6.1.1 incremented date

A] Algorithm

Step 1: Start

Step 2: Input day

Step 3: Input month

Step 4: Input year

Step 5: if the year is a leap year

- If (year % 400 == 0) OR
- (year % 4 == 0 AND year % 100 != 0)
  → February has **29 days**
- Else
  → February has **28 days**

Step 6: Store number of days in each month

- January → 31
- February → 28 or 29
- March → 31
- April → 30
- May → 31
- June → 30
- July → 31
- August → 31
- September → 30
- October → 31
- November → 30
- December → 31

Step 7: If month < 1 OR month > 12
→ Print **"Invalid Date"** and Stop

Step 8: If day < 1 OR day > maximum days of that month
→ Print **"Invalid Date"** and Stop

Step 9: Increase day by 1
day = day + 1

Step 10: If day exceeds maximum days of that month

- Set day = 1
- Increase month by 1

Step 11:

If month > 12

- Set month = 1
- Increase year by 1

Step 12: Print the new date in format dd-mm-yyyy

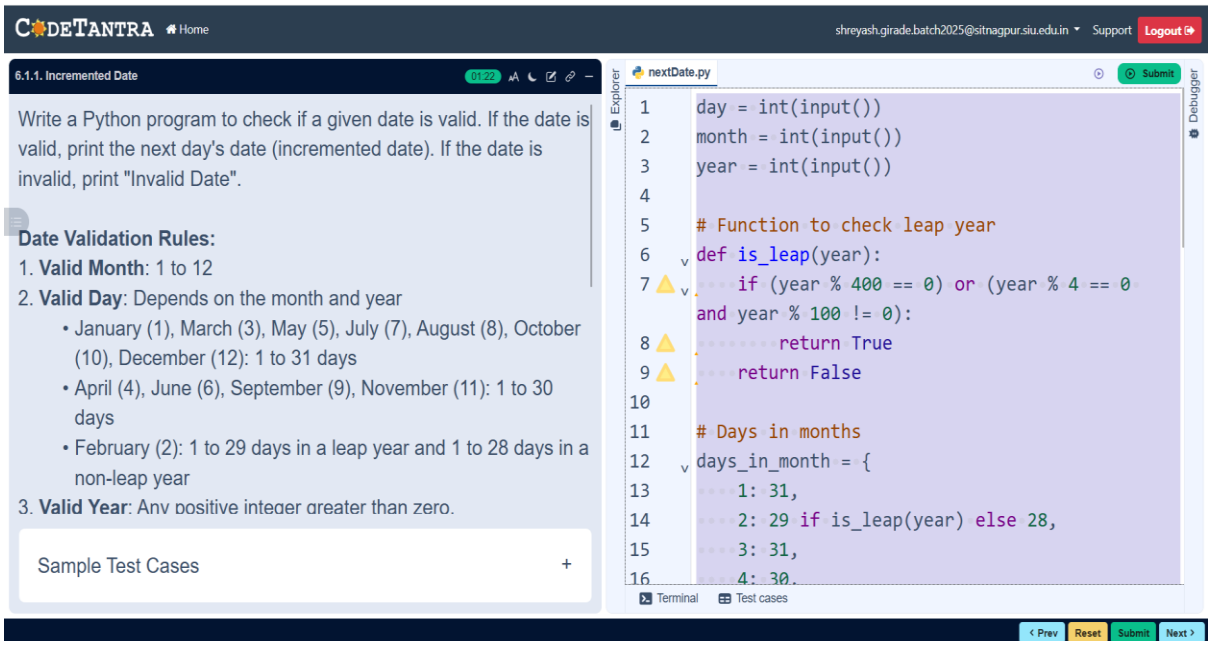
Step 13: Stop

B] code

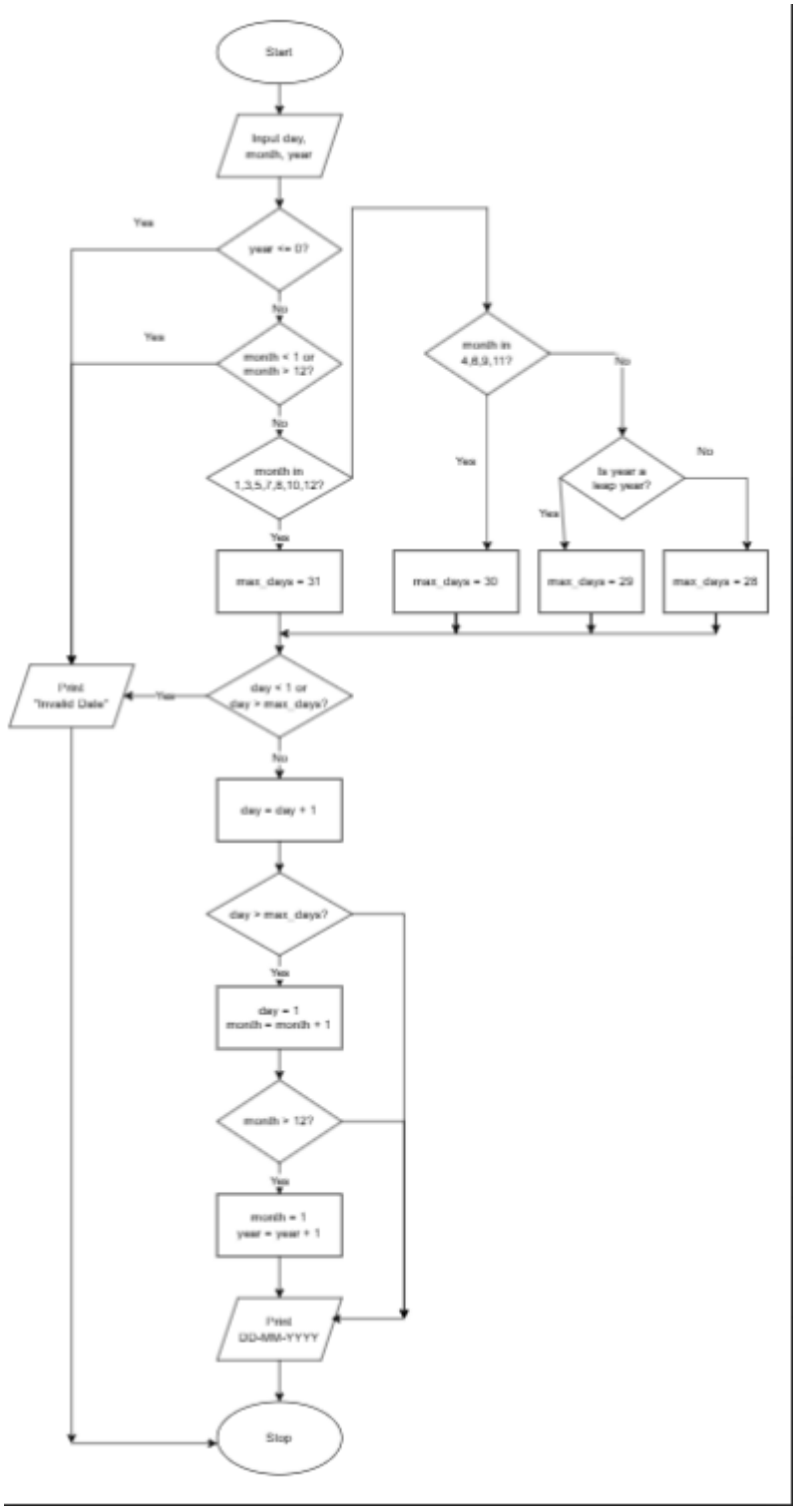
```
day = int(input())
month = int(input())
year = int(input())
def is_leap(year):
    if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):
        return True
    return False
days_in_month = {
    1: 31,
    2: 29 if is_leap(year) else 28,
    3: 31,
    4: 30,
    5: 31,
    6: 30,
    7: 31,
    8: 31,
    9: 30,
    10: 31,
    11: 30,
    12: 31
}
```

```
# Check valid month
if month < 1 or month > 12:
    print("Invalid Date")
elif day < 1 or day > days_in_month[month]:
    print("Invalid Date")
else:
    day += 1
    if day > days_in_month[month]:
        day = 1
        month += 1
        if month > 12:
            month = 1
            year += 1
    print(f"{day:02d}-{month:02d}-{year}")
```

C] output



D] flowchart


Start
Input day, month, year
year <= 0?
Yes
No
month < 1 or month > 12?
Yes
No
month in 1,3,5,7,8,10,12?
Yes
max_days = 31
month in 4,6,9,11?
No
Yes
max_days = 30
Is year a leap year?
No
Yes
max_days = 29
max_days = 28
day < 1 or day > max_days?
Yes
Print "Invalid Date"
No
day = day + 1
day > max_days?
Yes
day = 1
month = month + 1
month > 12?
Yes
month = 1
year = year + 1
Print DD-MM-YYYY
Stop