

Final Report EGOI 2021











Useful Links



General

Homepage

https://egoi.ch/en/



Opening Ceremony

https://egoi.ch/en/opening_ceremony/

Closing Ceremony

https://egoi.ch/en/closing_ceremony/



Results

https://stats.egoi.org/editions/2021/results/

Social Media

Instagram

@swissolympiadininformatics

Twitter

@swissolyinfo

Facebook

@SwissOlympiadInInformatics

Youtube

@soidotch



Media

Blog

https://egoi.ch/en/blog/

Pictures

https://egoi.ch/en/gallery/

Videos of delegations

https://egoi.ch/en/video_challenge/



IT-Feuer

https://it-feuer.ch/

Interview with EGOI Organisers

https://science.olympiad.ch/en/news/news/Make-the-first-step



5 Reasons for EGOI

https://science.olympiad.ch/de/news/news/ 5-gute-gruende-fuer-die-european-girls-olympiad-in-informatics-egoi

Portraits of Swiss Delegation

https://science.olympiad.ch/en/news/news/meet-the-swiss-egoi-delegation





The European Girls' Olympiad in Informatics (EGOI) is a new annual international competition for young women interested in Computer Science. In two contest days the participants solve challenging algorithmic problems. The goal of this competition is to encourage more girls to discover computer science, give them an opportunity to build a network of like minded women, and to create female role models for other girls.

This first edition of EGOI was planned to be hosted in Zurich. Due to the COV-ID19 pandemic, the one-week event was held virtually from 13.06.2021 until 19.06.2021. In total, 157 participants from 43 countries participated. More than 80 volunteers helped organise EGOI 2021.

This final report shows some aspects of the event in more detail and the different organisers talk about their respective topics they worked on.



























Virtual Event









In March 2020 when the pandemic hit, we were not worried. The EGOI seemed far away and until Summer 2021, we were sure, the world would have returned to normal. At this point we had already booked 80 rooms in the Ibis Budget Zürich City West, reserved various rooms at ETH, organised 1620 lunch and dinner servings at the ETH Food&Lab, and had plans for an exciting social program like an excursion to the Chäserrugg.























We spent February and March evaluating different scenarios for some reduced onsite options and kept close contact with the interested countries on what restrictions and quarantines they would find acceptable. In April we realised there were too many uncertainties involved, and postponing the decision any longer came with a severe financial risk, as the hotel booking could not be cancelled without a fee for much longer. Furthermore, planning with so many uncertainties puts a lot of strain on the motivation and mental health of the organisers. We decided to cancel the onsite event all together and instead focus on a nice social program for the online event.

To ensure that the girls would have a great experience at EGOI, we encouraged the delegations to meet onsite wherever the local COVID rules allowed. We planned our social program such that it leaves enough space for local excursions. Some of the money allocated for the hotel in the original budget was used to financially support delegations organising such a local hub. 24 delegations used this offer.



To ensure good communication between the organisers and quick reaction in case of serious issues, we decided to meet onsite with the core organisers, the scientific and technical committee and a few additional helpers. We rented some rooms in Technopark Zurich and booked rooms in a hotel close by. In total we had 12 people present, who of course took the mandatory COVID test before arriving at the location.

This organiser hub turned out very valuable during the week. It was very helpful that everyone knew what the others were doing, and it was easy to provide support (e.g. by getting take away or ice cream) for people who were very busy.





















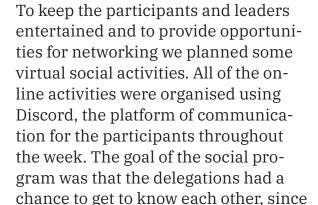






Social Program





many had not yet met in person. Furthermore, the goal was for different delegations to get to know each other. We knew that this would be hard, and hence divided the delegations into 14 groups. Each group had 3-4 delegations and was assigned one team guide who had the responsibility of keeping the delegations informed and to encourage them to socialise.









Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Opening Ceremony	Local Excursion	Exam	Local Excursion	Exam	Closing Ceremony
3D Work- shop	Escape Room, Quiz, Party Games	Social Gaming	CS-Outlook, Movie Night	Social Gaming	





Ceremonies







The opening ceremony on Monday showcased the participants and included motivational speeches from Stefanie Zbinden (chair of EGOI), Sarah Springman (rector of ETH Zurich), and Gabriela Keller (CEO of Ergon Informatik). Each delegation provided a short video where some of the participants introduce themselves and give a short word of encouragement in their own languages. The closing ceremony







3D Workshop

To start off the week, we organised a 3D-modeling workshop on Monday evening. We prepared a short introduction-film to Tinkercad, an online 3D-modeling program that runs in a web browser. The participants then had the chance to play around with it some more and create personalised keychains. These keychains were then printed out in the Makerspace of ETH and the finished products were sent to the participants together with their goodies.











Social Evening Activities

On most evenings we organised some kind of social activities.



On Tuesday we had three activities planned for the participants. They had the option to solve an online escape room in teams of four, they could participate in a fun quiz about Switzerland and its culture and lastly they had the chance to play with each other one of the Jackbox party-games we had chosen.









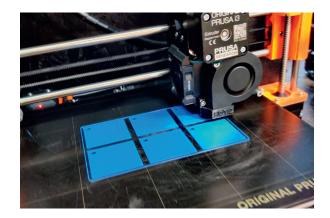












On Wednesday and Friday we organised a fun social-gaming round where we offered games like Among Us, Overcooked and Unrailed. In small groups the participants could get to know the games and play them with each other over Discord.

On Thursday we ended the day with a casual movie-night where participants had the chance to watch Puss in Book, an interactive movie of the cat from Shrek. There, the participants had the chance to decide together how the movie would progress.





























CS Outlook

In the CS Outlook we had four speakers talk about different research-areas that Computer Science has to offer. The participants then had the chance to ask the speakers questions about the presentation or just generally their studies and their path in CS. We had speakers from a theoretical computer science group at ETH, from the developers of Unrailed (a video game the participants played the day before), from an ETH group doing Robo Soccer, and a group at ETH exploring virtual and augmented reality for learning maths. With three of the speakers being female we also used this opportunity to showcase women further in their career for the participants to get inspired about what they might one day do.





























Local Excursions

On Tuesday and on Wednesday we kept the day free from official program in order for the delegations to organise some local excursions. Many delegations organised something and documented them in the videos they sent us (available on the website). For example, the Swiss delegation went on a cycling tour and visited a rope park, and the delegations from Germany and Luxembourg visited each other in Cologne.









One of the main events of EGOI were the two competition days. A lot of effort was put into ensuring finding interesting and engaging tasks and preparing the technical environment to ensure an enjoyable and fair experience for the participants.



Task Selection



It was decided rather early in the organising process that even though the contest takes inspiration in IOI (International Olympiad in Informatics), we will have 4 tasks each contest day (as opposed to 3) to cater for the expected higher variance in the contestants' skills and experience.

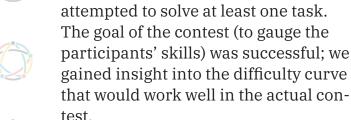


To help us assess the desired contest difficulty, we organised a test contest in spring 2020. This contest consisted of old tasks from CEOI (Central European Olympiad in Informatics), SOI (Swiss Olympiad in Informatics) and Codeforces contests, in some cases adjusted to olympiad style. The contest was hosted on the Codeforces platform, after the initial attempt to use the SOI grader proved too cumbersome.

There were around 60 contestants who

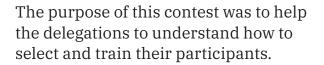








Based on this information, one of the tasks was substituted for a more difficult one to form an example contest. This was also hosted on Codeforces. and was linked on the EGOI website.



When the contest format and the desired difficulty were clear, a public Call for Tasks was announced both on the EGOI website and on Codeforces. The Call for Tasks was open between July and October 2020. The reward for the authors of selected tasks was an invitation to the onsite event in Zurich. As the budget only allocated this reward for up to 5 task authors, it was clear that some of the tasks (probably the easier ones) and the backups have to come from internal sources.

