BOI 2006 Technical Overview

IMPORTANT: Read and do this first – before the contest begins!

You have a *CD-ROM disk* at your computer. *Boot your computer* with the disk. Booting takes some time, so do it before the contest begins!

When you boot your computer, it shows you a screen where you can choose your keyboard layout. The default is the U.S. key layout. The keyboards at BOI 2006 have a Finnish layout, which you can select from this screen. If your laptop computer does not boot normally, detach its external USB keyboard, and reboot. When the computer has booted up normally, then reattach the keyboard.

Leave the disk in the drive for the whole session. You can reboot your computer during the contest by repeating these steps.

When you have reached the brown screen with the menu at the top and the task bar at the bottom, read these instructions further, and wait for the contest to begin. Good luck!

Shut down

Shut down your computer at the end of the contest session via the menu choices `System - Log Out - Shut down`. *Leave the ejected disk at the computer after the session.* It will be needed again tomorrow! If your computer does not shut down and eject the disk normally, then eject the disk manually and press the power switch for 5 seconds.

Storing files

You can store your files in the following three places:

- The default place is the subdirectory `/mnt` on the local hard disk of your computer. This directory and its contents will remain during the session, even if you reboot your computer. However, they will *disappear after each contest day*. They are *not password protected* either: anyone who boots the computer with the CD-ROM disk can see them.

- The subdirectory `/home/ubuntu` is on the RAM disk of your computer. This directory and its contents will *disappear every time you reboot* your computer!

- The contest server has a backup facility (see below on how to access the server). The maximum size of a file to backup is 128 kilobytes. These backup files are password protected. You can access your backup files via the web after the contest until the end of May 2006 with your username and a password given to you after the last contest day.

Contest Server

You submit your solutions to the contest server via its web interface.

The addresses of the server are `http://sbz-19.cs.helsinki.fi:8080/` and `http://128.214.9.84:8080/`. (No other web addresses can be used during the contests. Trying to use other addresses violates the contest rules.)

Use the username and password in your task envelope to log in, and follow the instructions on the screen. Do not let anyone else know your password, even after the contest sessions! (Otherwise they might for example access your backups…)

The server *accepts* your submission for a task if and only if

- the submitted file compiles without errors *and*

- *either* the compiled code solves the example in the task description correctly

- *or* you check the "accept, even if public testcases fail" box in the user interface of the grading system when submitting the file.

The *last* accepted submission for a task during a contest session is graded. All your other submissions for this contest session are stored and available in the server as well.

Grading may be slow, if many contestants submit at the same time. Be patient! However, if you get a timeout from the browser, then please resubmit after a while. If the grading system is rebooted while you wait, then your current submission will be graded afterwards. The maximum size of each submitted file is 128 kilobytes.

The organizers can post messages to all contestants via the news box at the upper right corner of the grading system page. The news box is refreshed every two minutes. You can also refresh the news box manually by clicking the recycling symbol above it.

Compilation

The languages and compilers used in the competition are given in the following table:

Language	Dialect	Compiler	Command and options
C	ISO C99 (the subset supported by the compiler)	GCC 4.0	`gcc -std=c99` `-O2 -static -lm`
C++	1998 ISO C++ with the `long long int` idiom of ISO C99	GCC 4.0	`g++ -std=c++98` `-O2 -static -lm`
Pascal	Borland Turbo Pascal 7.0	Free Pascal 2.0	`fpc -Mtp -Sg` `-O2 -XS`

Your computer and the grading computer have the same compilers.

Processor speeds

You can estimate the relative speed of the grading computer and your computer using the following table which gives their processor speeds (in GHz) and types:

Grading computer	Hp Compaq desktop	HP Compaq laptop	Compaq Evo desktop
3.00 Pentium 4	3.00 Pentium	1.86 Mobile Pentium	2.53 Pentium

Programming guidelines

- Your program must behave *deterministically:* given the same input, it must produce the same output and use the same amount of time. In particular, avoid using random numbers (or use a constant seed value for their generation).

- In C++, the C-style input/output (`scanf/printf`) can be much faster and take less memory than the `iostream` input/output.

- Make sure that your output is *exactly* as described in task description, including whitespace and line breaks.

- Terminate every line (also the last line) with an end-of-line symbol.

- Output numbers without leading zeroes.

- In C and C++, make sure that your `main` program terminates with the `return 0;` statement.