

# PUZZLESCON Rule Book

Puzzles

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## Abstract

This rule book provides specifications for organizing programming contests. The rule book is a guidance for setting contests, determining levels, calculating scores, enumerating ranks.

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## 1 General Information

All contests are organized by Puzzles and based on Virtual Judge platform. In order to participate any contest, please register your account at Virtual Judge platform:

<http://vjudge.net/>

If you want to receive our contest reminder, please send your email address to

[amy.theia.knuth@gmail.com](mailto:amy.theia.knuth@gmail.com)

Currently, only Puzzles members are ranked. The anniversary of the PUZZLESCON is **the second Friday of October**.

## 2 League

### 2.1 Bronze league

- **Period:** 2 weeks
- **Entry requirement:** None
- **Support languages:** C, C++, Java
- **Number of problems:** 4
- **Duration:** 3 hours

### 2.2 Silver league

- **Period:** 3 weeks
- **Entry requirement:** Participated in **2** Bronze league in recent **8** weeks.
- **Support languages:** C, C++, Java
- **Number of problems:** 5
- **Duration:** 4 hours

### 2.3 Golden league

- **Period:** 4 weeks
- **Entry requirement:** Participated in **3** Silver league in recent **24** weeks.
- **Support languages:** C, C++, Java
- **Number of problems:** 7
- **Duration:** 5 hours

### 2.4 Season league

- **Period:** 12 weeks
- **Entry requirement:** Participated **all** Golden leagues / **all** Silver leagues / **all** Bronze leagues in past **12** weeks.
- **Support languages:** C, C++, Java
- **Number of problems:** 8
- **Duration:** 5 hours

### 2.5 ACM/ICPC team selection league

- **Period:** 24 weeks
- **Entry requirement:** None
- **Support languages:** C, C++, Java
- **Number of problems:** 10
- **Duration:** 5 hours

### 3 Score

Score of a particular contest depends on participant's performance. Only top 20 participants are awarded scores. Participant  $p$ 's scores is calculated as:

$$\text{score}_p = \sum_{i \in \text{accepted answers}} d_i(20 - \text{rank}_p + 1)$$

If the contest has  $n < 10$  participants, then the score is calculated as:

$$\text{score}_p = \sum_{i \in \text{accepted answers}} d_i(n - \text{rank}_p + 1)$$

where  $d_i$  is the difficulty of problem  $i$ . All problems are classified as Easy, Medium, Hard and  $d_{\text{easy}} = 1$ ,  $d_{\text{medium}} = 2$ ,  $d_{\text{hard}} = 3$ . Difficulty of each problem is identified by Organizing Committee.

- Master Score is calculated based on records of Golden and Season league.
- Coder Score is calculated based on records of Silver league.
- Apprentice is calculated based on records of Bronze league.
- *ACM/ICPC Team Selection League is not considered for score calculation.*

### 4 Ranking

The sorting priority of scores is: Master Score > Coder Score > Apprentice Score.

### 5 Level

The leveling is conducted after **every Season league**. Leveling will be conducted still based on time schedule if there is no Season league at that particular season. The leveling will not be conducted when total number of participants is less than 10.

#### 5.1 Master

Top 10% participants on ranking page are selected as Master. Participant who is selected as Master will receive a badge and a T-shirt.

#### 5.2 Coder

Top 30% participants on ranking page are selected as Coder. Participant who is selected as Coder will receive a badge and a T-shirt.

#### 5.3 Apprentice

The rest participants on ranking page are selected as Apprentice.

#### 5.4 Grand Master

Grand Master is an honorable title which goes to the top participant of past year's season leagues according to the scoreboard solely. The result is announced on every anniversary annually.

## 6 Organizing Committee

The members of Organizing Committee (OC) are appointed by Puzzles on anniversary annually. OC manages all related activities of PUZZLESCon.

Dr. Liew is acting as General chair of the committee. **2** third year students, **3** second year students and **2** first year students are acting as members of the committee. General chair can only offer advice and supervise OC. Any decision has to reach **5 votes and above** for being granted.

Any decision from OC is final. Appealing will be considered if there is plausible evidence.

## 7 Prize

The prize is set to every Golden league and Season league. And only top 3 participants are awarded.