

## WEEK 11:

### 1.

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.

```
try:
    a=input()
    if(len(a)==0):
        print("Error: Please enter a valid age.")
    elif a.isnumeric():
        print("You are",a,"years old.")    else:
        print("Error: Please enter a valid age.")
except:
    print("Error: Please enter a valid age.")
```

```

try:
a=input()
if(len(a)==0):
    print("Error: Please enter a valid age.")
elif a.isnumeric():
    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
25	You are 25 years old.	You are 25 years old.
rec	Error: Please enter a valid age.	Error: Please enter a valid age.
!@#	Error: Please enter a valid age.	Error: Please enter a valid age.

Passed all tests!

Correct

## 3.

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

## 4.

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.

```
def main():  
    try:  
        num1 = float(input())  
        num2 = float(input())  
  
        division_result = num1 / num2  
        modulo_result = num1 % num2  
  
        print(division_result)  
  
    except ValueError:  
        print("Error: Non-numeric input provided.")  
    except ZeroDivisionError:
```

-4	Error: Cannot calculate the square root of a negative number.
rec	Error: could not convert string to float

try:

```
a=float(input())
```

```
if(a<0):    print("Error: Cannot calculate the square root of a negative
number.")
```

```
else:      print("The square root of",a,"is
{:.2f}".format(a**0.5)) 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 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 of a negative number.

Passed all tests!

Correct

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

```
if __name__ == "__main__":  
    main()
```

## 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!

Correct

## 5.

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

rec	Error: invalid literal for int()
-----	----------------------------------

```
def main():
    min_range = 1
    max_range = 100

    try:
        num = int(input())
        if num < min_range or num > max_range:
            print("Error: Number out of allowed range")
        else:
            print("Valid input.")
    except ValueError:
        print("Error: invalid literal for int()")
```

```
if __name__ == "__main__":
```

## 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.

## OUTOUT:

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

## 2.

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.