

Programming camps

Letting children discover the computer science

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Overview

Programming camps

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What are programming camps?

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Programming camps:

- are part of informal education
- are award for good results in Correspondence Seminar in Programming
- give students opportunity
 - to meet people with similar interests
 - to discover computer science in non-standard way
 - also to be trained for contests in computer science

Facts about programming camps

Programming camps

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- 32 attendants, 10 organizers, small difference in age
- students are divided into 4 teams, team's line-up lasts for the whole camp
- in 6 days
 - about 13 hours on lectures
 - 30 hours on games partly consisting of small didactic games
 - at least 9 hours on computer science (and partly math and logic) contests
 - other time is spent on social activities and basic human needs

Schedule

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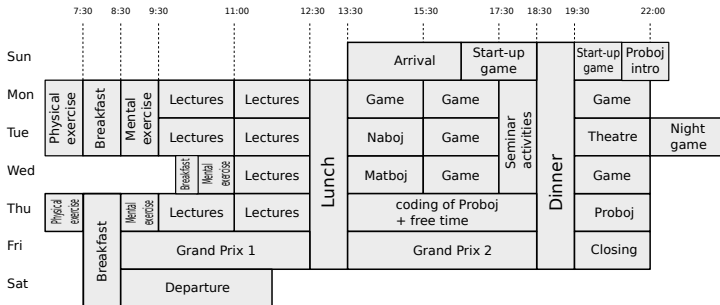
What are
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Educational program

- Lectures and seminar activities
- Proboj - the programming competition
- Naboj - mainly mathematical team contest
- Matboj - the game tournament
- Mental exercise

Lectures and seminar activities

Lectures

- 2 parallel lectures with different difficulty
- in each camp invited also people from university or a company to make a lecture
- from computer science on theoretical level to the presentation of the newest trends, technologies

Seminar activities

- at least 5 parallel seminar activities
- regular meeting on one chosen topic
- more algorithmic, sometimes practise training

Topics:

- simple complexity, data structures, basic graphs, dynamic programming, greedy algorithms, divide and conquere
- computational theory, complexity theory, string algorithms, cryptology, coding theory, formal languages, popular software, computer architecture

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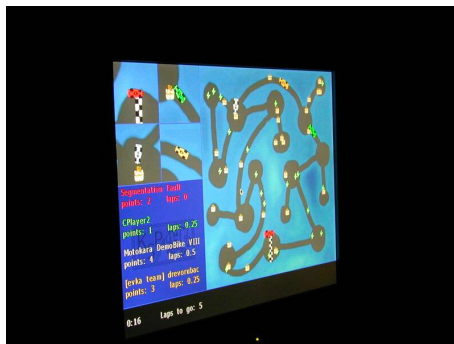
Social activities

At the end

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Proboj – programming fight

- team contest running for almost whole camp
- computer game with set rules, team creates computer player
- games mostly without best strategy fast enough
- at the end show with everybody watching the game



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Naboj – mostly mathematical
team contest

- team contest with lot of mathematical and computer science tasks
- teams have 5 tasks at one time
- at the end discussion of the solutions

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Matboj – the game tournament

- tournament in a given combinatorial or a board game
- teams are given time to think out a strategy
- in tournament teams are separated and member of team play separatly to gain points for their team
- games: variations of the NIM, pipemania, chess with funny rules



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Mental exercise

- the only individual competition
- each day, 2 algorithmic tasks on different level, with lot of solutions with different efficiency, 30 minutes
- sample solutions at the end

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Social activities

- other games with educational content hidden inside
- games to improve logical thinking, communication, cooperation, skill to work under pressure, they train their memory, finding strategies, ...
- sometimes computer science didactic games focused on coding theory, binary numbers, cryptology



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At the end of the camp

- last day complex game called grand prix
- closing ceremony
- questionnaire as a feedback

Conclusion

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- programming camps with 25 years of tradition and still improving
- people who experience a camp, wants to go again
- contestants are succeeded in future life, they belong to best students in our universities, follow to postgradual studies and more or go to work in prestigious companies

Thank you for your attention.

For more information read our article or contact us.