

Lab Test 1 - Specification

Lab Test 1 - 17/10/2023

Class Group: TU856 / TU858

Worth: 10% of the overall mark for the module

Time allowed: 1h 50m (It must be submitted on Brightspace by 17:55)

Attendance sheet: You **must sign** the attendance sheet before leaving the lab room. Submissions will only be corrected if you have signed it.

Open book test

This is an open book test but **you are only allowed to use lecture notes and your OWN previous lab examples and notes**. You **can't use the internet**, email or your phone!

Submission

Please submit your solution (Python file) via Brightspace. It is your responsibility to make sure you've uploaded the correct file as changes after the test has finished won't be accepted.

Marking Scheme

- The task will be evaluated based on whether the output is correct, use of functions, layout and use of comments.
- Indentation and white space have to be used appropriately.
- Code should be easy to read, and naming conventions should be adopted.
- Ensure that variable names are informative while appropriate and meaningful comments (including docstrings) are placed.
- The code should work without issue when run on the lecturer's machine.

Plagiarism

Plagiarism will result in a zero mark (0%). You should make yourself familiar with the plagiarism policy of Technological University Dublin. **You might be contacted by the lecturer to demo your code if the submission is believed to contain suspected plagiarism.**

Lab Test 1 - Description of the task

In a challenging deductive logic game known as "Conundrum Code" your objective is to determine a concealed three-digit code by interpreting hints provided after each attempt.

As you make your guesses, the game will provide feedback in the form of "Off-target" to indicate that one of your digits is correct but in the wrong position, "Bullseye" to indicate that you've got a digit correctly placed, or "Null" if you got a wrong digit. You'll have a total of N attempts to uncover the secret number.

Here is an example output (green values are user inputs):

```
Welcome to 'Conundrum Code'. Try to guess the three digit number.

Here are some clues:
When I say 'Off-target' that means one of your digits is correct but
in the wrong position.
When I say 'Bullseye' that means one of your digits is correct but
in the right position.
When I say 'Null' that means one of your digits is incorrect.

Guess a number: 123
Null Null Null
Guess a number: 456
Null Off-target Null
Guess a number: 785
Bullseye Null Bullseye
Guess a number: 795
You got it!
Do you want to play again? (y/n) n
Thank you for playing
```

Part 1 (15%)

Generate the three digit secret code. You can use the `randint` function from the `random` module to generate integer values. For example: `random.randint(1, 100)` returns an integer between 1 and 100 (inclusive). Attention: a three digit value can also have leading zeros, for example: 001.

Part 2 (20%)

Implement a function to get the three digit value from the user. The function should check whether the input consists of 3 digits, and if not, ask the user for another input.

Part 3 (25%)

Implement a function with two parameters: the secret code and the user guess. The function should print the corresponding tips for each digit.

Part 4: (25%)

Check if the user has won, lost (max number of guesses reached) or iterates to get another guess.

Part 5: (15%)

Add a restart option asking if the user wants to play again whenever the game ends.