

# WEEK 11:

Ex. No. : 11.1

Date: 6.6.2024

Register No.: 231501167

Name: SURYA PRAJIN S

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.")
```

## 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.

Ex. No. : 11.2

Date: 6.6.2024

Register No.: 231501167

Name: SURYA PRAJIN S

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.

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.

**Ex. No.** : 11.3

**Date:** 6.6.2024

**Register No.:** 231501167

**Name:** SURYA PRAJIN S

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()

```
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.

4.

**Ex. No.** : 11.4

**Date:** 6.6.2024

**Register No.:** 231501167

**Name:** SURYA PRAJIN S

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:
```

```
        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.

Ex. No. : 11.5

Date: 6.6.2024

Register No.: 231501167

Name: SURYA PRAJIN S

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

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