Belgian Olympiads in Informatics: The Story of Launching a National Contest

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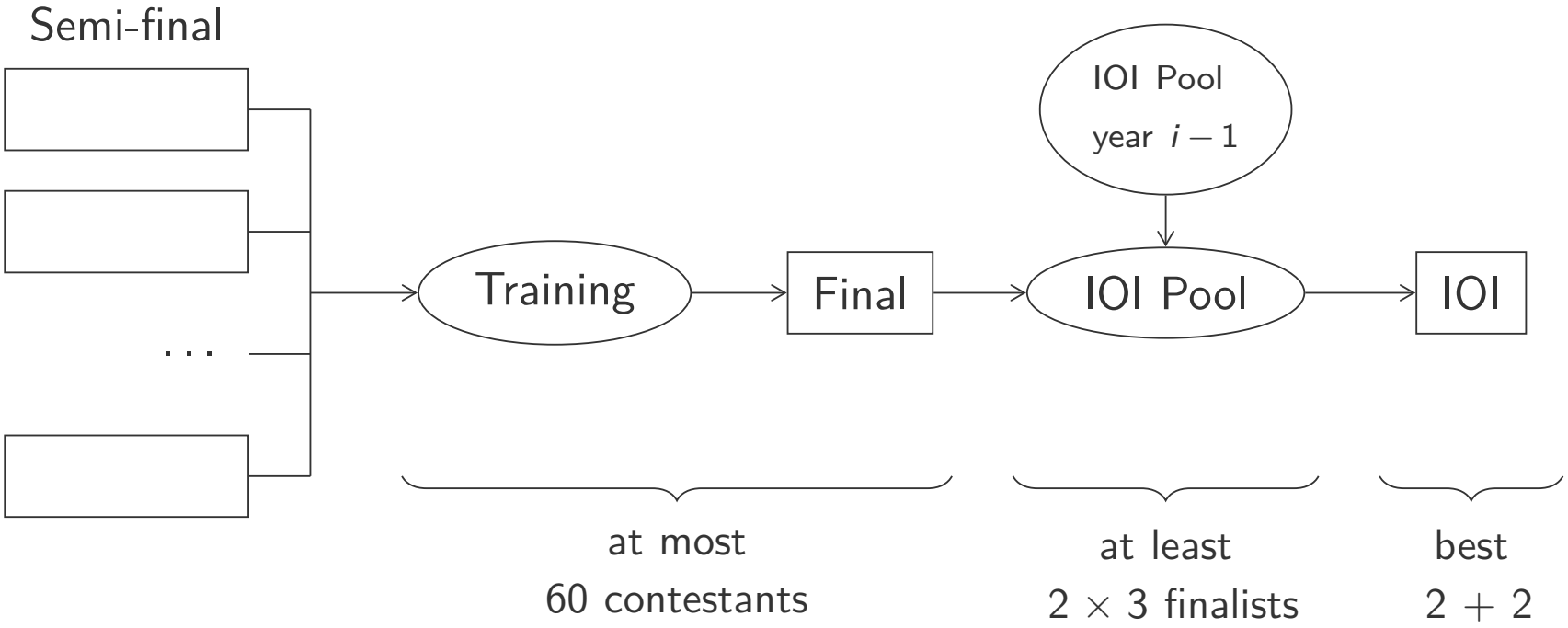
[IOI 2011, Pattaya, Thailand]

Introduction

- Since 1992, first participation of Belgium in 2010
- No (or very few) algorithmic courses in secondary schools
- Belgium has 3 official languages and 3 communities having education as a competence
- First National Olympiad opened to French community in 2010 and extended to all the country in 2011
- Two parallel contests: for secondary and for 1st year higher education

Belgian Olympiads in Informatics (be-OI)
http://www.be-oi.be

Structure of the be-OI Contest



- **Semi-final:** pen-and-paper tasks, delocalized
- **Final:** pen-and-paper and computer tasks, one location

