Programming as a Sport: What Do You Mean?

A Brief Look at the World of Programming Contests

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Micro SF/F stories
@MicroSFF

A spaceship landed, and an imposing alien emerged.
"People of Earth, send forth your champion! We challenge you!"
"In what?"
"What do you mean?"
"We have champion knitters, runners, jumpers... thousands of things."
"You compete in everything?"
"Don't you?"
"Er... We must go now."

17:05 · 25 Feb 21 · Hootsuite Inc.

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What It's All About?

Designing and implementing
correct and efficient algorithms
to solve given data processing problems.

The problems are given as stories (*word problems*);
the contestant extracts a mathematical model,
then designs and implements a solution.

How Does the Ranking Work?

Correctness

- "black box" testing with a set of test cases
- test data typically not shown during the contest

Efficiency

- execution time and memory limits per test case
- increasingly large and/or difficult test cases

Additionally

- time to write and submit the solutions

Relationship to Real World?

Small and short-lived programs

- Readability and maintainability less relevant

Guaranteed valid and well-formed input

- No error handling or security concerns

The IOI Series

IOI = International Olympiad in Informatics

- school students

- individual contest

- partial scores for tasks

- a few hours to solve a few problems

- https://ioinformatics.org/

- network of national and regional contests
  - Baltic Olympiad in Informatics
  - British Informatics Olympiad
  - …

ICPC and IEEEXtreme

- university students
- team contest
- pass/fail grading for tasks
- time to submit solutions matters
- https://icpc.global/
- https://ieeextreme.org/

IPSC, Project Euler

- open to everyone
- get input data, submit output
- https://ipsc.ksp.sk/
- https://projecteuler.net/

Obfuscated and Underhanded

- open to everyone
- creative misuse/abuse of C
- https://www.ioccc.org/
- http://www.underhanded-c.org/

Online Judges

- open to everyone

- competition rounds and task archives for practice

- CodeForces: https://codeforces.com/

  - ELO-style ranking

- TopCoder: https://www.topcoder.com/

  - hacking phase
  - other kinds of challenges as well

And More and More…

- Job interviews

- Company promotions

- Machine learning and AI
    - Kaggle: https://www.kaggle.com/competitions
    - Loebner: https://aisb.org.uk/aisb-events/

Thank You!

Questions, comments?

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