Name of the Course: IT Workshop (Python)

Course Code: PCC-CS393

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Assignment No. : Day9_01

Problem Statement: Write a program to read a number from the user. If the number is positive or zero, print it, otherwise raise an exception.

Python Code:

```
num = float(input("Enter a number: "))

if num >= 0:
    print("The number is:", num)
else:
    raise ValueError("The number is negative!")
```

Sample Output:

```
Enter a number: -8
The number is negative!
```

---x--

Assignment No. : Day9_02

Problem Statement: Write a program to read two numbers from the user and perform basic mathematical operations (addition, multiplication, subtraction, division) by handling all possible exceptions.

Python Code:

```
try:
    num1 = float(input("Enter the first number: "))
    num2 = float(input("Enter the second number: "))
```

```python
    addition = num1 + num2
    subtraction = num1 - num2
    multiplication = num1 * num2

    if num2 != 0:
        division = num1 / num2
    else:
        division = "Error: Division by zero is not allowed"

    print(f"Addition: {addition}")
    print(f"Subtraction: {subtraction}")
    print(f"Multiplication: {multiplication}")
    print(f"Division: {division}")

except ValueError:
    print("Error: Invalid input. Please enter a number.")
```

Sample Output:

Enter the first number: 55
Enter the second number: 11
Addition: 66
Subtraction: 44
Multiplication: 605
Division: 5.0

--**x**--

Assignment No. : Day9_03

Problem Statement: Write a program to read a number from the user and print its square. Generate
KeyboardIntrrupt exception if Ctrl + C is pressed instead of a number.

Python Code:

```python
try:
    num = float(input("Enter a number: "))

    square = num ** 2
    print(f"The square of {num} is {square}")

except ValueError:
    print("Error: Invalid input. Please enter a number.")

except KeyboardInterrupt:
    print("\nError: KeyboardInterrupt. You pressed Ctrl + C.")
```

Sample Output:
Enter a number: 5
The square of 5 is 25

--**x**--

Assignment No. : Day9_04

Problem Statement: Write a program to print random numbers infinitely. Raise the StopIteration exception after displaying 10 numbers to exit from the program.

Python Code:

```python
import random

try:
    for i in range(1, 11):
        print(random.randint(1, 100))

    raise StopIteration

except StopIteration:
    print("\nStopIteration exception raised. Exiting the program.")
```

Sample Output:

```
2
9
85
46
72
49
23
67
93
13
StopIteration exception raised. Exiting the program
```

---**x**--

Assignment No. : Day9_05

Problem Statement: Write a program to generate a random number. Raise a user-defined exception if the number is below 0.5.

Python Code:

```python
import random


class NumberBelowThresholdError(Exception):
    pass


try:
    num = random.random()

    print(f"Generated number: {num}")
```

```
    if num < 0.5:
        raise NumberBelowThresholdError("Number is below 0.5")

except NumberBelowThresholdError as e:
    print(f"Error: {e}")
```

Sample Output:

Generated number: 8.5

---**x**--

Assignment No. : Day9_06

Problem Statement: Write a program to read the age of a person and raise exceptions if age is negative.

Python Code:

```
class NegativeAgeError(Exception):
    pass


try:
    age = int(input("Enter your age: "))

    if age < 0:
        raise NegativeAgeError("Age cannot be negative")

    print(f"Your age is {age}")

except ValueError:
    print("Error: Invalid input. Please enter a number.")

except NegativeAgeError as e:
    print(f"Error: {e}")
```

Sample Output:

Enter your age: -80
Age cannot be negative
---**x**--