Fedor Tsarev
tsarev@rain.ifmo.ru
St. Petersburg National Research University of IT, Mechanics & Optics
Association for Computing Machinery
International Collegiate Programming Contest (ACM ICPC)

3 students

1 computer

5 hours

8-13 problems
Association for Computing Machinery
International Collegiate Programming Contest (ACM ICPC)

- Since 1979 – 37 championships
- Sponsored by IBM
- Became world championship in early 90-s
- **29479 contestants – 2322 universities – 91 countries**
- Multi-tiered competition:
  - 260 Quarterfinals
  - 30 Semifinals
  - Word Finals (120 teams)
- Medals are given to top 12 teams – 4 gold medals, 4 silver medals and 4 bronze medals
- 5 semifinals and 2 finals per student at most
Russian teams on World Finals

- World champions:
  - 2000 – St Petersburg SU
  - 2001 – St Petersburg SU
  - 2004 – University ITMO
  - 2006 – Saratov SU
  - 2008 – University ITMO
  - 2009 – University ITMO
  - 2012 – University ITMO
  - 2013 – University ITMO
- +more than 10 gold medals
2004, Prague, Czech Republic

- University ITMO – 1-st place
- MIT – 5-th place
- Caltech – 7-th place
- Harvard – 9-th place
2004 World Champions
World champions 2004 and President of Russia Vladimir Putin
2008, Banff, Canada

- University ITMO – 1-st place
- MIT – 2-nd place
- Tsinghua (China) – 6-th place
- Stanford – 7-th place
- All 11 Russian teams are among top 30 teams of the world
World champions 2008 and St. Petersburg governor Valentina Matvienko
ACM Awards 2008
2009, Stockholm, Sweden

- University ITMO – 1-st place
- Tsinghua – 2-nd place
- Oxford – 5-th place
- MIT – 7-th place
- Carnegie Mellon – 8-th place
World Champions 2009 with President of Russia Dmitry Medvedev
ACM Awards 2009
ACM Awards 2009
2012, Warsaw, Poland

- University ITMO – 1-st place
- Harvard – 7-th place
- University of Tokyo – 11-th place
World Champions 2012
World Champions 2012 and President of Russia Vladimir Putin
World Champions 2012 and Vladimir Lenin
University ITMO – 1-st place
Shanghai Jiao Tong – 2-nd place
University of Tokyo – 3-rd place
National Taiwan University – 4-th place
Carnegie Mellon – 11-th place
World Champions 2013
Cooperation with ETH Zurich

- ETH Zurich:
  - 21 Nobel Prizes
  - Never advanced to ACM ICPC World Finals before 2011

- University ITMO:
  - Participates in ACM ICPC World Finals since 1995
  - Four times ACM ICPC World Champions

- World Champions from University ITMO regularly come to ETH Zurich for trainings


- Establishment of Software Engineering and Verification Chair in University ITMO (head – Prof. Bertrand Meyer)

- Davos Informatics camps for high-school students
Research & Conferences

- Bioinformatics, machine learning, genetic algorithms
- Eighth International Conference on Swarm Intelligence (ANTS 2012)
- International Conference on Research in Computational Biology (RECOMB 2013, RECOMB-seq 2013)
- International Conference on Machine Learning and Applications (ICMLA 2011, 2012)
- Workshop on algorithms in bioinformatics (WABI-2013)
Thank you!

Thank you!
• Contest lasts for 5 hours
• Problem set: 8-13 problems
• Problem “Coffee Central” from ACM ICPC World Finals 2011
• Coffee shops are located at some of the intersections
Problem Example

- A person is willing to walk at most $d$ blocks for the morning coffee
- Example: $d = 2$
- Write the program to find the location from which you can reach the maximal number of coffee shops for the morning coffee
Solution for the example – from best location you can reach 3 coffee shops