Practical No. 4 : Write simple Python program to demonstrate use of conditional statements: if' statement, 'if … else' statement, Nested 'if' statement

- **Practical related questions**

1. **Differentiate between if-else and nested-if statement about different Logical operators in Python with appropriate examples.**

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- **If-else :-**
  Used to choose between two blocks based on a single condition. The if part executes the true statement block in the condition and the else part is executed for the false statement block of the condition.

  Example-

```
marks = 80
attendance = 85
if marks >= 75 and attendance >= 75:
    print("Eligible for Award")
else:
    print("Not Eligible")
```

  Output-
  Eligible for Award

- **Nested-if :-**
  Used when one condition depends on another condition. The nested-if statements are used to execute multiple conditional statements in one module or problem statement.

  Example-

```
marks = 35
attendance = 80
if marks >= 40:
```

```
    if attendance >= 75 or marks >= 50:
        print("Allowed to sit for exam")
    else:
        print("Not allowed")
else:
    print("Fail")
```

Output-

Fail

2. Write a program to check the largest number among the three numbers.

➔

```
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
num3 = float(input("Enter third number: "))
if num1 >= num2 and num1 >= num3:
    print("Largest number is:", num1)
elif num2 >= num1 and num2 >= num3:
    print("Largest number is:", num2)
else:
    print("Largest number is:", num3)
```


Output -

```
Enter first number: 9
Enter second number: 6
Enter third number: 12
Largest number is: 12.0
```

3. Write a program to check if the input year is a leap year of not.

➔

```
year = int(input("Enter a year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(year, "is a Leap Year")
else:
    print(year, "is not a Leap Year")
```

Output-

```
Enter a year: 2017
2017 is not a Leap Year
```

4. Write a program to check if a Number is Positive, Negative or Zero

➔

```
num = float(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: -21
The number is Negative
```

5. Write a program that takes the marks of 5 subjects and displays the grades.

➔

```
sub1 = float(input("Enter marks of Subject 1: "))
sub2 = float(input("Enter marks of Subject 2: "))
sub3 = float(input("Enter marks of Subject 3: "))
sub4 = float(input("Enter marks of Subject 4: "))
sub5 = float(input("Enter marks of Subject 5: "))

total = sub1 + sub2 + sub3 + sub4 + sub5
average = total / 5

if average >= 90:
    print("Grade: A+")
elif average >= 80:
    print("Grade: A")
elif average >= 70:
    print("Grade: B+")
```

```
elif average >= 60:
    print("Grade: B")
elif average >= 50:
    print("Grade: C")
elif average >= 40:
    print("Grade: D")
else:
    print("Grade: Fail")
```

Output-

```
Enter marks of Subject 1: 69
Enter marks of Subject 2: 73
Enter marks of Subject 3: 84
Enter marks of Subject 4: 91
Enter marks of Subject 5: 88
Grade: A
```

6. List operators used in if conditional statement.

➔

1) == (Equal to)
2) != (Not equal to)
3) > (Greater than)
4) < (Less than)
5) >= (Greater than or equal to)
6) <= (Less than or equal to)