

## **CENG 113 – Programming Basics Homework #1**

### **GUESS GAME**

Take two positive numbers from the player: ***begin*** and ***end***.

Generate a random number, ***target*** in ***[begin, end]***.

The game starts with a score, ***S*** = 100 and consists of different rounds.

In each round,

- Display “The ***target*** is in ***[begin, end]***. You have ***N*** guesses...” on console.
- Get ***N*** guesses from player, where ***N*** is 20% of the range size (***end-begin***). This means that more guesses are allowed for larger ranges and vice versa.
- For each wrong guess, take 5 points off from score ***S*** and display “Wrong guess!” on console.
- If any of the ***N*** guesses is equal to ***target*** value, display “Right guess! Score: ***S***” and finish the game.
- Otherwise, reduce the range to half which contains the ***target***.

Repeat the steps above until either the player doesn't have any guesses (***N*** < 1) or run out of score (***S*** ≤ 0). In any of these cases, display “You lost! The target was ***target***.” and finish the game.

#### **IMPORTANT NOTE:**

Be careful about invalid inputs: All inputs must be numeric, ***end*** must be greater than ***begin***, and each ***guess*** must be in the specified range. Ask each question **over and over again** until a valid input is entered, but do not decrease the ***score*** or ***N*** for invalid inputs.

#### **ASSIGNMENT RULES:**

- Collaboration is **NOT** allowed.
- Any cheating will be **graded as 0**.
- Late submissions will **NOT** be accepted.
- Add **comments** to make your code understandable.
- You should submit **only a Python file** named as “***studentID\_hw1.py***”.

## SAMPLE PROGRAMS:

```
Begin? 0
End? 20

Target is in [0, 20]
You have 4 guesses...

5
Wrong guess!
4
Wrong guess!
3
Wrong guess!
2
Wrong guess!

Target is in [10, 20]
You have 2 guesses...

11
Wrong guess!
12
Wrong guess!

Target is in [10, 15]
You have 1 guesses...

14
Wrong guess!
You lost! The target was 13.
```

```
Begin? asd
Enter a numeric value for begin: 20
End? 10
Enter a value greater than begin: 40

Target is in [20, 40]
You have 4 guesses...

21
Wrong guess!
22
Wrong guess!
asdf
Enter a numeric value:
15
Enter a value in specified range:
23
Wrong guess!
24
Wrong guess!

Target is in [20, 30]
You have 2 guesses...

32
Enter a value in specified range:
25
Right guess! Score: 80
```