

Foundation Certificate for Higher Education

Module code: DOC-333-Introduction to Programming in Python – P1

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1 Introduction

This report is a brief overview of the Python program created to implement the code breaking game concept called "The Hidden Peg Game".

1.1The Primary purpose of the game concept

In this game, two players take turns being the code writer and code breaker. The code maker uses 6 color to build a 4-digit code, the code breaker uses 6 colors to break that code, and the code breaker uses 6 colors to generate a 4. - Numeric code. The encoder will give you a shot of a black peg, indicating that the colored peg is the correct color and in the correct position, and a white peg, indicating that the colored peg is the correct color but in the displayed position. The code breaker has 8 chances to figure out this code.

1.2 The Python Program

The main idea of the power game above is taken from the Python software mentioned in this report to create an integer-based code-breaking game. The color palette of this software is represented by integers from 0 to 6, and white and color black are represented by the numbers 0

and 1 respectively. The program's code generator generates a four-digit code, takes input from the user acting as a code breaker in this case, and then provides a response tip. The user has 8 attempts to crack the system generated code, just like in the game. If the chances have run out, the program will end, giving the chance for the user to restart the game.

2 How does the program operate?

Conditional statements are primarily used in this software to see if the user inputs match the code that needs to be located and to deliver the appropriate hints so that the user may take the appropriate actions. Using a flowchart diagram to illustrate the operation of the previously mentioned program will help you understand this better.

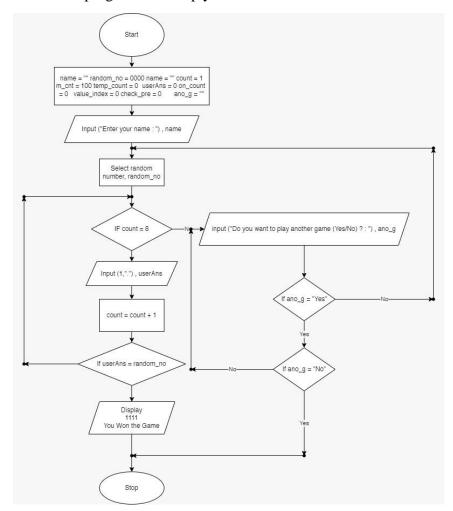


Figure 1:Flowchart

3 Python code of the program

This flowchart may now be used as a real application with a user interface that allows the user to easily follow his progress through the game thanks to the Python programming language. This software is contained within a while loop, which continues indefinitely and only terminates if the user enters the end code to end the game. This was accomplished by leveraging the while loops "continue" and "break" commands to either continue or end the game in response to input. The program works as mentioned below.

import random as gen # value_index = 1 $random_no = str(gen.randint(1, 6)) + str(gen.randint(1, 6)) + str(gen.randint(1, 6)) +$ str(gen.randint(1, 6)) name = input("Enter Your Name: ") print("\t\t HI", name, "Welcome to GameInt") # print(random_no) print() print("Number to Guess - XXXX ", end=" ") print("\t\t\t\t\t\t\t\t\t\t\Color Mapping: ") print() ans = []def game(): count = 1 #count untill 8th attempts m cnt = 100print("Attempt\t\t\t\t Guess\t\t\t\ Result ") while 1: print("_ while True: $temp_count = 0$

```
userAns = input(f"\{count\}: \t\t\t\t\t ")
  on_count = 0
  for index in userAns:
    if index == '0':
       on count += 1
  if on_count == 4:
    print()
    print("....Terminate Game Int....")
    exit()
    break
  for index in userAns:
    temp = int(index)
    if 0 < \text{temp} < 7:
       temp_count += 1
  if temp_count == 4 and len(userAns) == 4:
    break
  else:
    print()
    print("!!!!Wrong Input Please Enter Again....")
value\_index = 0
check\_pre = 0
for index in userAns:
  check = True
  if random_no[value_index] == index:
     ans.insert(value_index, '1') # check 1 val
    check_pre += 1
    check = False
  else:
```

```
if check_pre > 1:
       for k_val in range(check_pre, 4):
          if index == random_no[k_val]:
             ans.insert(value_index, '0')
             check = False
     else:
       for f in random_no:
          if index == f:
             ans.insert(value_index, '0')
             check = False
             break
     if check:
        ans.insert(value_index, '.')
  value_index += 1
print("\t\t\t\t\t\t\t\t\t\t\t\", end=' ')
win = 0
for v in range(0, 2):
  print(ans[v], end=" ")
print()
print("\t\t\t\t\t\t\t\t\t\t\t\t\", end=' ')
for v in range(2, 4):
  print(ans[v], end=" ")
for c_val in ans:
  if c val == '1':
     win += 1
if win == 4:
  print()
  print("Congratulations !!!!! You have won the game...")
```

```
print("You have scored", m_cnt, "points.")
       break
    ans.clear()
    if count == 8:
       print()
       print("Your Attempts are Over !!!!! Try again...")
       break
    count += 1
    m_{cnt} = 12.5
    print()
while 1:
  game()
  ano_g = input("Do you want to play another game (Yes/No)?:")
  if ano_g.lower() == "no":
    exit()
    break
  elif ano_g.lower() == "yes":
    ans.clear()
    print("\t\t\t HI", name, "Welcome to GameInt")
    print("Number to Guess - XXXX ", end=" ")
    print("\t\t\t\t\t\t\t\tColor Mapping: ")
    print("\t\t\t\t\t\t\t\t\t\t\t\t\4-Yellow 5-Green 6-Purple")
    random\_no = str(gen.randint(1, 6)) + str(gen.randint(1, 6)) + str(gen.randint(1, 6)) +
str(gen.randint(1, 6))
    print()
```

4 Screenshots of the program

The working program and some screenshots of the program's results displayed in the user interface are provided below.

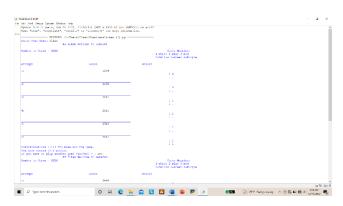


Figure 2: Program output that shows the user finding the answer

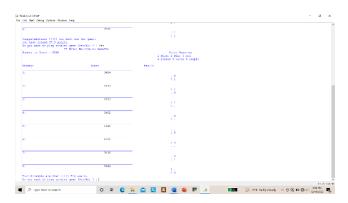


Figure 3: program output that shows the user not finding the answer

5 Conclusion

To arrive at the necessary solutions, this program underwent extensive testing and development. But overall, the application was developed successfully and used the Python programming language to arrive at the required solutions. The Python Shell was used to execute the program, which was entirely coded in IDLE (Python 3.11 64-bit). In conclusion, this software, which was created utilizing the fundamental Python commands, was a big success.