**11.EXCEPTIONS**

**Ex:11.1 INVALID AND OUT OF RANGE**

**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:

n = int(input())

if(n>100) or (n<1):

print("Error: Number out of allowed range")

else:

print("Valid input.")

except ValueError:

print("Error: invalid literal for int()")

**Ex:11.2 AGE AND ERRORS**

**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<0):

print("Error: Please enter a valid age.")

elif(n is None):

print("Error: Please enter a valid age.")

else:

print("You are %d years old."%n)

except ValueError:

print("Error: Please enter a valid age.")

except TypeError:

print("Error: Please enter a valid age.")

except EOFError:

print("Error: Please enter a valid age.")

**Ex:11.3 SAFE DIVISION AND ERROR HANDLING**

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:

n1 = float(input())

n2 = float(input())

c = n1/n2

except (ValueError,EOFError,TypeError,KeyboardInterrupt,RuntimeError):

print("Error: Non-numeric input provided.")

except ZeroDivisionError:

print("Error: Cannot divide or modulo by zero.")

else:

print(c)

**Ex:11.4 DIVISION AND MODULO**

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.

For example:

| **Input** | **Result** |
| --- | --- |
| 10  2 | Division result: 5.0  Modulo result: 0 |
| 7  3 | Division result: 2.3333333333333335  Modulo result: 1 |
| 8  0 | Error: Cannot divide or modulo by zero. |

PROGRAM:

try:

n1 = int(input())

n2 = int(input())

print("Division result:",n1/n2)

print("Modulo result:",n1%n2)

except ZeroDivisionError:

print("Error: Cannot divide or modulo by zero.")

except ValueError:

print("Error: Non-numeric input provided.")

**Ex:11.5 AGE AND ERROR-II**

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** |
| --- | --- |
| twenty | Error: Please enter a valid age. |
| 25 | You are 25 years old. |
| -1 | Error: Please enter a valid age. |

PROGRAM:

try:

n = int(input())

if(n<0):

print("Error: Please enter a valid age.")

elif(n is None):

print("Error: Please enter a valid age.")

else:

print("You are %d years old."%n)

except ValueError:

print("Error: Please enter a valid age.")

except TypeError:

print("Error: Please enter a valid age.")

except EOFError:

print("Error: Please enter a valid age.")