

CSIS 3280 Lab 02-002: Simple Passcode Guessing Game App

Make sure that you:

- Download the lab template from the blackboard
- Extract it
- Rename the files/folders according to the lab submission guideline checklist, and
- Complete the task.

Introduction

In this lab, you will create a simple user vs computer passcode game application. You need to code the functions in the `inc/passcode.inc.php` file and the game control logic in the main `php` file.

There are two players in the game: a user and a computer. The game will randomly select a series of numbers whose length is determined at the beginning of the game for both the user and the computer. The game needs to prompt the user to guess a number and generate a random number from the computer; then handle the guesses, print the masked numbers and game status while the turns/tries is still available. The number of turns/tries is calculated as follow. If the `$passcodeLength` is less than 3 then `$tries` is equal to three times of `$passcodeLength`; otherwise it should be capped at ten.

Requirement

1. All the functions need to be coded in `inc/passcode.inc.php` file
2. The game is initiated by asking the user about the length of the passcode for the game session. A function called `initiateGame()` is passed by reference the variable that stores the passcode length, print the game header and return the number of tries.
3. In order to make the game more interesting, you must not generate a passcode where one of the digit is repeated more than twice. For example, for a five digits passcode, the passcode 78180 is valid while 13511 is not valid.
4. The masked passcodes is to be printed in either * (not guessed ones) and digit (correctly guessed ones)
5. Each time a user guess a number (and subsequently the computer randomly chooses a number), the number of tries is reduced. If the number of tries is zero, the app prints "Sorry, out of tries" and exit.
6. When the app check the game status:
 - a. If the user won against the computer, the app should print "You won against the computer. You're a wizard!" and exit.
 - b. If you draw, the app should print "You draw with the computer. Cool!" and exit
 - c. Otherwise, the app will print "Sorry you lost!" and exit. Note – If you lost against the computer after 10 guesses, I guess you need to review your basic math 😊
7. You need to maintain two arrays (`$passcode1` and `$passcode2`) to keep track of guessed passcodes of both the user and the computer. These arrays should be used to check the progress of the game
8. You must pass the arrays (`$passcode1` and `$passcode2`) by reference to any function
9. You cannot modify the functions's signature provided in the `inc/passcode.inc.php` file – see below for the functions' purpose

Functions

generatePasscodes() – It uses the variable `$passcodeLength` to randomly generate two series of digits. Any digit in these passcodes should not repeat more than twice, e.g., passcode 13135 is valid but 03330 is not valid. The two generated passcodes should be returned as an array.

initiateGame() – Print the game header, prompt the user for the length of passcode for the game, calculate the number of tries and return the value of the number of tries.

createArrays() – Construct two arrays, i.e., \$passcode1 and \$passcode2, and return them to the main file. See hint below.

printMasked() – Prints the masked version of the passcode that was passed by reference

handleGuess() – Prompt the user for a guess, check the correctness of the guess and print the masked passcode. It will also generate a random number for the computer, check the correctness of the guess and print the masked passcode. In order to print the masked passcodes, you must use the printMasked() function

checkStatus() – Checks the status of the game, prints the corresponding completion message and exit the game if necessary

Hints

- The \$passcode1 and \$passcode2 array are the most important part of this program. You should think carefully on how to create these arrays. You may use any type of flag or status to keep track whichever digits have been guessed correctly by either the user or the computer
- The createArrays() function return the above created arrays. You should think how to return these arrays to the main file. You may use the list construct to handle this.
- Plan carefully about the data structure (the arrays), the logic and the functions before you start coding.

Figures

```
=====
Two players passcode guessing game by Bambang
=====
Enter the length of the passcode for the game session: 5

Guess the following passcode : *****
Computer will guess the following passcode: *****

Please enter a guess: 1
Your challenge passcode: 1*1**

Computer guess: 6
Computer's challenge passcode: **6**

You have 9 chances left!
Please enter a guess: 9
Your challenge passcode: 1*19*

Computer guess: 7
Computer's challenge passcode: **67*

You have 8 chances left!
Please enter a guess: 2
Your challenge passcode: 1*192

Computer guess: 9
Computer's challenge passcode: **67*

You have 7 chances left!
Please enter a guess: 5
Your challenge passcode: 1*192

Computer guess: 5
Computer's challenge passcode: **67*

You have 6 chances left!
Please enter a guess: 3
Your challenge passcode: 13192

Computer guess: 8
Computer's challenge passcode: 8*67*
You won against the computer. You're a wizzard!
```

```

=====
Two players passcode guessing game by Bambang
=====
Enter the length of the passcode for the game session: 3

Guess the following passcode : ***
Computer will guess the following passcode: ***

Please enter a guess: 1
Your challenge passcode: ***

Computer guess: 3
Computer's challenge passcode: *3*

You have 8 chances left!
Please enter a guess: 2
Your challenge passcode: ***

Computer guess: 0
Computer's challenge passcode: *30

You have 7 chances left!
Please enter a guess: 4
Your challenge passcode: **4

Computer guess: 2
Computer's challenge passcode: *30

You have 6 chances left!
Please enter a guess: 7
Your challenge passcode: **4

Computer guess: 7
Computer's challenge passcode: *30

You have 5 chances left!
Please enter a guess: 3
Your challenge passcode: 3*4

Computer guess: 4
Computer's challenge passcode: 430
Sorry you lost!

```

```

=====
Two players passcode guessing game by Bambang
=====
Enter the length of the passcode for the game session: 1

Guess the following passcode : *
Computer will guess the following passcode: *

Please enter a guess: 1
Your challenge passcode: *

Computer guess: 3
Computer's challenge passcode: *

You have 2 chances left!
Please enter a guess: 2
Your challenge passcode: *

Computer guess: 0
Computer's challenge passcode: *

You have 1 chances left!
Please enter a guess: 3
Your challenge passcode: 3

Computer guess: 4
Computer's challenge passcode: 4
You draw with the computer. Cool!

```

LAB/ASSIGNMENT PRE-SUBMISSION CHECKLIST

- Did you follow the naming convention for your files?!
- Did you follow the naming convention for your folder?!
- Does your submission work on your computer?!
- Double check **before** submitting

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