The Call for Tasks attracted around 20 submissions of varying difficulty, originality and quality. The then-formed Scientific Committee (SC) familiarised itself with them and in November selected 5 tasks for the actual contest. The preparation of task statements, test data and all additional tools started right away. The remaining three tasks were selected among submissions of the SC members in February 2021, with two backup tasks selected later on.

This preparation was uneventful, with a lot of the effort concentrating on the interactive task, and how it will integrate with the grader of our choice (which was CMS at the time). One of the SC members dropped from the team throughout the preparation, but as the schedule was generous, this didn't cause any major problems.

















Move to Codeforces

At the start, we planned to use the Contest Management System (CMS) as a judging system which is also used at IOI. Since CMS suffers from high variance in running times of the submitted solutions, we have put substantial effort into optimising the grading part of CMS. When it became clear that this optimised grading process would not be integrated into CMS in time, we decided to switch to the backup plan of using Codeforces for hosting the competition. As the task preparation system that was used by the SC integrates seamlessly with Codeforces, the system worked reliably and stably throughout the contests. However, the contest rules specified a scoring schema which is not supported by Codeforces. In order to provide the correct feedback to the contestants, we replaced Codeforces' scoreboard with an external one. Furhtermore, the translated task statements needed to be made available via an external website to the contestants. Although the external resources affected the contestants' experience during the contest, we were able to run the competitions smoothly thanks to falling back to Codeforces.

Practice Contest

On Monday there was a practice contest. The goal of the practice contest is to validate the technical setup on both sides of the competition, and to let contestants familiarise themselves with the contest format and environment. The tasks for the practice contest were made public a week before the contest, and it was allowed to bring printed or handwritten solutions to them.

Two of the example contest tasks were reused for the practice contest. The third practice contest task needed to be interactive to allow participants to familiarise themselves with the intricacies of such tasks. A basic binary search task was used, as this was already a prepared problem in Polygon, the task preparation system we used.



















Contest Days



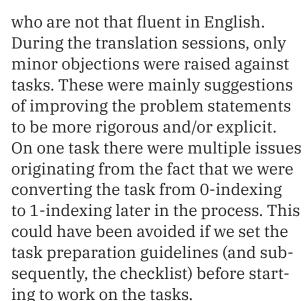
The actual exams took place on Tuesday and Thursday. One of the challenges during contest days was that during the contest week three out of four Scientific Committee members received their second vaccination dose. Fortunately, this didn't incapacitate any of us severely. We had a backup capacity thanks to Petr (tester) and MisoF (IC member).



We had an extensive preparation checklist that we have run prior to the contest to ensure the tasks are prepared without any issues. We have rerun this checklist before each contest day. On Thursday, we found a major issue in the test data of one of the tasks, and spent the majority of the day fixing it. Luckily, this was found before the contest and the translation session. Hence, from the external viewpoint this wasn't noticed.



Before each competition day, there was a translation session in the evening where we presented the tasks to the leaders of the delegations. They then translated the task statements into their own language for participants



There were no major problems with the contest as it was running. There were ~10 clarification requests on each day, most of which were answered with "No comment" or "Please read the problem statement carefully". We were a bit more descriptive when it came to judging verdicts not described in the rules (Presentation error, Idleness limit exceeded) which were caused by the last-minute move to Codeforces. Additionally, we provided some degree of clarification for the interactive task.

















zeros EGOI 2021 Day 1 Tasks English (ISC)

Zeros

Problem name	Zeros		
Input file	standard input		
Output file	standard output		
Time limit	1 second		
Memory limit	256 megabytes		

Santa Claus is already preparing for Christmas 2021. He wants to buy some positive number of presents, such that he will be able to divide them evenly (without remainder) among all eligible (not naughty) children. However, he does not yet know how many eligible children there will be - he only knows that this number will be between a and b. Therefore, he wants to buy the minimum positive number of presents that can be divided evenly between any number x of children with $x \in \{a, a+1, ..., b\}$.

