

Informatics Education and Contests in Estonia

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Outline

- informatics or computer science education in schools
- contests
 - beaver
 - informatics olympiad
 - game programming competition

Informatics education

IT is recognized as an important skill in the national curriculum. But the curriculum only defines in general terms the IT skills graduates should possess. Usage of computers as tools to create presentations, search for information and perform minimal statistical analysis (compute averages and create diagrams), but no topics usually associated with computer science.

Schools are not required to teach informatics as a separate subject.

Instead of separate classes, pupils are supposed to acquire the necessary skills in the process of using computers to learn other subjects.

For example looking at maps in geography or doing a presentation for history class.

Now we are heading to have IT as a separate subject again.

Although it is not required, many schools choose to teach IT courses but it usually means learning to use Word, Excel, PowerPoint and Paint.

Only a few schools offer computer science or programming classes either as part of a specialization or in the form of an extracurricular activity.

The University of Tartu has also “The Gifted and Talented Development Centre”. They offer many courses for individual learning via ordinary mail or e-learning.

Contests

Beaver

Beaver contest has been held since 2005. There are 3 age groups Benjamins for 6-8 grade, Juniors for 9-10 grade and Seniors for 11-12 grade.

There are 2 round in Beaver contest. The first round is in different schools all over Estonia. We use Miksike environment for that. This year 3956 students competed in the first round. The best 15 in every group, which means about 45 students are invited to the final round, which takes place in Tartu university. In the final round we use a different testing environment to be able to use interactive tasks with JavaScript.

For every round and every age group we have 15 tasks to solve. We have a question about computer history, 1 or 2 about computer ethics, 3 on computer software, a hardware question. Geometry, algorithms, 2 for information comprehension, logics and 3 last questions about discrete mathematics.

Informatics Olympiad

Informatics Olympiad has been held since 1988. Estonian students have also competed in IOI since 1992 & BOI since 1995.

We have an open competition, which means the that students have a week to solve the tasks and also there is a pre round, which is similar to international olympiad. In both of these 50 to 150 students attend usually. Best 30-40 are invited to the final round. But to get to international competition a little training is also required so 15 to 20 persons are selected for training camps. They have to compete for their place in the Baltic Olympiad in Informatics and after that best 4 get the chance to go to the International Olympiad in Informatics.

Last year in IOI Estonian students got 2 bronze medals, the year before a silver medal.

Tasks in informatics Olympiad require programming skills and harder tasks might require knowledge of algorithms like Dijkstra's shortest path or Ford-Fulkerson's max flow.

The Game Programming Competition

It has been held more than 6 times already.

Before it was only for school kids, but from this year university students can also compete.

The competitor can program the player or the interface for the game or both. The server is programmed by organizers. This usually requires more time so it is allowed to work in smaller team.

There have been different games for different years:

- Cobbler for 2002/03
- Pool for 2007/08
- A real time strategy game 2008/09 called *Lahing* (Battle)

This years game was Stop-Gate on a 12x12 board with 2x1 game pieces. First player puts tiles vertically, second horizontally. Loses the one who can't make a move.

In conclusion

IT classes are not required, but most schools have them although no topics usually associated with computer science. Now we are heading to have them as a separate subject again.

We have Beaver competition, which requires overall knowledge about IT. Informatics Olympiad and game programming contest that require programming skills.