



Qualification Manual

September 15, 2004

Qualification Instructions

Logging In to the Competition Arena

Log in to the competition arena using the handle and password that you chose during the competition registration process.

Upon logging in, you will receive a message indicating which qualification problem set you have been assigned to work on, and you will then be placed into the Arena “Lobby” area. Move to your assigned competition room as follows:

- ❑ Click on the “Active Contests” menu item.
- ❑ Select whichever problem set you have been assigned to, and select “Enter”.

You may only attempt to qualify once, and with your assigned problem set.

The Competition Room

From within the competition room, you will access the problem statements that have been assigned to you. You will have two problems to solve within the allotted time. The less difficult problem will have a lower point value, while the more difficult will be represented with a higher point value. When you are ready to begin, you may view the problem statement as follows:

- ❑ Click on the drop-down box labeled “Select one”
- ❑ Select the point value of the problem that you would like to work on

Important Note: The timer that records how long it takes for you to complete and submit a given problem will start immediately upon selecting the problem from the drop-down list. *Do not select the problem until you are ready to begin and you fully understand what it is that you are supposed to be doing.*

Once you’ve opened a problem, you will see the Coding Window. This is where you will be solving the problem that is presented to you. **From the point that you’ve selected the first problem, you will have 60 minutes before you will no longer be able to submit any problem.** It is important to keep in mind that the faster you can submit a correct solution to a problem, the higher the score that you will receive for that problem. The problem statement will appear in the top pane of the Coding Window. You will need to choose the programming language with which you wish to solve the problem in the upper right-hand side of the top pane. The default programming language is Java. Read through the problem statement carefully (keeping in mind that the clock is running even while you read the problem statement), as this will spell out exactly what the code you create must do in order for you to receive points. The class name, method name, argument type(s), and return type are specified both in the problem statement text as well as at the top of the Coding Window. Keep in mind that the class declaration and the method declaration both must be declared “public” in order for the automated testing procedure to be able to instantiate your class and call the necessary method. When you first open the problem, the Coding Area (bottom pane) will be empty.

Compiling, Testing and Submitting Code

All code must be written in one of the following four programming languages. It is up to you to decide which language you use to solve the problems.

- ❑ Java (1.4.1)
- ❑ C# (NET Framework version 1.0.3705)
- ❑ Visual Basic (NET Framework version 1.0.3705)
- ❑ C++ (gcc 3.2.2)

You may utilize most of the libraries/utility classes that are commonly included with each language.

A code submission will have a maximum of eight (8) seconds to execute for any given test case. During the automated testing process, if any submission exceeds this execution time for any test case, the submission will be considered incorrect and you will lose all of the points for that submission.

Save will store your current code (as it appears in the Coding Window) on the server. If the Coding Window is closed and then reopened for any reason, the code that was either last saved or last compiled will be retrieved and displayed.

Clear will simply eliminate the current code from the Coding Window. Use Clear with caution and only if you want to start over on a specific problem. ***You will not be able to get your code back after you've selected the Clear option.***

Compile will attempt to compile the code, and return the result of the compilation to you in a window. If the compilation is successful, the window will display a message stating that fact. If the compilation is not successful, the window will display the output of the compilation. Compile will also save the current version of the code on the server, overwriting the code from previous compilations or saves. Be sure that the correct programming language has been chosen before you attempt to compile your code.

Test will allow you to run the latest compiled code with a given set of arguments. Although you may submit any code that has successfully compiled, ***it is highly recommended that you test your code at least once before you submit it.*** The result of a test will be either an error (if the code throws an exception), or the actual value(s) that is (are) returned from the test. It is up to you to determine if the value that is returned by your code is indeed a correct value. In addition, the result of a test will return the execution time of your code submission (for that specific test case). In order to test your code, you may select the input parameters from one of the problem examples, or you may enter custom input parameters. ***Important note: All code submissions must run in under eight (8) seconds for EACH test case. Otherwise, the code submission will be marked as incorrect, and you will not receive any points for that submission.***

Once you click the "Test" button, the arguments window will appear. The easiest way to populate the arguments of a test case is to select one of the examples from the "Select Example" drop-down. Selecting a specific example from this list will populate the arguments to match the

arguments of the corresponding example test case in the problem statement. Keep in mind that even though your code may provide the correct expected result for all of the example cases, it is not necessarily correct. You may need to manually populate the arguments to create a custom test case in order to fully test your code.

NOTE: any standard output (i.e., `System.out.println`) from the execution of your class/method will be returned to you along with the results of your test. This may be useful for debugging your code. It is advantageous for you to comment out these output statements prior to submitting the code, as your submission will run more efficiently without them.

Submit will lock in the most recently compiled code and assign points based on the elapsed time since the problem was first opened. ***The faster you can submit a correct solution to the problem, the more points you will receive.*** Points will be assigned regardless of whether the submission is correct or not. Any points for a submission that turns out to be wrong will be removed when the submission is subjected to the system tests. ***Submit will not necessarily use the code that appears in the coding window. You must compile first before you submit.*** Submissions are final – you may not submit a problem more than once.

Scoring

At the conclusion of the qualification round, all submissions will be run through an automated series of test cases. These test cases will compare an expected result against a received result to determine if the code submission works for each test case. ***Any submission that fails any test case will be deemed incorrect, and will result in a loss of all points for that submission. In addition, any submission that runs longer than eight (8) seconds for any test case will be deemed incorrect, and will result in a loss of all points for that submission.***

If a submission passes all of the test cases, you will keep the points that were assigned to you when you submitted the problem. The participants with the highest 100 point totals for each problem set will qualify, and will be invited to participate in the first elimination round of the Google Code Jam 2004.

If You Have Any Questions

If you have a question during the qualification period about the problem statement or about the functionality of the Arena, please utilize the chat interface in the Arena to present your question to the competition administrators. To do so, simply type the following in the white chat line at the bottom of the applet:

admins: [YOUR QUESTION]

An administrator will respond to your question in the chat area.

Google and TopCoder welcome you to the Google Code Jam 2004.

Best of luck to you in the Arena!