Homework assignment 01

Complete the following 3 programs for this week's homework.

Programming assignments

Guess the number (30 points)

- Write a program that generates a random number between 0 and 9 and then asks the user to guess a number between 0 and 9 and displays whether the guess is higher, lower or exactly the guessed number.

Example output:

```
Guess a number between 0 and 9: 7
Too high. Number was 4
```

- Note: do not use loops for this problem. Just one guess at a time

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Rock, Paper, Scissors (40 points)

- Write a program to play Rock, Paper, Scissors. (https://en.wikipedia.org/wiki/Rock-paper-scissors). The outcome is as follows:
    - Rock crushes scissors -> Rock wins
    - Paper covers rock -> Paper wins
    - Scissors cuts paper -> Scissors win
    - If the same is chosen by player and computer, it's a draw.

- Have the program randomly generate a number of 0, 1, or 2 to represent Rock, Paper, Scissors.
- Have the program then prompt the user to enter a 0, 1, or 2 and then display a message of who won.

example output:

```
Choose your weapon: rock(0), paper(1), scissors(2): 0
Rock crushes scissors. You Win!
```

RaNd0m password generator (30 points)

- Write a program to generate a pseudo-random password of 6 characters based on the following rules:
    - 1st character is a lowercase letter
    - 2nd character is a number 0-9
    - 3rd character is an uppercase letter
    - 4th character is a lowercase letter
    - 5th character is a number 0-9
    - 6th character is a number 0-9

Example output:

```
Generated password: h8Re62
```

-Note: do not use loops in this assignment.

Grading

Does the program compile? If it doesn't, you will get 0 points for that problem.

Is the program properly documented? (*worth ~20% of the problem*)
Proper documentation includes:

- preamble with the name of the author, date of creation and brief description of the program.
- comments inside the code describing what the code does, especially for sections that may be unclear.
- appropriate formatting, indentation and use of white space to make the code readable.
- variables names are properly chosen and descriptive.

Remember that the code is read by humans and it should be easy to read for people who were not involved in its development.

Is the program well written? (*worth ~30% of the problem*) Programs should be written as clearly and simply as possible to perform the necessary tasks. Variables should be well named and use the appropriate types. User prompts should have easy-to-follow instructions.

Is the program correct? (*worth ~50% of the problem*), Make sure that your program produces results as specificed above.

How to submit

Homework should be submitted through NYU Classes. It should be submitted by 11:55pm on the day listed on the course website or it will marked as late.

To submit homework, upload a single zip file of the 3 java class files (ex. GuessTheNumber.java, RockPaperScissors.java, PasswordGenerator.java) to the NYU Classes site.