He has computed this (possibly huge) number of presents, but he is unsure about the correctness, and he would like your help in performing the following basic sanity check. Are you able to tell him how many zero digits there should be at the end of this number?

Input

The first and only line of the input consists of two space-separated integers a and b ($1 \le a \le b \le 10^{18}$).

Output

Output a single integer -- the number of zeros at the end of the number of presents that Santa needs to buy.

Scoring

Subtask 1 (6 points): $b \le 16$.

Subtask 2 (7 points): $b \le 40$.

Subtask 3 (9 points): a = 1 and b < 200.

























Communication





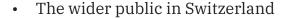
The communication surrounding EGOI was directed at two different target groups:











The communication for EGOI 2021 re-

lied on the collaboration with the Swiss Science Olympiads which provided

human resources and know-how as

well as an additional platform. In the

months leading up to the event, sever-

al articles concerning EGOI were pub-

lished on the website and in "WOLY".

the magazine of the Science Olympiads and distributed via the Science

Olympiad's newsletter, which reached

the extended community of the Sci-

ence Olympiads including teachers

and young scientists. For example, the Science Olympiad conducted an

interview with some of the organisers

a year before the event, published an

collaborated with EGOI volunteers on the publication of portraits of the Swiss

delegation (see page 2). The Science Olympiads were also responsible for

article on the reasons for EGOI and















media relations.



When targeting the wider public, communication was to go beyond the event itself. This aim was reached by the initiation of a campaign for equitable educational opportunities in IT. The campaign originating in the organisation of EGOI was realised by Senarclens Leu + Partner under the title "IT-Feuer/IT tout feu tout flamme", mainly between May 10 and June 11. 25 organisations and 2 partner companies came together based on their shared commitment to promoting women and young talent in informatics. Together, they presented around 80 offers (Workshops, courses, events, and other educational opportunities in IT) for teachers, students, and school classes on the website. Furthermore, 15 impressive women working in IT were showcased. The website saw 1800 visitors.

Using differents newsletters from participating organisations and other partners (Fit-in-IT, LCH Dachverband Lehrerinnen und Lehrer Schweiz, ICT Kommunikation, Infosciences, and more), and classical media such as NZZ, RTS, or a sponsored Watson article with 400'000 views the following message was to be spread:

"With Computer Science I can shape the world of tomorrow and this world should be shaped from everyone, independent from age or gender"

Posts on Instagram and Linkedin with around 94'000 impressions accompanied the campaign, which will, due to very positive feedback, probably evolve from a one-time fire into an ongoing campaign.



Media Relations

Another way in which EGOI reached the public was through media relations.

In order to draw the attention of the media, two press releases were published and distributed to national, regional and subject-specific media contacts in Switzerland. The first press release appeared a week prior to EGOI and mainly focused on the purpose of the event, while the second press release after the event focused on the achievements of the Swiss delegation and the success of the event in general. Additionally, EGOI was already referenced in the press release concerning the 2021 finals of the Swiss Olympiad in Informatics in May.

With the first press release, time slots were communicated during which journalists could visit the participants or organisers virtually or on-site in Zurich. However, this offer was not taken advantage of. Instead, journalists preferred to contact participants or organisers directly and before rather than during the event.

Whereas international media responses were not monitored, EGOI received over 30 mentions in Swiss media. Regional outlets showed the most interest, particularly in portraying individuals involved in EGOI.

Blog

During the EGOI, daily blog posts on the website were published. Altogether, six blog posts appeared over the course of the week. These blog posts were directed primarily at the extended EGOI community, each morning giving a review of the previous day and insights into the experience of EGOI 2021 from the perspectives of different delegations or the organising team. The purpose was to entertain the readers and to document some narratives of EGOI 2021. Each blog post was accompanied by photos either taken by volunteers in Zurich or taken from international delegations with their permission.



























