

Instructions

1. There are 4 problem statements each carrying 100 points.
2. The time limit is 120 minutes
3. The solutions need to be submitted in C, C++ or Java only.
4. The following marking scheme will be used for evaluation:

Marking Scheme

- Input source code will be considered as a long string (length n) and will be broken into non overlapping substrings of length 13 each and last substring of length $n \bmod 13$.
- Score of a substring will be calculated using the function *foo1*.

```
Function foo1(string s) w = [-6,-5,-4,-3,-2,-1,0,1,2,3,4,5,6] substring_score = 0
for i = 1..(s.length) substring_score
+= ascii(s[i]) * w[i]
return substring_score
```

- Function *foo2* computes the score for all the substrings in the program P.

```
Function foo2(Program P) substrings =
[all substrings of P]
total_score = 0 for i =
1..substrings.size total_score +=
foo1(substrings[i])
return total_score
```

- Function *finalscore* computes the final score of the problem out of 100 $sum(P) :- 3 * 122 * P.length;$
-

```

Function final(Program P)
    total_score = foo2(P)
    fractional_score = total_score/sum(P)
    final_score = 100*fractional_score
    return final_score

```

Example :

```

code = """ int i = 10;
        i = 1;
        """

```

2 substrings are :

- {'i', 'n', 't', ' ', 'i', ' ', '=', ' ', '1', '0', ';', '\n', 'i'}
- {' ', '=', ' ', '1', ';'}

ascii('i') = 105	ascii('n') = 110
ascii('t') = 116	ascii(' ') = 32
ascii('=') = 61	ascii('1') = 49
ascii('0') = 48	ascii(';') = 59
ascii('\n') = 13	

Score of substring 1 :

$$\begin{aligned}
 \text{total_score} &= 105 * (-6) + 110 * (-5) + 116 * (-4) \\
 &+ 32 * (-3) + 105 * (-2) + 32 * (-1) + 61 * (0) + \\
 &32 * (1) + 49 * (2) + 48 * (3) + 59 * (4) + 13 * \\
 &(5) + 105 * (6) = \underline{-777}
 \end{aligned}$$

$$\text{final_score} = -777 / (3 * 122 * 18) * 100 = \underline{-11.79}$$

NOTE : Space/Tab as well as Newline character will be included for score computation. You may get negative scores for submission as well therefore be very careful before submitting.

RANKING ORDER : Preference given to total points scored, if equal then number of problems solved and if equal then total attempts made.