

Scale

With a scale you can compare two objects. How often do you need to measure to find the lightest of n objects?

- a) $n \cdot n$ b) n
- c) $n - 1$ d) $n/2$

Algorithm

Which numbers does the following algorithm print?

```
1: X = 1
2: X = X + 2
3: PRINT X
4: X = X - 1
5: IF X ≠ 6 GOTO 2
6: END
```

Symmetric numbers

We call a number symmetric if it is the same read from front to back and from back to front. For example 12321 is a symmetric number, 123 is not. Leading zeroes are not allowed.

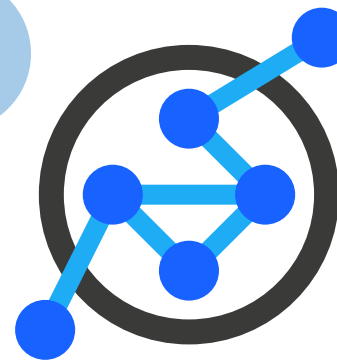
- Q1) How many symmetric two-digit numbers are there?
- Q2) How many symmetric three-digit numbers are there?

Implement: Given a number, find the next bigger number that is symmetric. For example if you are given 864, output 868. Given 868, output 878.

These and more tasks on
intro.soi.ch

How to participate:

1. Sign up on soi.ch
2. Come to our workshops and learn to code and to solve our puzzles
3. Solve the First Round between September 15th and November 30th 2022
4. Get the results at SOI Day at ETH Zurich in January 2023



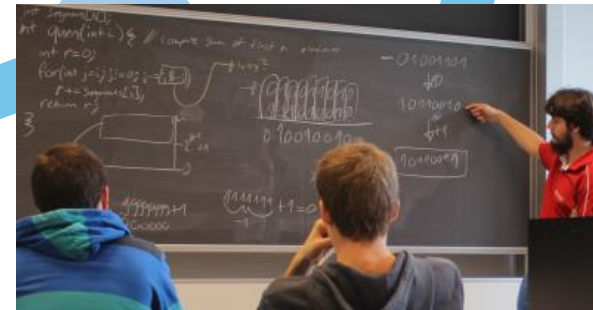
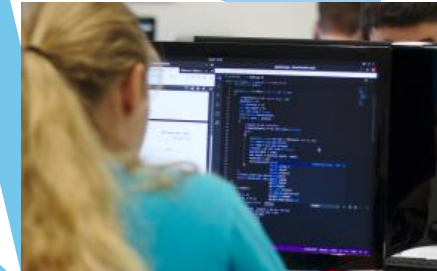
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Programmierwettbewerb für Jugendliche
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Swiss Olympiad in Informatics – how does it work?

For most tasks, you have to compute certain information based on input data. But rather than doing it yourself, you write a program which finds the answer for you. This can be quite tricky. Don't worry – you don't have to be able to code already.



How do I participate?

The first round takes place from 15.9.–30.11 on the internet, on soi.ch. During this time, we offer programming and algorithms workshops, where you can learn everything you need. Workshop dates and signup on soi.ch.

Who is it for?

We recommend starting to participate at around 15 years. You're eligible as long as you're attending a Swiss school and are below 20 years.

Learn more:
soi.ch



Partners

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You may also be interested in our associated Olympiads in Biology, Chemistry, Geography, Linguistics, Mathematics, Physics, Philosophy, Robotics and Economics.

```
int make_id() {
    static int last_id = 123;
    return last_id++;
}

int insert_back(int target) {
    to.push_back(target);
    int id = make_id();
    return id;
}

int front_index() { return 1; }
vector<int> result() {
    return {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
}

size_t size() const { return ids.size(); }

int main() {
    auto ids1 = ids;
    auto ids2 = ids;
    auto to2 = to;
    for (size_t i=1; i<r; ++i)
        ids2[i] = ids[indices[i]-1];
    r.insert_back(-1);
}
```

First Round

The first round is conducted online. You have to submit your solutions between **September 15th and November 30th**. You have 2½ months to solve 6 tricky tasks. The best participants qualify for the second round and receive an invitation to the SOI Camp.

Juniors

The first round is split into two categories: Regular and Junior. If you can still participate at least three times, you are in the Junior category, with more beginner-friendly tasks, and a better chance to secure a spot in the camp.

Workshops

The workshops are open to all participants during the first round. They provide an ideal starting point for entering the competition. No matter how much background knowledge you have, you certainly will benefit.

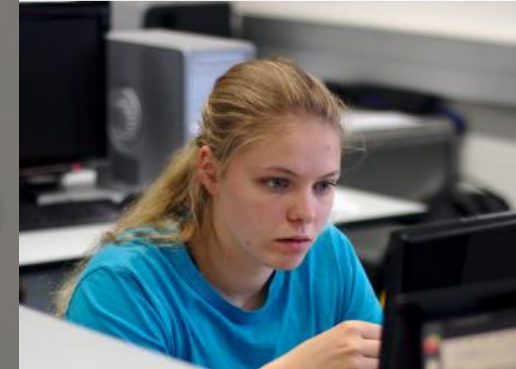


«At the SOI, you meet many students from across Switzerland. The organizers are always ready to explain the interesting ideas behind the algorithms which are important for solving tasks. During breaks or in the evening, you can play games or discuss various topics with everyone.»

Ema Skottova, participant SOI 2021

«At the Swiss Olympiad in Informatics, we solve interesting problems, meet great people and have a lot of fun while doing it. But the SOI is more than instructive contests. Together, we learn new concepts at the training camp in Sarnen or at workshops after the first round (which are open to all), we write mock contests, and have conversations.»

Lukas Münzel, participant SOI 2022



Second Round

In March, the participants compete in a theoretical and a practical exam, both of them lasting for 5 hours. The 12 best participants qualify for the final round.



Final Round

On two weekends in May, the 12 final contestants compete in four 5 hour-long sessions. The best are selected for delegations to the IOI, the CEOI, the RMI and a variety of training camps.

What is the SOI Camp?

Based on the scores in the first round, 24 participants get invited to a training camp. The SOI Camp is a week in February, where the participants meet to code and study.



International Olympiad in Informatics

Over 80 nations send their 4 best students to compete in the International Olympiad in Informatics (IOI). The IOI is the most important, but not the only international event where the best participants of the SOI can meet, exchange and compete with other teenagers. IOI 2023 will take place in Hungary.



European Girls' Olympiad in Informatics

The top four female participants of the second round have the chance to represent Switzerland at the EGOI, and meet girls from all over Europe who share their interest in informatics.

