11 - Exceptions

Ex. No. : 11.1 **Date:** 1/6/24

Register No.: 231501024 **Name: ASHWIN T**

Out of Range Numbers

Problem Description:

Write a Python script that asks the user to enter a number within a specified range (e.g., 1 to 100). Handle exceptions for invalid inputs and out-of-range numbers.

Input Format:

User inputs a number.

Output Format:

Confirm the input or print an error message if it's invalid or out of range.

For example:

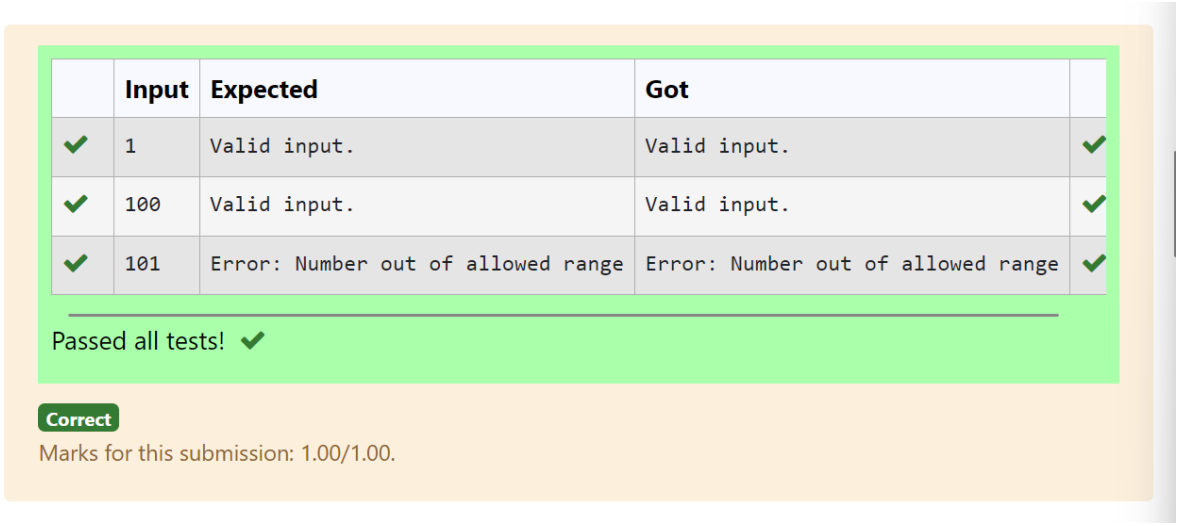
Input	Result
1	Valid input.
101	Error: Number out of allowed range
rec	Error: invalid literal for int()

PROGRAM

```
try:
    num = int(input())
    if 1 <= num <= 100:
        print("Valid input.")

    else:
        print("Error: Number out of allowed range")
except ValueError:
    print("Error: invalid literal for int()")
```

Output:



	Input	Expected	Got	
✔	1	Valid input.	Valid input.	✔
✔	100	Valid input.	Valid input.	✔
✔	101	Error: Number out of allowed range	Error: Number out of allowed range	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 11.2 **Date:** 1/6/24

Register No.: 231501024 **Name: ASHWIN T**

Divide by Zero

Develop a Python program that safely performs division between two numbers provided by the user. Handle exceptions like division by zero and non-numeric inputs.

Input Format: Two lines of input, each containing a number.

Output Format: Print the result of the division or an error message if an exception occurs.

For example:

Input	Result
10 2	5.0
10 0	Error: Cannot divide or modulo by zero.
ten 5	Error: Non-numeric input provided.

PROGRAM

```
try:
    a=int(input())
    b=int(input())
    print(a/b)

except ValueError:
    print("Error: Non-numeric input provided.")
except ZeroDivisionError:
    print("Error: Cannot divide or modulo by zero.")
```

Output:

	Input	Expected	Got
✔	10 2	5.0	5.0
✔	10 0	Error: Cannot divide or modulo by zero.	Error: Cannot divide or modulo by
✔	ten 5	Error: Non-numeric input provided.	Error: Non-numeric input provided

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 11.3 **Date:** 1/6/24

Register No.: 231501024 **Name: ASHWIN T**

Valid Age

Problem Description:

Write a Python script that asks the user to enter a number within a specified range (e.g., 1 to 100). Handle exceptions for invalid inputs and out-of-range numbers.

Input Format:

User inputs a number.

Output Format:

Confirm the input or print an error message if it's invalid or out of range.

For example:

Input	Result
1	Valid input.
101	Error: Number out of allowed range
rec	Error: invalid literal for int()

PROGRAM

```
try:
    num = int(input())
    if 1 <= num <= 100:
        print("Valid input.")

    else:
        print("Error: Number out of allowed range")
except ValueError:
    print("Error: invalid literal for int()")
```

Output:

	Input	Expected	Got	
✔	twenty	Error: Please enter a valid age.	Error: Please enter a valid age.	✔
✔	25	You are 25 years old.	You are 25 years old.	✔
✔	-1	Error: Please enter a valid age.	Error: Please enter a valid age.	✔
✔	150	You are 150 years old.	You are 150 years old.	✔
✔		Error: Please enter a valid age.	Error: Please enter a valid age.	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 11.4 **Date:** 1/6/24

Register No.: 231501024 **Name: ASHWIN T**

Safe Square Root

Problem Description:

Develop a Python program that safely calculates the square root of a number provided by the user. Handle exceptions for negative inputs and non-numeric inputs.

Input Format:

User inputs a number.

Output Format:

Print the square root of the number or an error message if an exception occurs.

For example:

Input	Result
16	The square root of 16.0 is 4.00
-4	Error: Cannot calculate the square root of a negative number.
rec	Error: could not convert string to float

PROGRAM

```
try:
    a=int(input())
    if a>=0:
        print("The square root of %.1f is %.2f"%(float(a),float(a**0.5)))
    else:
        print("Error: Cannot calculate the square root of a negative number.")
except:
    print("Error could not convert string to float")
```

Output:

	Input	Expected	Got
✔	16	The square root of 16.0 is 4.00	The square
✔	0	The square root of 0.0 is 0.00	The square
✔	-4	Error: Cannot calculate the square root of a negative number.	Error: Cann

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Ex. No. : 11.5 **Date:** 1/6/24

Register No.: 231501024 **Name: ASHWIN T**

Valid Integer

Problem Description:

Write a Python program that asks the user for their age and prints a message based on the age. Ensure that the program handles cases where the input is not a valid integer.

Input Format:

A single line input representing the user's age.

Output Format:

Print a message based on the age or an error if the input is invalid.

For example:

Input	Result
25	You are 25 years old.
rec	Error: Please enter a valid age.
-5	Error: Please enter a valid age.

PROGRAM

```
try:
    n=int(input())
    if n>=1:

        print("You are",n,"years old.")
    else:
        print("Error: Please enter a valid age.")
except:
    print("Error: Please enter a valid age.")
```

Output:

	Input	Expected	Got	
✔	twenty	Error: Please enter a valid age.	Error: Please enter a valid age.	✔
✔	25	You are 25 years old.	You are 25 years old.	✔
✔	-1	Error: Please enter a valid age.	Error: Please enter a valid age.	✔
✔	150	You are 150 years old.	You are 150 years old.	✔
✔		Error: Please enter a valid age.	Error: Please enter a valid age.	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.