Introduction to TopCoder

Programming Puzzles and Competitions
CIS 4900 / 5920
Spring 2009
Programming Competitions

- FSU ACM Contest
- ACM ICPC
- TopCoder SRMs
- Google Code Jam
Lecture Outline

• What is TopCoder?
• Types of TopCoder Competitions
  – Algorithms (SRMs)
  – Marathon Matches
  – Software Design, Development
• Registering on TopCoder
What is TopCoder?

• TopCoder is a website that hosts online programming competitions
• Offers a wide variety of competitions, from algorithmic to real-world software development
• Winners receive cash prizes
TopCoder Competitions

- Algorithms
- Marathon Matches
- Software Design
- Software Development
- Several others...
Algorithms:
Single Round Match (SRM)
• Run through TopCoder Arena ("O(n)")
Algorithms:
Single Round Match (SRM)

• Languages allowed
  - C++, Java, C#, Visual Basic
• Match consists of 3 problems, worth 3 different point values
  - 250 point problem
  - 500 point problem
  - 1000 point problem
Algorithms:
Single Round Match (SRM)

- 75 minute coding phase
- 5 minute intermission
- 15 minute challenge phase
Algorithms: Single Round Match (SRM)

- Scoring is based on the total point value of the questions you get right, with a penalty for the number of minutes that you viewed the question before submitting a solution
TopCoder Event Calendar
Algorithms: Single Round Match (SRM)

- Next SRM: Sat., Feb. 7\textsuperscript{th} at 12:00pm
Marathon Matches

- Duration: about two weeks
- Algorithmic problems (more difficult than SRM problems)
- Scoring method varies
  - Sometimes use relative scoring: Score is computed by comparing your program’s runtime to the leader’s
Marathon Matches

- Next Marathon Match: Wed., Feb. 4th at 12:00pm to Wed., Feb. 11th
Software Design, Software Development

- Software engineering competitions to design/develop real software for real companies (e.g. AOL, sometimes Microsoft, many smaller companies)
- Requires more experience than SRMs or Marathon Matches
Some Other TopCoder Contests

• TopCoder Studio (creative design)
  - may involve drawing images using Adobe Photoshop/Illustrator, animations with Flash/Flex, web pages with HTML/CSS, etc.

• AMD Multicore Threadfest (algorithm-oriented)
TopCoder Open 2009

- Begins in February
- Must be 18 or older
- Includes competitions in algorithms, software architecture, assembly, design, development, marathon, etc.
TopCoder Educational Content
Preparing for your interview

Why sweat the small stuff when you can change the world, challenge the status quo, impact millions of peoples’ lives? We’re doing this every day and want to enlist as many people as possible in our quest to do more.

Interviewing tips

- Know what interests you about Google and why you’ve applied.
- Familiarize yourself with Google’s products and services. Research our competitors.
- If you are interviewing for a software engineering or technical role, be ready to answer high-level technical questions on data-structures and algorithms. We would like you to code up your answers on boards with our engineers.
- Familiarize yourself with the job description you are interested in.
- If you are interviewing for a software engineering role then you may first want to visit the website www.tacodler.com. Please launch the ‘Arena’ widget and go to the practice rooms where you can solve problems in the first and second division.
- Ensure you can substantiate anything your CV says – for instance, if you list Java or Haskell as your key programming language, questions about this are fair game and may be asked of you.
Registering on TopCoder

- Go to http://www.topcoder.com/tc:
Registering on TopCoder

• Click on the link in the upper right which says “Register Now”
Registering on TopCoder

- Check (at least) the box that says “on TopCoder”, click submit, and fill out the rest of the form.