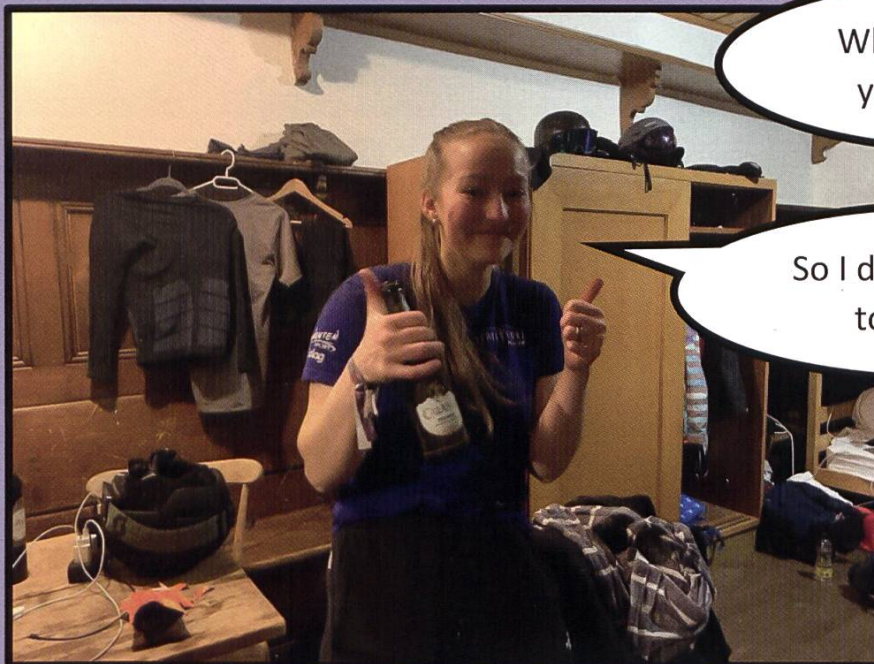
The positive tests
are faked! Nobody
is sick at all.



Our detectives want answers.



Why would you fake
your Corona test?



So I don't have to go
to my exam.



Tipps für Erstis:

Macht euch nicht so einen
Aufwand, schreibt einfach eine
Mail an die Prüfungsplanstelle...

THE END.



Thanks to the awesome actors and all
others who helped with the production!



Visionäre: v.l.n.r: Henrik, Tobias, Clemens, Lasse, Pascal, Robin, Ricardo, Fiona, Juan

Dein Artikel im VISIONEN

Alle Leserinnen und Leser sind immer herzlich eingeladen einen Artikel im VISIONEN zu veröffentlichen. Hast du etwas, das du anderen mitteilen willst? Warst du im Ausland und willst von deinen grossartigen Erfahrungen berichten? Hast du Lust einen Artikel zu schreiben aber keine Idee? Schreib uns und wir brainstormen zusammen. Natürlich können auch nicht-Informatikstudierende Artikel einreichen.

Infos, wie du einen Artikel schreiben kannst, findest du unter <https://visionen.vis.ethz.ch>

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Ricardo Heinzmann
chefredaktor@vis.ethz.ch

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layout@vis.ethz.ch

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Ricardo Heinzmann
Tobias Scheithauer
Pascal Strebel
Clemens Bachmann
Robin Schmidiger
Lasse Meinen
Johan Stettler
redaktion@vis.ethz.ch

und freie Mitarbeiterinnen und Mitarbeiter

Inserate
Henrik Laxhuber
inserate@vis.ethz.ch

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CAB E31
Universitätsstr. 6
ETH Zentrum
CH-8092 Zürich