The IOI Pool

- In 2010, the four contestants with best score at the be-OI were selected for IOI
- In 2011, a pool has been created with at least 2×3 finalists:
  - Candidates with good scores for semi-final and final
  - Members of the IOI pool from last year
  - Older and younger candidates

Pen-and-paper Task

- Three main categories:
  - multiple choices questions
  - algorithms to fill
  - short algorithms to write down
- Answers in pseudocode or any authorized programming language (Java, C, C++, Pascal, Python and PHP)
- Competences:
  - understanding code
  - logic
  - notions of complexity

Computer Task

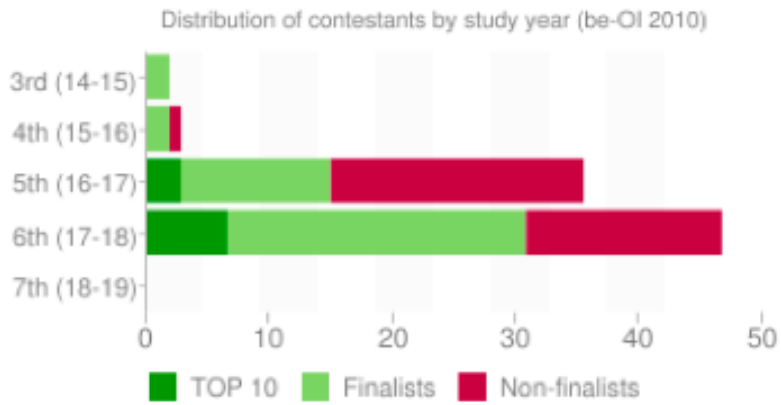
- Programming task with six authorized programming languages
  (Java, C, C++, Pascal, Python and PHP)
- Classical task structure:
  - Context and task description
  - Constraints
  - Inputs and outputs
  - Scoring information
- The contestant should be able to improve his score gradually
- Grading should remain programming language independent

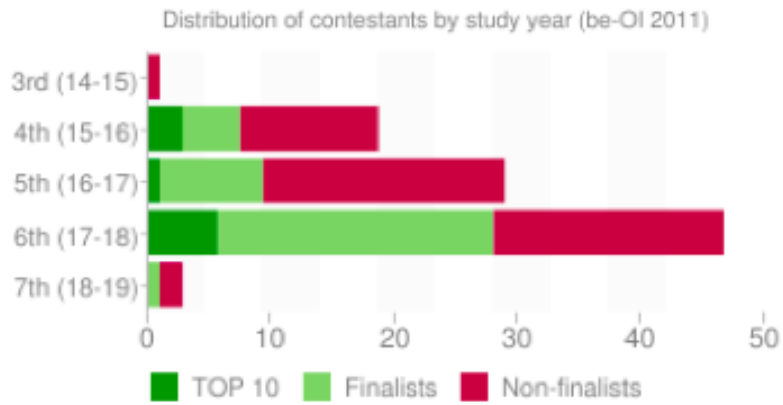
Trainings

- Two days training for finalists to discover a programming language and algorithmic notions
  - **Theory:** Python, time complexity, problem solving, subproblem decomposition and recursion
  - **Practice:** Pen-and-paper and computer tasks solving
- One week training for the IOI pool, theory and practice will small exercises every day
  - C++, GDB, STL
  - data structures and complexity
  - trees, searching and sorting
  - graphs, exploration, backtracking algorithms
  - recursion, dynamic programming, minmax, A^*, B&B
- Coaching of the IOI delegation

Some statistics

- **Contestants:**
  - **2010:** 83 semi-finalists and 43 finalists
  - **2011:** 105 semi-finalists and 49 finalists
- **Study year:**





- **Programming language (2010):**
  - Python 11, PHP 10, C++ 5, Java 3, C 3, Pascal 2, Ruby 1

Conclusion

- The contest has been launched, people starts to become interested and much effort should be placed for the contest
- An online submission and testing system has been developed for he final, and should be opened all the year for training
- More advertising should be made to secondary students and teachers, an idea is to distribute "small games flyers" which should be appealing and should rise interest for the contest