مسابقة الإمارات للتكنولوجيا والابتكار
EMIRATES TECHNOLOGY & INNOVATION COMPETITION

Technical Description

Programming

Competition

Contents

1. **INTRODUCTION**

The programming contest is a great opportunity for UAE students that would like to major in or currently majoring in computer science, computer engineering, management information systems, information technology, or any IT related subjects to demonstrate their skills in problem solving and programming. During this contest, group of students from different institutions in the UAE will compete against each other and try to solve the maximum number of problems in the shortest period of time. Members of the same group will collaborate to analyze the problems, propose solutions and implement them.

2. **OBJECTIVES**

2.1. **For the Participants:**
- To compete with other students from different institutions.
- To acquire valuable experience in problem solving.
- To compete for valuable prizes.
- To be recognized by potential employers.
- To attend, free of charge, trainings on the use of PC^2, the judging tool used during the competition.
- Develop programming and team working skills

2.2. **For Institutes:**
- To promote their IT programs and particularly those in software and computer engineering.
- To gain visibility.

2.3. **For IT related Companies:**
- To recognize and recruit potential employees.

2.4. **For Emirates skills:**
- To contribute on identifying outstanding students.
- To facilitate the networking and collaboration among institutes and companies.

3. COMPETENCY SPECIFICATION

The contest will run for two days where the first day will last for five hours and the second will last for three hours. Students compete in teams against other teams from same or other institutions. Each team is made of three students who pass the eligibility rules for the specific year. Each team has to solve a set of problems that will be given during the two days of the contest and this will be done using one computer per team. Solutions involve writing programs using C, C++, or JAVA. Team solutions' are run against a sample test data and then the output will be compared to that of a Judges' program output. Teams are ranked based on the number of problems they managed to solve and the penalties they accumulated. Penalties reflect the time taken to solve a problem and the number of failed attempts. Contestants may bring reference materials such as books and manuals; but neither machine-readable versions nor electronic devices are allowed.

4. RULES & REGULATIONS

4.1. Teams
- Teams must register before the deadline.
- Only school, college, and undergraduate students are allowed to participate in the contest. A team will be disqualified if the judging committee discovers that one of its members have violated the rules.
- Each team can register up to two members.
- Each team must adopt a name and have a coach.
- Teams should arrive to the contest venue on the day of the competition one hour before the contest starts in order to register.

4.2. The Competition
- The main language of the contest is English and all the provided systems and materials are in English.
- The contest lasts for two days: the first day lasts for five hours and the second day for three hours. Contestants should not leave the competition during the contest time.

- Each team should solve as many problems as possible from the set of problems given during the two days.

- Each team will be assigned only one computer

- Each team can write programs in JAVA, C or C++.

- Contestants may bring published reference books only, except for e-books in either paper or electronic format; Manuals, listings and any hand written material are not allowed in the contest room.

- The use of Internet is not allowed.

- Machine-readable versions/devices (computers, pocket calculators, mobile phones, CDs, flash memories, floppy disks …) are not allowed in the contest hall.

- Students are not allowed to rebooting computers under any circumstances during the contest. Any technical problems should be reported to the judging committee.

- Solutions are judged by running them using PC^2.

- The contest judges are solely responsible for determining the correctness of the submitted solutions; their decision is final.

- Teams are ranked according to the number of problems solved and the duration it took the team to solve them. Teams who solve the same number of problems are ranked by least total submission time.

- There is a penalty for any wrong submission. The penalty consists of adding twenty minutes to the total submission time. The penalties are cancelled if the problem is not solved by the team. Penalties are applied only if the problem is eventually correctly solved.

- Printers are provided in the contest room. A team requiring a printout of their source code should ask helpers to collect their listing from the printers.

- Contestants requiring any kind of help should remain seated while being assisted by a contest staff.

- Any team attempting to communicate with other teams, to tamper with the machines, or disrupt the contest environment in any way will be disqualified.

4.3.General Rules

- The organizing committee has the right to update these regulations as it sees suitable. Participants are not allowed to complain about these regulations. It is the contestant responsibility to check the contest's website for any updates regarding the competition.
- Any team attempting to communicate with another team, to tamper with the machines, or disrupt the contest environment in any way will be disqualified.
- The participants shall agree to allow the organisers to publish their names as well as photos and videos in which they appear.
- No visitors will be allowed in the competition room.

4. CONTEST ENVIROMENT

- The contest operating system environment is Microsoft Windows 7.
- The programming languages will be C, C++, and JAVA.
- For judging and clarifications, we'll be using PC^2 (*P*rogramming *C*ontest *C*ontrol system www.ecs.csus.edu/pc2/) Version 9.2 or later.
- For development in the contest, we will provide the gcc compiler, g++ and gdb debugger from the MinGW environment, javac and java from the Java Development Kit Standard Edition Version 5.0 or later.
- Contestants who choose to use these IDEs must be aware, however, that submitted code MUST compile correctly with gcc or with javac!**.**
- We will provide the following IDEs:
    - o Eclipse 3.2.1 or later
    - o Microsoft Visual C++ 2010
    - o NetBeans 6.1 or later
    - o Code::Blocks 8.02 (or higher) with GCC and GDB debugger from MinGW
    - o Dev-C++

5. TRAINING

- To be trained you have to practice solving some problems. An excellent site for problems is http://acm.uva.es/problemset.

- University of Valladolid has a contest site with an enormous problems archive. You can even send your answers to the online Judge for evaluation. Check http://online-judge.uva.es/problemset/

We recommend practicing from the book: *Programming Challenges: The Programming Contest Training Manual*. http://www.programming-challenges.com/pg.php?