

## **Mini Project – 1 (Python)**

### **Number Guessing Game**

#### **Problem statement:**

- Build a number Guessing Game in which the user selects a range.
- Assume the user selected a range from X and Y where both X and Y are integers.
- So a random number in that range is selected by the system where the user needs to guess the number in minimum number of guesses.

#### **Algorithm:**

- The welcome message will be popped up on the user's console.
- Getting the range from the user
  - Getting Lower bound of the range.
  - Getting Higher bound of the range.
- By using random the system will select a random number from the given range and the random number will be stored inside a variable.
- Initializing the guess counter to zero.
- The system will allow the user to guess the random number.
- For every entry the guess counter will be incremented.
- The number of guesses will be limited to 10 chances.
- Messages will be popped up when ever the given entry by the user is wrong.
  - If the entry is not in between the given range.
  - If the entry is too low, inform the user that the entry is lower than the number.
  - If the entry is too high, inform the user that the entry is higher than the number.
  - If the entry matches the number, inform the user that the number they have guessed is right.
  - If the guess counter equals to 10 then, inform the user that they were out of chances.
- The game ends with a congratulatory message along with the number of guesses even whether the user guesses the number or even if they have used all the chances.

## Pseudocode:

START

PRINT " Welcome to the number guessing game "

PRINT " Enter the lower bound of the range "

READ lower\_bound

PRINT " Enter the higher bound of the range "

READ higher\_bound

IF lower\_bound > higher\_bound THEN

    PRINT "higher bound should be higher than the lower bound "

ELIF lower\_bound = higher\_bound THEN

    PRINT "higher bound should not be equal to lower bound"

ELSE

    PRINT "The given range is suitable for the game"

WHILE lower\_bound < higher\_bound

Secret\_number=Random.Randint(lower\_bound,higher\_bound)

PRINT "Secret number have been selected enter your guess"

READ number

INCREMENT guess\_counter

IF number = secret\_number THEN

    PRINT "you have guessed the number correct "

ELIF number > secret\_number THEN

    PRINT "Your guess is too higher from the secret number"

ELIF number < secret\_number THEN

    PRINT "Your guess is too low from the secret number"

ELSE

    PRINT " Given entry is not in between the given range"

END IF

IF guess\_counter = 5 THEN

    PRINT "Better luck next time you are out of your chances"

PRINT "Congratulations you have successfully completed the game by using  
    {guess\_counter} chances"

END

### **CODE:**

```
import random
print("vanshika(2203031240226-17)")
print("Welcome to the Number Guessing Game!")
while True:
    try:
        x = int(input("Enter the lower bound of the range (X): "))
        y = int(input("Enter the upper bound of the range (Y): "))
        if x >= y:
            print("Invalid entry, The upper bound must be greater than the lower bound.")
            continue
        break
    except ValueError:
        print("Please enter valid integers for the range.")

secret_number = random.randint(x, y)
chances = 10
print(f"You have {chances} chances to guess the number.")
print("I have selected a random number from the range given above")
for guess_count in range(chances):
    while True:
        try:
            guess = int(input("Enter your guess: "))
            break
        except ValueError:
            print("Invalid input. Please enter a number.")
    if guess == secret_number:
        print("Congratulations! You guessed the number in", guess_count + 1, "tries.")
        break
    elif guess < secret_number:
        print("Too low. Try again!")
    else:
        print("Too high. Try again!")
else:
    print("You ran out of chances. The secret number was", secret_number)

print("Thankyou for participating in the number guessing game!!!")
```

```
1 import random
2 print("vanshika(2203031240226-17)")
3 print("Welcome to the Number Guessing Game!")
4 while True:
5     try:
6         x = int(input("Enter the lower bound of the range (X): "))
7         y = int(input("Enter the upper bound of the range (Y): "))
8         if x >= y:
9             print("Invalid entry, The upper bound must be greater than the lower bound.")
10            continue
11        break
12    except ValueError:
13        print("Please enter valid integers for the range.")
14
15 secret_number = random.randint(x, y)
16 chances = 10
17 print(f"You have {chances} chances to guess the number.")
18 print("I have selected a random number from the range given above")
19 for guess_count in range(chances):
20     while True:
21         try:
22             guess = int(input("Enter your guess: "))
23             break
24         except ValueError:
25             print("Invalid input. Please enter a number.")
26     if guess == secret_number:
27         print("Congratulations! You guessed the number in", guess_count + 1, "tries.")
28         break
29     elif guess < secret_number:
30         print("Too low. Try again!")
31
32     else:
33         print("Too high. Try again!")
34 else:
35     print("You ran out of chances. The secret number was", secret_number)
36 print("Thankyou for participating in the number guessing game!!!")
```

## OUTPUT:

1)

```
C:\Users\buris\PycharmProjects\pythonProject1\venv\Scripts\python.exe "C:\User
vanshika(2203031240226-17)
Welcome to the Number Guessing Game!
Enter the lower bound of the range (X): 10
Enter the upper bound of the range (Y): 1000
You have 10 chances to guess the number.
I have selected a random number from the range given above
Enter your guess: 50
Too low. Try again!
Enter your guess: 500
Too high. Try again!
Enter your guess: 450
Too high. Try again!
Enter your guess: 400
Too high. Try again!
Enter your guess: 350
Too low. Try again!
Enter your guess: 360
Too low. Try again!
Enter your guess: 369
Too high. Try again!
Enter your guess: 368
Too high. Try again!
Enter your guess: 367
Too high. Try again!
Enter your guess: 366
Too high. Try again!
You ran out of chances. The secret number was 362
Thankyou for participating in the number guessing game!!!

Process finished with exit code 0
|
```

2)

```
C:\Users\buris\PycharmProjects\pythonProject1\venv\Scripts\python.exe "C:\Users\buris\PycharmProjects\pythonProject1\venv\Scripts\python.exe" vanshika(2203031240226-17)
Welcome to the Number Guessing Game!
Enter the lower bound of the range (X): 10
Enter the upper bound of the range (Y): 50
You have 10 chances to guess the number.
I have selected a random number from the range given above
Enter your guess: 50
Too high. Try again!
Enter your guess: 45
Too high. Try again!
Enter your guess: 40
Too high. Try again!
Enter your guess: 35
Too low. Try again!
Enter your guess: 36
Congratulations! You guessed the number in 5 tries.
Thankyou for participating in the number guessing game!!!

Process finished with exit code 0
```