Student Details

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Batch : 17
Course : B.Tech CSE
Subject : Python Programming
Semester : 2

Experiment 2: Conditional Statements

Aim

To understand decision-making in Python using conditional statements such as if, elif, and else.

Program Codes

1. Divisible by 3 and 5

```
num = 15
if num % 3 == 0 and num % 5 == 0:
    print("Divisible by 3 and 5")
else:
    print("Not divisible")
```

2. Multiple of Five

```
num = 25
if num % 5 == 0:
    print("Multiple of five")
else:
    print("Not a multiple")
```

3. Greatest of Two Numbers

```
a = 10
b = 10
if a > b:
    print("a is greater")
elif b > a:
    print("b is greater")
else:
    print("numbers are equal")
```

4. Greatest of Three Numbers

```
a, b, c = 5, 8, 3
if a > b and a > c:
    print("a is greatest")
elif b > c:
    print("b is greatest")
else:
    print("c is greatest")
```

5. Quadratic Equation

```
import math
a, b, c = 1, -3, 2
d = b*b - 4*a*c
if d > 0:
    r1 = (-b + math.sqrt(d)) / (2*a)
    r2 = (-b - math.sqrt(d)) / (2*a)
    print(r1, r2)
elif d == 0:
    r = -b / (2*a)
    print(r)
else:
    print("Imaginary roots")
```

6. Leap Year

```
year = 2024
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print("Leap Year")
else:
    print("Not a Leap Year")
```

7. Next Date

```
day = 20
month = 9
year = 2005
day += 1
print(day, month, year)
```

8. Grade Sheet

```
marks = [70, 80, 90, 60, 50]
total = sum(marks)
percentage = total / 5
cgpa = percentage / 10

if cgpa <= 3.4:
    grade = "F"
elif cgpa <= 5.0:
    grade = "C+"
elif cgpa <= 6.0:
    grade = "B"
elif cgpa <= 7.0:
    grade = "B+"
elif cgpa <= 8.0:
    grade = "A"
elif cgpa <= 9.0:
    grade = "A+"
else:
    grade = "O"

print("Percentage:", percentage)
print("CGPA:", cgpa)
print("Grade:", grade)
```

Outputs

1.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
Divisible by 3 and 5
```

2.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
Multiple of five
```

3.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
numbers are equal
```

4.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
b is greatest
```

5.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
2.0 1.0
```

6.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
Leap Year
```

7.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
21 9 2005
```

8.

```
[Running] python -u "c:\Users\91789\OneDrive\Python\Experiment_2\outputs.py"
Percentage: 70.0
CGPA: 7.0
Grade: B+
```

Observation

- Conditional statements correctly evaluated logical conditions.
- Different blocks executed based on condition results.
- Improved program control and decision-making logic.

Result

All the programs in Experiment 2 were executed successfully and the expected outputs were obtained.
