Vivan Manghnani SAP Id - 590029475 Batch - 80

Q1 Check whether the given number is divisible by 3 and 5 both.

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

if num % 3 == 0 and num % 5 == 0:
    print("Number is divisible by both 3 and 5")
else:
    print("Number is not divisible by both 3 and 5")
```

```
Enter a number: 30
Number is divisible by both 3 and 5
```

Q2 Check whether a given number is multiple of five or not.

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

if num % 5 == 0:
    print("Number is a multiple of 5")
else:
    print("Number is not a multiple of 5")
```

```
Enter a number: 15
Number is a multiple of 5
```

Q3 Find the greatest among the two numbers. If numbers are equal then print “numbers are equal”.

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

if a > b:
    print("Greatest number is:", a)
elif b > a:
    print("Greatest number is:", b)
else:
    print("Numbers are equal")
```

```
Enter first number: 7
Enter second number: 8
Greatest number is: 8
```

Q4 Find the greatest among three numbers assuming no two values are same.

```
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("Greatest number is:", a)
elif b > a and b > c:
    print("Greatest number is:", b)
else:
    print("Greatest number is:", c)
```

```
Enter first number: 64
Enter second number: 86
Enter third number: 34
Greatest number is: 86
```

Q5 Check whether the quadratic equation has real roots or imaginary roots. Display the roots.

```
a = float(input("Enter value of a: "))
b = float(input("Enter value of b: "))
c = float(input("Enter value of c: "))

D = b**2 - 4*a*c

if D >= 0:
    root1 = (-b + D**0.5) / (2*a)
    root2 = (-b - D**0.5) / (2*a)

    if D == 0:
        print("Roots are real and equal")
```

```
    else:
        print("Roots are real and different")

    print("Root1 =", root1)
    print("Root2 =", root2)

else:
    print("Roots are imaginary")
    real = -b / (2*a)
    imag = (-D)**0.5 / (2*a)

    print("Root1 =", real, "+", imag, "i")
    print("Root2 =", real, "-", imag, "i")
```

```
Enter value of a: 36
Enter value of b: 49
Enter value of c: 72
Roots are imaginary
Root1 = -0.6805555555555556 + 1.2396951785832149 i
Root2 = -0.6805555555555556 - 1.2396951785832149 i
```

Q6 Find whether a given year is a leap year or not.

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

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

```
Enter year: 2026
It is not a Leap Year
```

Q7 Write a program which takes any date as input and display next date of the calendar.

```
day = int(input("Enter day: "))
month = int(input("Enter month: "))
year = int(input("Enter year: "))


if month in [1,3,5,7,8,10,12]:
    max_day = 31
elif month in [4,6,9,11]:
    max_day = 30
elif month == 2:

    if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):
        max_day = 29
    else:
        max_day = 28


day += 1

if day > max_day:
    day = 1
    month += 1

    if month > 12:
        month = 1
        year += 1

print("Next Date is:")
print("Day =", day, "Month =", month, "Year =", year)
```

```
Enter day: 27
Enter month: 9
Enter year: 2007
Next Date is:
Day = 28 Month = 9 Year = 2007
```

Q8 Print the grade sheet of a student for the given range of CGPA. Scan marks of five subjects and calculate the percentage.

```
name = input("Enter Name: ")
roll = input("Enter Roll Number: ")
sapid = input("Enter SAP ID: ")
sem = input("Enter Semester: ")
course = input("Enter Course: ")
```

```
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
percentage = total / 5


cgpa = percentage / 10


if 0 <= cgpa <= 3.4:
    grade = "F"
elif 3.5 <= cgpa <= 5.0:
    grade = "C+"
elif 5.1 <= cgpa <= 6:
    grade = "B"
elif 6.1 <= cgpa <= 7:
    grade = "B+"
elif 7.1 <= cgpa <= 8:
    grade = "A"
elif 8.1 <= cgpa <= 9:
    grade = "A+"
elif 9.1 <= cgpa <= 10:
    grade = "O (Outstanding)"
else:
    grade = "Invalid CGPA"


print("\n----------- GRADE SHEET -----------")
print("Name:", name)
print("Roll Number:", roll)
print("SAP ID:", sapid)
print("Semester:", sem)
print("Course:", course)

print("\nSubject Marks:")
print("Subject 1:", sub1)
print("Subject 2:", sub2)
print("Subject 3:", sub3)
print("Subject 4:", sub4)
print("Subject 5:", sub5)

print("\nTotal Marks:", total)
print("Percentage:", percentage, "%")
print("CGPA:", round(cgpa, 2))
print("Grade:", grade)
```

```
Enter Name: vivan manghnani
Enter Roll Number: 590029475
Enter SAP ID: 590029475
Enter Semester: 2
Enter Course: cse
Enter marks of Subject 1: 23
Enter marks of Subject 2: 45
Enter marks of Subject 3: 67
Enter marks of Subject 4: 31
Enter marks of Subject 5: 89

----------- GRADE SHEET -----------
Name: vivan manghnani
Roll Number: 590029475
SAP ID: 590029475
Semester: 2
Course: cse

Subject Marks:
Subject 1: 23.0
Subject 2: 45.0
Subject 3: 67.0
Subject 4: 31.0
Subject 5: 89.0

Total Marks: 255.0
Percentage: 51.0 %
CGPA: 5.1
Grade: B
```

Git hub link = https://github.com/vivanmanghnani46-beep/Python-experiments.git