Südostschweiz Glarner Nachrichten, 30.6.2021



















die erste europäische Informatik-Olympiade für iunge Frauen statt: mit 157 Teilnehmerinnen aus 43 Ländern. ETH-Studierende organisierten den Wettbewerb. Die Initiative



Vier Fragen an Stefanie Zbinden

om 13, bis 19, Juni fand

«Mutig und selbstbewusst statt herzig und brav»

Glarnerin gründet Informatik-

Olympiade für junge Frauen

«EGOI» steht für «European Girls' Olympiad in Informatics». Die junge Mathematik-Studentin Stefanie Zbinden leitete das Organisationskomitee und ist die treibende Kraft hinter dem neuen Wettbewerb.

Leiterin

Organisationskomitee European Girls' Olympiad in Informatics



und Kreativität statt «stumpfes» Ausrechnen. Dies hat meine Begeisterung erst richtig entfacht. Mathematik ist meine Leidenschaft

Im Promovideo der EGOI sagen Sie, dass man sich als Mädchen in der Szene oft nicht so zugehörig fühle. Noch immer scheinen Top-Frauen in Mathe und Informatik Ausnahmen. Woran liegt das? Und ist das wieder eine schlechte Frau.» Wogegen schlechte Resultate bei Männern viel weniger wahrgenommen werden. Zum zweiten Teil der Frage: Es gibt Unterschiede in verschiedenen Ländern, wie stark Frauen in der Mathematik in der Unterzahl sind. Aber ich kenne kein Beispiel eines Landes, in dem Frauen nicht stark untervertreten sind.

Wie lief die Olympiade genau

Programm können muss. Ein stark vereinfachtes Beispiel: «Gegeben ist eine Karte mit Kreuzungen und Strassen. Finde den kürzesten Weg von A nach B.» Die Teilnehmerinnen müssen dann ein Programm schreiben, welches dieses Problem lösen kann.

Eine Vision: Wo sind Frauen in der Mathematik und Informatik in 50 Jahren? Meine Vision ist, dass es in 50 Jahren in



Bieler Tagblatt, 2.6.2021











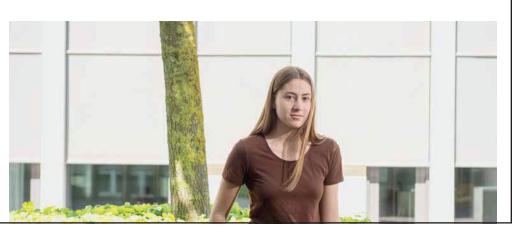
«Das ist wie ein logisches Rätsel»

Informatik Jasmin Studer aus Erlach hat sich für die europäische Frauen-Programmierolympiade qualifiziert. Am nationalen gemischten Wettbewerb gehörte sie zu den wenigen weiblichen Teilnehmerinnen.

Manuela Schnyder

Eigentlich hat sich Jasmin Studer früher gar nicht so für Computer interessiert. Sie spielt in ihrer Freizeit Klavier, singt in einem Jugendchor und liebt das Lesen. Im letzten Jahr hat sie dann am Gymnasium Lerbermatt in Köniz im Informatikunterricht angefangen, zu programmieren: «Das ist wie logische Rätsel zu lösen. Man braucht eine zündende Idee. Und es macht dann mega Freude, wenn man nach einer Weile diese Idee hat», erklärt sie.

Und das merkt man: Die 16-jährige Erlacherin hat vor rund zwei Wochen am Schweizer Programmierwettbewerb die Bronzemedaille geholt. Damit ist sie automatisch für die europäische



Social Media

The social media presence of EGOI 2021 was hosted by the accounts of the Swiss Olympiad in Informatics in the form of an extended takeover. Social media was used in two main ways:

- To share and draw attention to content relating to EGOI from other platforms, such as the EGOI blog or Swiss media responses.
- To interact with the EGOI community and share posts by individuals and organisations participating in EGOI across the world.





Photos and Video

During EGOI, photos and videos were taken by volunteers and covered the activities of the Swiss delegation as well as the on-site organising team. Furthermore, EGOI was provided with some photo and video material of the international delegations, for example via Keybase, Discord, social media or the video challenge. For the opening and closing ceremony, video messages were recorded in a studio provided by ETH Zurich. All the photos and videos can be found on the website.































