



Project 1

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Data 2

Programming

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GUESS THE NUMBER



Introduction

This is the report from the first project of the programming course in which we have to create a program. The program presented in this project is a game where the user has to guess a number, or viceversa, the computer guesses a number from the user.

Functions

This program has two functions named `userGuess` and `computerGuess`.

`userGuess`: This function is used to guess a random number from the computer.

```
3
4 def userGuess(x): #this function is used to guess a random number from the computer
5     randomNumber = random.randint(1, x)
6     guess = 0
7     while guess != randomNumber: #if the user hasn't guess the number, it enters a while loop
8         guess = int(input(f"Guess a number between between 1 and {x} \n"))
9         if guess < randomNumber: #if the user inputs a number that is low compared to the random number,
10             print("Looks like this number is too low. Try again :)")
11         elif guess > randomNumber: ##if the user inputs a number that is high compared to the random num
12             print("Looks like this number is too high. Try again :)")
13         print("This is the right number! Well done <3") #if the user guesses the number correctly, then the
14
```

`computerGuess`: This function is used to guess a random number from the user.

```
15 def computerGuess(x): #this function is used to guess a random number from the user
16     print('Please, think about a number between 1 and 30...')
17     And do not change it while playing this round T-T'''
18     low = 1
19     high = x
20     feedback = ""
21     while feedback != "c": #if the feedback is not equal to c (correct), then the program keeps running
22         if low != high:
23             guess = random.randint([low, high])
24         else:
25             guess = high
26         feedback = input(f"Is {guess} too high (H), too low (L) or correct (C)? \n").lower()
27         if feedback == "h":
28             high == guess - 1
29         elif feedback == "l":
30             low == guess + 1
31         print(f'''Your number is {guess}, right?
32         Looks like I have guessed the number ~^o^~''')
```



Program:

```
guessTheNumber.py > ...
1  #This program is a game where you can play to guess the number with the computer.
2  import random #to generate random numbers
3
4  def userGuess(x): #this function is used to guess a random number from the computer
5      randomNumber = random.randint(1, x)
6      guess = 0
7      while guess != randomNumber: #if the user hasn't guess the number, it enters a while loop
8          guess = int(input(f"Guess a number between between 1 and {x} \n"))
9          if guess < randomNumber: #if the user inputs a number that is low compared to the random number,
10             print("Looks like this number is too low. Try again :(")
11             elif guess > randomNumber: ##if the user inputs a number that is high compared to the random num
12                 print("Looks like this number is too high. Try again :(")
13             print("This is the right number! Well done <3") #if the user guesses the number correctly, then the
14
15 def computerGuess(x): #this function is used to guess a random number from the user
16     print(f'''Please, think about a number between 1 and {x}...
17 And do not change it while playing this round T-T''')
18     low = 1
19     high = x
20     feedback = ""
21     while feedback != "c": #if the feedback is not equal to c (correct), then the program keeps running
22         if low != high:
23             guess = random.randint (low, high)
24         else:
25             guess = high
26         feedback = input(f"Is {guess} too high (H), too low (L) or correct (C)? \n").lower()
27         if feedback == "h":
28             high == guess - 1
29         elif feedback == "l":
30             low == guess + 1
```



In this photo, both functions can be seen. The first is the one made for the user to guess the number. First, I declared randomNumber with the random generator, and I made guess 0 (this is the variable that saves the input number from the user). Then I created a while loop that will run as long as the guess is not equal to the randomNumber. Then, the loop starts by taking the input number from the user and saving it in the guess variable. If the user inputs a number that is low compared to the random number, it prints the message in the next line; else, if the user inputs a number that is high compared to the random number, it prints the message in the next line. Once the guess is equal to randomNumber, then the loop breaks and prints the next line.

Then the second function is declared, which is the one that guesses the number from the user. First, the instruction is printed. Secondly, three variables are declared: low, high, and feedback. While feedback is not equal to "c" (correct), the while loop starts. If low is not equal to high, then the guess is a randomNumber between 1



(low) and a determinate number (high). Then, we can ask the user if the printed number is too low, too high, or correct. If the user inputs "l" (low), the program should reduce the search, and the same if the input is "h" (high).



```
30         low == guess + 1
31     print(f'''Your number is {guess}, right?
32     Looks like I have guessed the number ~^o^~''')
33
34
35     otherRound = "Y"
36     print("Hello! Welcome to 'Guess the number' \^o^/")
37     userName = str(input("Please write your name ~^o^~: "))
38     while otherRound == "Y": #a loop to keep playing the game for a undetermined number of rounds.
39         guesser = int(input(f'''Nice to meet you, {userName} \^o^/
40         Who guesses in this round?
41         1. You guess the number.
42         2. I guess the number \n'''))
43         if guesser == 1:
44             userGuess(30)
45             otherRound = input("Do you want to play again? (Y/N): ").upper()
46         elif guesser == 2:
47             computerGuess(30)
48             otherRound = input("Do you want to play again? (Y/N): ").upper()
49         else:
50             print("Looks like you have chosen an invalid option T-T")
51             otherRound = input("Do you want to try again? (Y/N): ").upper()
52     print(f'''Thank you for playing this game \^o^/
53     I had a lot of fun while playing with you!
54     Hope to see you soon
55
56
57     |_____| |_____|
58     |_____| |_____|
59     |  |  |  |  |  |
60     |  |  |  |  |  |
61     |  |  |  |  |  |
62     |  |  |  |  |  |
63
64     Bye, bye!! <3''')
```

But if the user inputs "c" (correct), then the loop will break and the message will be printed.

Once the functions are declared, the program is designed. First, the variable otherRound is declared with the letter "Y". Then, the initial message is printed, and in the next line, an input for the name of the user is taken. The while loop keeps running while the user inputs "Y".



Then, an integer is taken from the user to choose a game modality. If the variable guesser is equal to 1, then the function userGame is started with the variable x being 30. Once the function is ended, the program then takes an input for otherRound. And the same if the user types 2, but this time the computerGuess is started. If another number is typed, a message indicating that will be printed with the option of choosing again. At the end, if the user prints another character, the program prints a message and the program ends.

Link:

<https://github.com/JulianaRamayo/programming/blob/7a3541b2d757ff432c8390cfa782a3a649effe4f/guessTheNumber.py>

Conclusion:

To summarize, while making this program, I had to use some basic programming concepts, such as functions, flow control, constants and variables, input and output functions, and logical operators. In the making of this program, I observed how everything has to be taken into account for a program to be good and usable, and also the importance of practicing and testing over and over again.

