Leap Year Calculator

Python Mini Project

-by Roll no. 49, 50, 51

AIM: To create a functionality in which when user will input a range of two dates. Then your module will find and print all years in the range of given dates those are leap years separately and rest of the years those are non-leap separately.

Sample Input:

Enter the starting year: 12/12/2018

Enter the ending year: 12/12/2024

Sample Output:

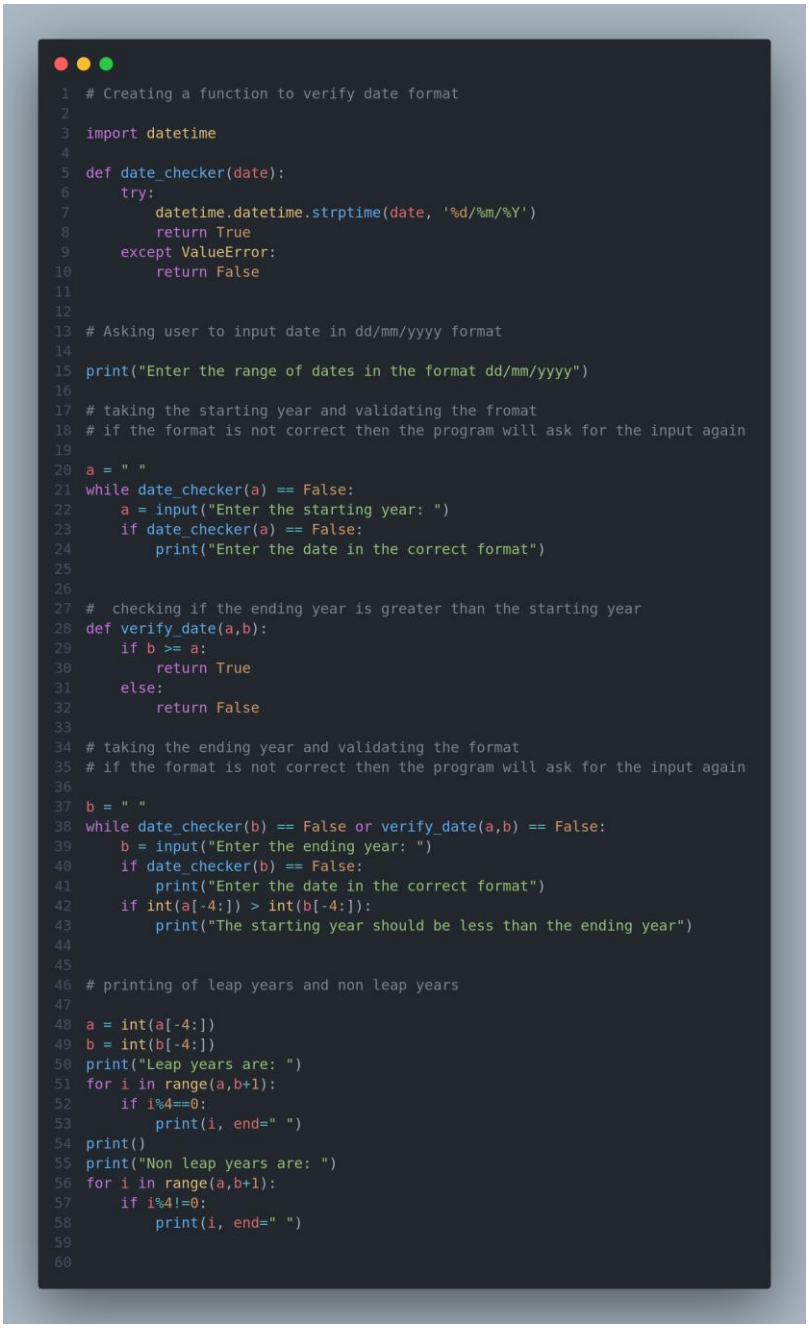
Leap years are:

2020 2024

Non leap years are:

2018 2019 2021 2022 2023

CODE:



```python
# Creating a function to verify date format

import datetime

def date_checker(date):
    try:
        datetime.datetime.strptime(date, '%d/%m/%Y')
        return True
    except ValueError:
        return False


# Asking user to input date in dd/mm/yyyy format

print("Enter the range of dates in the format dd/mm/yyyy")

# taking the starting year and validating the fromat
# if the format is not correct then the program will ask for the input again

a = " "
while date_checker(a) == False:
    a = input("Enter the starting year: ")
    if date_checker(a) == False:
        print("Enter the date in the correct format")


#  checking if the ending year is greater than the starting year
def verify_date(a,b):
    if b >= a:
        return True
    else:
        return False

# taking the ending year and validating the format
# if the format is not correct then the program will ask for the input again

b = " "
while date_checker(b) == False or verify_date(a,b) == False:
    b = input("Enter the ending year: ")
    if date_checker(b) == False:
        print("Enter the date in the correct format")
    if int(a[-4:]) > int(b[-4:]):
        print("The starting year should be less than the ending year")


# printing of leap years and non leap years

a = int(a[-4:])
b = int(b[-4:])
print("Leap years are: ")
for i in range(a,b+1):
    if i%4==0:
        print(i, end=" ")
print()
print("Non leap years are: ")
for i in range(a,b+1):
    if i%4!=0:
        print(i, end=" ")


```

Explanation:

We have used the datetime module to check whether the input date is in correct format of not that is in the format of DD/MM/YYYY. If the user inputs a date in a wrong format the program will ask the user to input the date again.

The program then verifies if the input ending year is if smaller than the input ending year. If so, happens then the program asks the user to input the ending year again.

After getting the correct input values the program then displays the leap years in that range of time and then displays the non-leap years lying in that range of time in another line.

Sample Test: