

Future Intern as Python Development

Task 1

Task 0.1: Calculator

Create a basic calculator that can perform basic arithmetic operations such as addition, subtraction, multiplication, and division.

Solution:

```
# This function adds two numbers
def add(x, y):
    return x + y

# This function subtracts two numbers
def subtract(x, y):
    return x - y

# This function multiplies two numbers
def multiply(x, y):
    return x * y

# This function divides two numbers
def divide(x, y):
    return x / y

print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")
```

```
while True:
    # take input from the user
    choice = input("Enter choice(1/2/3/4): ")

    # check if choice is one of the four options
    if choice in ('1', '2', '3', '4'):
        try:
            num1 = float(input("Enter first number: "))
            num2 = float(input("Enter second number: "))
        except ValueError:
            print("Invalid input. Please enter a number.")
            continue

        if choice == '1':
            print(num1, "+", num2, "=", add(num1, num2))

        elif choice == '2':
            print(num1, "-", num2, "=", subtract(num1, num2))

        elif choice == '3':
            print(num1, "*", num2, "=", multiply(num1, num2))

        elif choice == '4':
            print(num1, "/", num2, "=", divide(num1, num2))
```

Activate Windows

```

# check if user wants another calculation
# break the while loop if answer is no
next_calculation = input("Let's do next calculation? (yes/no): ")
if next_calculation == "no":
    break
else:
    print("Invalid Input")

```

```

Select operation.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter choice(1/2/3/4): 1
Enter first number: 4
Enter second number: 9
4.0 + 9.0 = 13.0
Let's do next calculation? (yes/no): yes
Enter choice(1/2/3/4): 2
Enter first number: 13
Enter second number: 5
13.0 - 5.0 = 8.0
Let's do next calculation? (yes/no): yes
Enter choice(1/2/3/4): 3
Enter first number: 23
Enter second number: 21
23.0 * 21.0 = 483.0
Let's do next calculation? (yes/no): yes
Enter choice(1/2/3/4): 25
Invalid Input
Enter choice(1/2/3/4): 6
Invalid Input
Enter choice(1/2/3/4): 4
Enter first number: 2
Enter second number: 4
2.0 / 4.0 = 0.5
Let's do next calculation? (yes/no): no

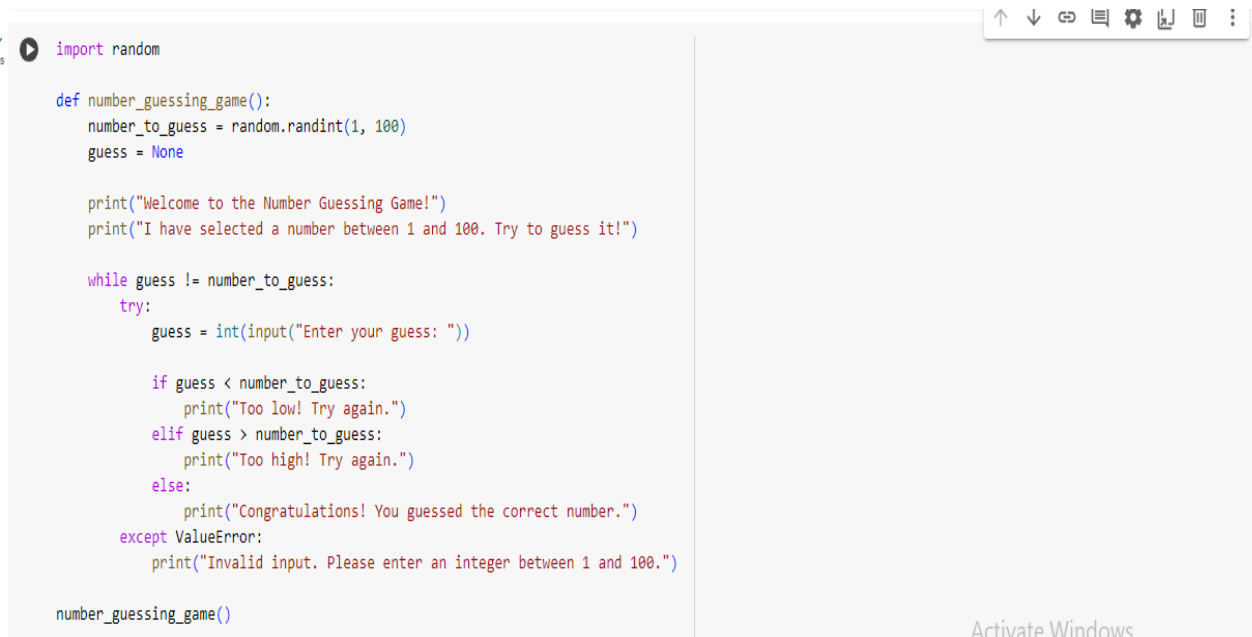
```

Activate Windows
Go to Settings to activate Windows.

Task 0.2: Number Guessing Game

Create a program that asks the user to guess a number between 1 and 100. The program should then give hints to the user until they guess the correct number.

Solution:



The image shows a Python IDE interface. The top part is a code editor with a light gray background. It contains a Python script for a number guessing game. The script imports the random module, defines a function number_guessing_game(), and calls it. The function generates a random number between 1 and 100, prompts the user to guess, and provides feedback based on whether the guess is too low, too high, or correct. It also handles ValueError exceptions for non-integer input. The bottom part is a terminal window with a dark background, showing the output of the program. It displays the welcome message, the range of the number, and the user's guesses with feedback. The program ends with a congratulatory message.

```
import random

def number_guessing_game():
    number_to_guess = random.randint(1, 100)
    guess = None

    print("Welcome to the Number Guessing Game!")
    print("I have selected a number between 1 and 100. Try to guess it!")

    while guess != number_to_guess:
        try:
            guess = int(input("Enter your guess: "))

            if guess < number_to_guess:
                print("Too low! Try again.")
            elif guess > number_to_guess:
                print("Too high! Try again.")
            else:
                print("Congratulations! You guessed the correct number.")
        except ValueError:
            print("Invalid input. Please enter an integer between 1 and 100.")

    number_guessing_game()
```

```
→ Welcome to the Number Guessing Game!
I have selected a number between 1 and 100. Try to guess it!
Enter your guess: 20
Too low! Try again.
Enter your guess: 40
Too low! Try again.
Enter your guess: 50
Too low! Try again.
Enter your guess: 60
Too low! Try again.
Enter your guess: 70
Too low! Try again.
Enter your guess: 80
Too low! Try again.
Enter your guess: 90
Congratulations! You guessed the correct number.
```