11-Exception Handling

Ex.no:11.1
Date:6.6.2024
Register No: 231401026 **Name: S DIVYA**

1)Problem Descrip0on:

Develop a Python program that safely calculates the square root of a number provided by the user. Handle excep0ons for nega0ve 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 excep0on occurs.

PROGRAM:

```
import math  try:
   a=float(input())
if a>=0:
      b=a**0.5       c="%.2f"%b       print("The
square root of",float(a),"is",c)    else:
      print("Error: Cannot calculate the square root of a negaLve number.")
except EOFError:     print("Error: could not convert string to float") except
ValueError:
   print("Error: could not convert string to float")
```

OUTPUT:

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

Ex.no:11.2

Date:6.6.2024

Register No: 231401026 **Name: S DIVYA**

2) Write a Python program that performs division and modulo operations on two numbers provided by the user. Handle division by zero and non-numeric inputs.

Input Format:

Two lines of input, each containing a number.

Output Format:

Print the result of division and modulo operation, or an error message if an exception occurs.

PROGRAM:

```
try:
   a=input()    b=input()
c=int(a)/int(b)    d=int(a)%int(b)
except ZeroDivisionError:
   print("Error: Cannot divide or modulo by zero.")
except:
   print("Error: Non-numeric input provided.")
else:
   print("Division result:",c)
print("Modulo result:",d)
```

OUTPUT:

	Input	Expected	Got	
✔	10 2	Division result: 5.0 Modulo result: 0	Division result: 5.0 Modulo result: 0	✔
✔	7 3	Division result: 2.3333333333333335 Modulo result: 1	Division result: 2.3333333333333335 Modulo result: 1	✔
✔	8 0	Error: Cannot divide or modulo by zero.	Error: Cannot divide or modulo by zero.	✔
✔	abc 5	Error: Non-numeric input provided.	Error: Non-numeric input provided.	✔

Passed all tests! ✔

Ex.no:12.3

Date:6.6.2024

Register No: 231401026 **Name: S DIVYA**

3) 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.

PROGRAM:

```
try:
   a=input()
b=input()     c=float(a)/float(b)
except ZeroDivisionError:
   print("Error: Cannot divide or modulo by zero.")
except:      print("Error: Non-numeric input
provided.") else:      print(c)
```

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 zero.	✔
✔	ten 5	Error: Non-numeric input provided.	Error: Non-numeric input provided.	✔

Passed all tests! ✔

Ex.no:12.5

Date:6.6.2024

Register No: 231401026 **Name: S DIVYA**

4) 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.

PROGRAM:

```
try:
   n=input()     if(int(n)>0 and
int(n)<101):
      print("Valid input.")
else:
      print("Error: Number out of allowed range")
except:
   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! ✔

Ex.no:12.5

Date:6.6.2024

Register No: 231401026 **Name: S DIVYA**

5) 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.

PROGRAM:

```
try:
   a=input()
if int(a)>=0:
      print("You are",a,"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! ✔