# 2014 Trend Micro Codinsanity Online Judge System FAQ

**Q1:** Is multi-threading supported by the Online Judging System?
**A1:** Multi-threaded programs are NOT supported by the Online Judging System. None of the tasks require a multi-threaded implementation in order to be solved.

**Q2:** When can I log in to the Online Judging System?
**A2:** The Contest Portal will be available for log in 30 minutes before each round of the contest begins. You may remain logged in for 60 minutes after each round of the contest closes. If you would like to save any information about your submissions and results, please do so within this period of time.

**Q3:** What languages are supported by the Online Judging System for Trend Micro Codinsanity 2014?
**A3:** The supported programming languages are **C (C99)**, **C++ (C++98)**, and **Java (GCJ 4.8.1)**. The corresponding compilers used for the supported languages are: **gcc 4.8.1**, **g++ 4.8.1** and **gcj 4.8.1**. The system environment used by the Online Judging System is **32 bit Ubuntu 13.10**.

**Q4:** Will I be able to view my results/rankings after each round of the contest finishes?
**A4:** Yes, you may remain logged in the Contestant Portal for one hour after each round of contest finishes. You may view the results of your submissions and your team's ranking during this time. If you wish to access the ranking information after this time, please visit the Rankings site at:
https://ranking.contest.trendmicro.com/Ranking.html

**Q5:** Is there a limit on the maximum number of submissions allowed for each task?
**A5:** Yes there is. For each task, you are allowed a maximum of five submissions.

**Q6:** Are consecutive submissions allowed?
**A6:** No. There is a ten minutes time interval after submitting a solution during which you cannot submit a new solution.

**Q7:** Are all submissions considered when evaluating the score for a task?
**A7:** Only the final submission is taken into consideration when evaluating the score for a task. In other words, the most recent submission replaces the score of the previous submission, regardless of its correctness. Therefore, try **NOT** to make another submission again after a correct submission unless you are confident that it can improve your score significantly. Keep in mind that only a maximum of five submissions are allowed for each task and there is a time constraint of ten minutes between consecutive submissions.

**Q8:** What happens if I submit a solution before the round closes but the compilation does not complete until after the round closes?
**A8:** As long as you submit the answer before the closing time and answer is correct, then the submission is still counted as valid.

**Q9:** Is it possible to obtain a perfect score? How is the score calculated?
**A9:** The score for a submission is calculated based on three components: accuracy of the solution, the performance (evaluated using the computation time), and the final submission time. The three components are weighted 60%, 10% and 30% respectively. The actual score for each correct submission is calculated according to the following formula:

$$100 * \left\{(0.6) + 0.1 * \left(1 - \frac{t_{execution}}{T_{\max allowed}}\right) + 0.3 * \left(1 - \frac{t_{lastest\_submission}}{T_{per\_round}}\right)\right\}$$

Where:

$t_{execution}$ is the execution time used by the submission to compute the result (to the nearest millisecond).

$T_{\max allowed}$ is the maximum execution time permitted for the task. This may vary for each task.

$t_{lastest\_submission}$ is the timestamp (in milliseconds) for the latest successful submission for the task and is calculated based on the time the round began.

$T_{per\_round}$ is the total time available for the round.

Most teams can expect to receive a score varying from 60 to 99 for a correct submission.

As an example:
Suppose that a round with one task begins at 11:00 am and finishes at 12:00 pm, and the maximum execution time allowed for the task is 30 seconds.

A contestant submits a solution at 11:06 am which required 15 seconds to execute and produce the correct output. The score for the submission is calculated as follows:

1 * 0.6 + (Correctness)
0.1 * (1 - 15/30) + (Execution time)
0.3 * (1 - 6/60) (Submission time)
= 0.92

If the answer was wrong, the score is 0.

**Q10:** What libraries are available for use?
**A10:** We only provide standard libraries for you to link to your code. The exact compilation command line used can be checked on the 'Statement' page for each task.

**Q11:** What kinds of errors will the system display for a submission?
**A11:** For erroneous scenarios, examples of a few common error messages that contestants may encounter are as follows (please note that this is not an exhaustive list):

- Compilation failed
- Output isn't correct
- Execution timed out
- Execution killed with signal 11 (could be triggered by violating memory limits)
- Execution failed because the return code was nonzero

**Q12:** What happens if a submission exceeds the time or memory limitations, or uses a restricted function?
**A12:** If a submission exceeds any of the computation restrictions (execution time, memory), it is terminated by the operating system at the time when the limitation is exceeded.

**Q13:** Can a submission read/write files?
**A13:** Yes, a submitted program is able to read and write files (under the control of the Online Judging System). However, file I/O is not recommended because it may affect the performance of your submission, which, in turn, will affect your overall score.

**Q14:** Are there any isolation/protection mechanisms for submissions on the Online Judging System? Is it possible that a submission from another contestant could use more system resources and affect my submission's performance?
**A14:** The processes responsible for compiling, executing, and evaluating the submissions are single-threaded processes that work on a single submission at a time. Therefore, your submission's performance cannot be affected by other submissions.

**Q15:** The compilation command line for a particular task for Java looks like the following:

```
/bin/mv HelloWorld.java Task.java
/usr/bin/gcj --main=Task -O3 -o HelloWorld Task.java
```

Does that mean I need to submit two Java source files?
**A15:** No, you only need to submit one Java source file. In the example above, you need to submit a Java source named "HelloWorld.java". By design, the Online Judging System needs the Java class which contains the main method to have a class name of 'Task'. When you submit your solution, the Online Judging System renames the file name of your submission to 'Task.java'. However, it does not rename the class name for you. Therefore, make sure that you name your implemented class 'Task' as well.

**Q16:** Why did my Java submission fail to compile and the output indicate that there is an error with the class name?
**A16:** Due to the design of the Online Judging System, the Java class that contains the main method must use 'Task' as its class name. Therefore, if you implement your solution in Java, make sure that the name of your class containing the main method is 'Task'.

**Q17:** Why do the 'Details' for my unsuccessful submission show, "Execution failed because the return code was non-zero"?
**A17:** For C/C++ implementations, make sure that your main function has a return type of 'int' and that your submission returns '0' when the main function successfully exits. For Java implementations, make sure that your submission does not produce/throw any exceptions, or catch all exceptions, and do NOT write to

e.printStackTrace(). This would invoke another thread to perform the message writing. The Online Judging System does not support multi-threading and this would cause another exception which would result in your submission not producing a ‘zero’ return code.