

## Computer Programming

### 1. General information about the category:

The goal of the category is to test participants in computer programming field. You need to have ability to implement various algorithms with data structures and solve challenging problems. The range and systems can be broad beginning with desktop applications and going up-to mobile apps by using different platforms as Windows, Linux and MacOS X. You may use any programming language (or scripting languages) you wish as C++, C#, Java, Pascal, ASP, ASP.NET, PHP etc. It is crucial that an application has a usability and a proper easy-to-use interface as well as a functionality. But of course, none of these matter if the key element is missing a good idea

**NOTE: The competition will consist of two stages each of which weights 50% (stages percentages subject to change):**

### 2. Project Evaluation and Grading:

#### Stage - I

In the first stage, the competitors will present their projects on their computers. During the presentation, juries might ask specific and general questions regarding their project. Competitors can take 50% (*percentage subject to change*) of the total points based on the certain criteria.

General duration for the project presentation: 10 minutes (juries of the category can change as they wish, please ask juries for the exact timings)

#### Stage - II

In the second stage, the competitors will have an exam about solving some problems using basic programming knowledge. They will do it practically on their computer. All participants must have their own personal computers. During the exam, the internet will be turned off, but books will be

open. At this stage, competitors can take 50% (*percentage subject to change*) of the total points. These two stages' points will be added, and the competitor's final score will be determined.

The exam will consist about 10 questions: **3 easy, 4 intermediate** and **3 hard problems**.

In case if some participant from some team got higher than 90 points out of 100 in the second phase of the competition, but his/her team won bronze or silver, he/she will get gold medal, but the team's medal will remain to be bronze or silver.

Here are some sample questions which you can expect to see in the second stage of the competition:

**Easy:**

Write a program that prints a multiplication table for numbers up to 12.

**Intermediate:**

Write a function that tests whether a string is a palindrome

**Hard:**

Write a function that multiplies two matrices together.

**IMPORTANT NOTES:**

1. Participants must bring their personal computers for the Stage-II