

# AI Assisted Coding - Lab Test 1

## Q1. Code Generation with Conditions (5M)

**Prompt :** Generate a python program that accepts a year as input and check whether it is a leap year or not using conditional statements

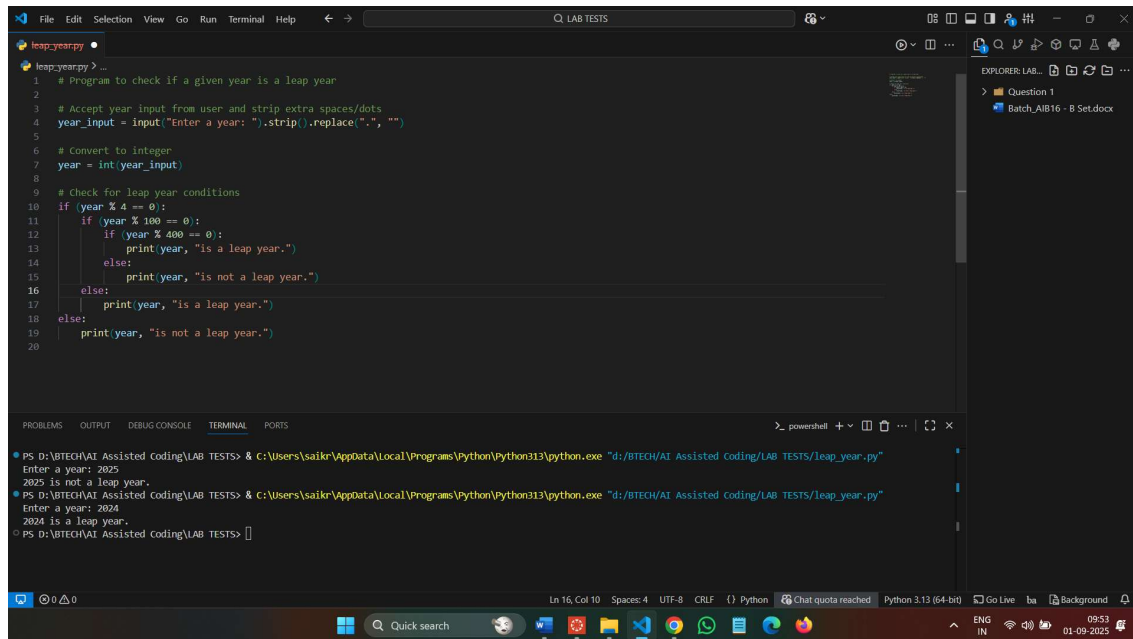
**Code :**

```
# Accept year input from user and strip extra spaces/dots
year_input = input("Enter a year: ").strip().replace(".", "")
```

```
# Convert to integer
year = int(year_input)
```

```
# Check for leap year conditions
if (year % 4 == 0):
    if (year % 100 == 0):
        if (year % 400 == 0):
            print(year, "is a leap year.")
        else:
            print(year, "is not a leap year.")
    else:
        print(year, "is a leap year.")
else:
    print(year, "is not a leap year.")
```

## Output :



```
1 # Program to check if a given year is a leap year
2
3 # Accept year input from user and strip extra spaces/dots
4 year_input = input("Enter a year: ").strip().replace(".", "")
5
6 # Convert to integer
7 year = int(year_input)
8
9 # Check for leap year conditions
10 if (year % 4 == 0):
11     if (year % 100 == 0):
12         if (year % 400 == 0):
13             print(year, "is a leap year.")
14         else:
15             print(year, "is not a leap year.")
16     else:
17         print(year, "is a leap year.")
18 else:
19     print(year, "is not a leap year.")
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS D:\BTECH\AI Assisted Coding\LAB TESTS> & c:\Users\sakir\AppData\Local\Programs\Python\Python313\python.exe "d:\BTECH\AI Assisted Coding\LAB TESTS\leap_year.py"
Enter a year: 2025
2025 is not a leap year.
PS D:\BTECH\AI Assisted Coding\LAB TESTS> & c:\Users\sakir\AppData\Local\Programs\Python\Python313\python.exe "d:\BTECH\AI Assisted Coding\LAB TESTS\leap_year.py"
Enter a year: 2024
2024 is a leap year.
PS D:\BTECH\AI Assisted Coding\LAB TESTS>
```

## Observation :

The program checks whether a given year is a leap year or not. A year is a leap year if it is divisible by 4, except years divisible by 100, unless they are also divisible by 400. The program takes a year as input and prints whether it is a leap year following these rules.