Volunteers

We had many additional volunteers who supported us during the week of the event, mostly with the social program. There were two types of volunteers: team guides and event specific volunteers.

The team guides were present the whole week, being responsible for 3-4 delegations each. They made sure all the social program related information was relayed to the participants and they were the first contact if participants had any non-competition related questions. The event specific helpers were only responsible for helping with certain events. Typically, they helped at 1-3 social program events.

We advertised being an EGOI volunteer mostly in SOI and other Olympiads. Most volunteers had unsurprisingly some Olympiad background either being a volunteer or having participated at the Informatics Olympiad or a different Olympiad. Some volunteers had a Computer Science background and were not related to the Olympiads.

The volunteers we found were reliable and managed to relay all the important information. The model of having a team guide per 3-4 delegations did not work as planned, as some of the delegations were not very active leaving some team guides with only 1 semi-active delegation. In hindsight, we would probably make larger groups (5-8 delegations) and then have two team guides: if not many delegations show up or there is no conversation, the team guides can talk to themselves and get a discussion started this way. However, one has to be careful how to assign the groups of two guides and make sure that they work well together.

Goodies

As is customary at Olympiads we prepared a goodie-bag for all the participants and volunteers. When we had to switch to a virtual event, we decided to ship the goodies by post. On a packing day we packed all the bags and prepared the parcels for shipment to the delegations and the volunteers. We also included the medals won by the participants and the diplomas. In total, we packed around 300 bags and shipped more than 100 parcels all over the world.

The goodie-bag included the following items, all of them with EGOI branding:

- Gymbag
- Shirt
- Socks
- Water bottle
- Pocketknife
- Playing cards with informatics riddles
- Towel
- Chocolate
- Writing pads
- Pens
- Stickers





























Finances

The original budget for EGOI was 300'000 CHF. We had a total of 8 partners which helped finance the event beside the contribution of the organisers themselves: State Secretariat for Education. Research and Innovation. D-INFK of ETH Zurich, Hasler foundation, the cogito foundation, Ernst Göhner foundation, QuantCo, Jane Street, and Ergon Informatik.







Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra

Eidgenössisches Departement für

Staatssekretariat für Bildung, Forschung und Innovation SBFI

Wirtschaft, Bildung und Forschung WBF













ERNST GÖHNER STIFTUNG



HASLERSTIFTUNG

the **cogito** foundation

Due to the change to a virtual event the cost of the event sunk drastically. In the end, we spent 135'000 CHF out of the 300'000 CHF raised, distributed as follows:

Accommodation & Meals for Organisers

Social Program







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CHF

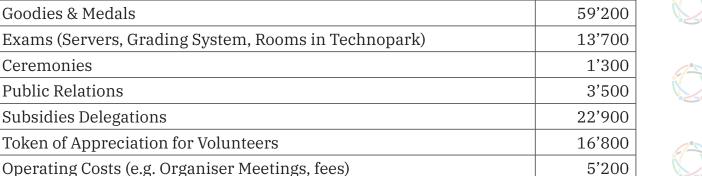
9'000

3'400









Impact









We received many positive messages from delegation leaders and participants of EGOI, detailing how EGOI already had a positive impact for the Olympiad in their country or themselves.













"EGOI really boosted my self esteem and I'm extremely happy. It was the first time I felt like I belonged at an informatics contest."















"The impact on the regular national olympiad has been immediately obvious (4 female finalists!!!!) and the kids are looking forward to EGOI:)"































"Seeing the girls living this experience and getting motivated was one of the best things I've seen during my time organizing events for the mexican olympiad."

































EGOI 2021 might be over, but this will not be the end of the European Girls' Olympiad in Informatics. We set out to establish a sustainable new initiative which will support girls in Computer Science for many years. Each year the competition will be hosted by a different country. EGOI 2022 will be hosted by Turkey. See you there!





























Imprint

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Organisers & Participants of EGOI with permission

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Benjamin Schmid

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