

Programming Exam 6

Date/Time: 2023.05.02 08:10 – 09:00

(程式檔命名學號_quiz6.py，上傳至 Moodle PE6 上傳區)

Problem: Guess Number with Histogram Display

Write a Python program that plays the Guess the Number game with the user. The program should generate a random integer between 1 and 100, inclusive, using the ‘**random**’ module. The program prompts the user to guess the number and validate their input (ensure between 1-100, inclusive). You need to inform the user whether their guess is correct, too high, or too low. The program allows the user to guess again and add their guess to a list of previous guesses until they guess the correct number. When the user guesses the correct number, the program will print a congratulatory message, the number of tries it took the user to guess the number, the list of previous guesses, and a histogram of the guesses. The histogram should display the frequency of each guess as a row of asterisks (*), grouped by ten. The histogram labels should be aligned to the right.

Sample Input/Output

(以下是你程式執行後須印出的結果)

```
c:\workspace>python pe6.py
Guess my number between 1 and 100.
Enter your guess (1-100): 50
Too low. Guess again: 75
Too high. Guess again: 999
Invalid input. Guess again: 65
Too high. Guess again: 0
Invalid input. Guess again: 60
Too high. Guess again: 57
Too high. Guess again: 54
Too low. Guess again: 55
Congratulations! You guessed the number in 7 tries.
Previous guesses: [50, 75, 65, 60, 57, 54, 55]
Histogram:
001-010:
011-020:
021-030:
031-040:
041-050: *
051-060: ****
061-070: *
071-080: *
081-090:
091-100:
c:\workspace>
```

```
c:\workspace>python pe6.py
Guess my number between 1 and 100.
Enter your guess (1-100): 50
Too low. Guess again: 85
Too low. Guess again: 88
Too low. Guess again: 99
Too high. Guess again: 96
Too high. Guess again: 94
Too high. Guess again: 92
Too high. Guess again: 90
Too high. Guess again: 89
Congratulations! You guessed the number in 9 tries.
Previous guesses: [50, 85, 88, 99, 96, 94, 92, 90, 89]
Histogram:
001-010:
011-020:
021-030:
031-040:
041-050: *
051-060:
061-070:
071-080:
081-090: ****
091-100: ****
c:\workspace>
```

(繳交是交 pe6.py 檔，不是交截圖)

Note: You need to write comments (註解) for each part in your code.