LAB REPORT-2

STUDENT NAME	**A.PAVANI**	
STUDENT REGISTRATION NUMBER		**CLASS: AIML (B SEC)**
PROGRAM	**UG**	**YEAR and TERM: 1st year & 1st term**
SUBJECT NAME	**PROBLEM SOLVING WITH PYTHON**	
NAME OF THE ASSESSMENT	**LAB REPORT-2**	
DATE OF SUBMISSION	**18-10-2025**	

- Write a Python program to check whether a number is positive, negative, or zero.

(Covers basic if–elif–else structure)

INPUT:

```
num =int(input("Enter a number: "))

if num > 0:
    print("The number is Positive.")
elif num < 0:
    print("The number is Negative.")
else:
    print("The number is Zero.")
```

OUTPUT:

```
Enter a number: 6
The number is Positive.
```

- Write a program to check whether a number is even or odd using if-else.

INPUT:

```
num = int(input("Enter an integer: "))

if num % 2 == 0:
    print("The number is Even.")
else:
    print("The number is Odd.")
```

OUTPUT:

```
Enter an integer: 8
The number is Even.
```

- Write a Python program to find the largest among three numbers using the elif ladder.

INPUT:

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
c = int(input("Enter third number: "))

if a >= b and a >= c:
    print("The largest number is:", a)
elif b >= a and b >= c:
    print("The largest number is:", b)
else:
    print("The largest number is:", c)
```

OUTPUT:

```
-------------------------
Enter first number: 6
Enter second number: 9
Enter third number: 4
The largest number is: 9
```

- Write a program to assign grades to students based on marks using an if-elif-else structure:

Marks≥ 90 → A

Marks ≥ 80 → B

Marks ≥ 70 → C

Marks ≥ 60 → D

Otherwise → F

INPUT:

```
marks = int(input("Enter marks: "))

if marks >= 90:
    grade = "A"
elif marks >= 80:
    grade = "B"
elif marks >= 70:
    grade = "C"
elif marks >= 60:
    grade = "D"
else:
    grade = "F"

print("Grade:", grade)
```

OUTPUT:

```
Enter marks: 89
Grade: B
```

- Write a Python program to check whether a given year is a leap year using nested if statements.

INPUT:

```
year = int(input("Enter a year: "))

if year % 4 == 0:
    if year % 100 == 0:
        if year % 400 == 0:
            print("Leap Year")
        else:
            print("Not a Leap Year")
    else:
        print("Leap Year")
else:
    print("Not a Leap Year")
```

OUTPUT:

```
--------------------
Enter a year: 2026
Not a Leap Year
```

- write a program to check if a person is eligible to vote based on both age and citizenship using nested if.

INPUT:

```
age = int(input("Enter age: "))
citizen = input("Are you an Indian citizen? (yes/no): ")

if age >= 18:
    if citizen == "yes":
        print("Eligible to vote ")
    else:
        print("Not eligible due to citizenship ")
else:
    print("Not eligible due to age ")
```

OUTPUT:

```
Enter age: 16
Are you an Indian citizen? (yes/no): yes
Not eligible due to age
```

- Write a program that displays the day of the week for numbers 1–7 using an elif ladder.

INPUT:

```
day = int(input("Enter a number (1-7): "))

if day == 1:
    print("Monday")
elif day == 2:
    print("Tuesday")
elif day == 3:
    print("Wednesday")
elif day == 4:
    print("Thursday")
elif day == 5:
    print("Friday")
elif day == 6:
    print("Saturday")
elif day == 7:
    print("Sunday")
else:
    print("Invalid input. Please enter 1-7.")
```

OUTPUT:

```
Enter a number (1-7): 6
Saturday
```

- Write a program to calculate the electricity bill using the following slabs:

0–100 units → ₹5/unit

101–200 units → ₹7/unit

Above 200 → ₹10/unit

INPUT:

```
units = int(input("Enter electricity units consumed: "))

if units <= 100:
    bill = units * 5
elif units <= 200:
    bill = (100 * 5) + (units - 100) * 7
else:
    bill = (100 * 5) + (100 * 7) + (units - 200) * 10

print(f"Total Electricity Bill: ₹{bill}")
```

OUTPUT:

```
Enter electricity units consumed: 200
Total Electricity Bill: ₹1200
```

- Write a menu-driven program for a simple calculator that performs addition, subtraction, multiplication, and division.

INPUT:

```
print("Simple Calculator Menu")
print("1. Addition")
print("2. Subtraction")
print("3. Multiplication")
print("4. Division")

num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))


if num1 == 1:
    result = num1 + num2
    print("Result:", result)
elif num1== 2:
    result = num1 - num2
    print("Result:", result)
elif num1== 3:
    result = num1 * num2
    print("Result:", result)
elif num1== 4:
    if num2!= 0:
        result = num1 / num2
        print("Result:", result)
    else:
        print("Error: Cannot divide by zero.")
else:
    print("Invalid")
```

OUTPUT:

```
Simple Calculator Menu
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter first number: 8
Enter second number: 9
Invalid
```

- Write a program to check if three sides form a valid triangle, and if valid, determine whether it is Equilateral, Isosceles, or Scalene (using nested if).

  INPUT:

```
a = int(input("Enter side A: "))
b = int(input("Enter side B: "))
c = int(input("Enter side C: "))

if a + b > c and b + c > a and c + a > b:
    print("Valid Triangle")
    if a == b and b == c:
        print("Equilateral Triangle")
    elif a == b or b == c or c == a:
        print("Isosceles Triangle")
    else:
        print("Scalene Triangle")
else:
    print("Not a valid triangle.")
```

OUTPUT:

```
Enter side A: 22
Enter side B: 33
Enter side C: 44
Valid Triangle
Scalene Triangle
```