

Project 4 :Create an Advanced Calendar App.

```
#author: Amey Vasant Girkar
from datetime import date
import calendar
import time
import re
import sys
#import geocoder #mentioned in problem statement

def display(year, month, date1):
    print("=" * 30)
    cal = calendar.month(year, month)
    rday = ('\\b' + date1 + '\\b').replace('\\b ', '\\s')
    rdayc = "\\033[7m" + date1 + "\\033[0m"
    print(re.sub(rday, rdayc, cal))

def readvalue():
    try:
        a = int(input("Enter a number between -12 to 12 :"))
        assert (a >= -12) and (a <= 12)
    except ValueError:
        print("Enter integer value only")
        a = int(input("Enter a number between -12 to 12 :"))
    except AssertionError:
        print("Entered value is not in range")
        a = int(input("Enter a number between -12 to 12 :"))

    return a

def date_manipulate(date1, new_month, new_year):
    if (date1 == '31') and (new_month in (4, 6, 9, 11)):
        new_date = '30'
    elif (new_month == 2) and (date1 in ['29', '30', '31']):
        if ((new_year % 400 == 0)) or ((new_year % 4 == 0) and (new_year % 100
!= 0)):
            new_date = '29'
        else:
            new_date = '28'
    else:
        new_date = date1
    return str(new_date)

#set firstday of calender to sunday
```

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calendar.setfirstweekday(calendar.SUNDAY)
if len(sys.argv) > 1:
    # for i in L:
    #     if len(i)<=2 and i.isdigit():
    #         date1=i
    #     elif len(i) == 4 and i.isdigit():
    #         year=int(i)
    #     elif i.isalpha() or
    #         month=i
    date1 = str(sys.argv[1])
    month = int(sys.argv[2])
    year = int(sys.argv[3])
    print(date1, month, year)
else:
    today = date.today()
    year = today.year
    month = today.month
    date1 = today.day.__str__().rjust(2)
    #print(date,today,year,month)
print(year, month, date1)
print("current calender")
display(year, month, date1)
a = readvalue()

new_month = month + a
new_year = year

if (-12 < new_month) and (new_month <= 0):
    while (new_month <= 0):
        new_month = new_month + 12
        new_year = new_year - 1

elif (0 < new_month) and (new_month <= 12):
    new_month = new_month
    new_year = new_year

elif (new_month > 12) and (new_month <= 24):
    while (new_month > 12):
        new_month = new_month - 12
        new_year = new_year + 1
    #print(new_year,new_month)

new_date = date_manipulate(date1,new_month,new_year)

if a > 0:
    print("\nCalender after", a, "month")

```

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elif a < 0:
    print("\nCalender before ", a, "month")
else:
    print("Calender without change")

display(new_year, new_month, new_date)

```

The screenshot shows a code editor with a file named `main.py` and a console window displaying the program's output.

Code Editor (main.py):

```

1 #author: Amey Vasant Girkar
2 from datetime import date
3 import calendar
4 import time
5 import re
6 import sys
7 #import geocoder #mentioned in problem statement
8
9 def display(year, month, date1):
10     print("\n" * 30)
11     cal = calendar.month(year, month)
12     rday = ('\b' + date1 + '\b').replace('\b ', '\s')
13     rdayc = "\033[7m" + date1 + "\033[0m"
14     print(re.sub(rday, rdayc, cal))
15
16
17 def readvalue():
18     try:
19         a = int(input("Enter a number between -12 to 12 :"))
20         assert (a >= -12) and (a <= 12)
21     except ValueError:
22         print("Enter integer value only")
23     except AssertionError:
24         print("Entered value is not in range")
25     a = int(input("Enter a number between -12 to 12 :"))
26     return a
27
28
29
30
31 def date_manipulate(date1, new_month, new_year):
32     if (date1 == '31') and (new_month in (4, 6, 9, 11)):
33         new_date = '30'
34     elif (new_month == 2) and (date1 in ['29', '30', '31']):

```

Console Output:

```

~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
      September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Enter a number between -12 to 12 :-23
Entered value is not in range
Enter a number between -12 to 12 :-10

Calender before -10 month
=====
      November 2020
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30

~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
      September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4

```

Output Without command line argument

```
~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
    September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Enter a number between -12 to 12 :0
Calender without change
=====
    September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30
```

```
~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
    September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Enter a number between -12 to 12 :23
Entered value is not in range
Enter a number between -12 to 12 :3

Calender after 3 month
=====
    December 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31
```

```
~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
    September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Enter a number between -12 to 12 :a
Enter integer value only
Enter a number between -12 to 12 :5

Calender after 5 month
=====
    February 2022
Su Mo Tu We Th Fr Sa
                1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28
```

```
~/WrithingIllustriousAlgorithms$ python main.py
2021 9 19
current calender
=====
    September 2021
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

Enter a number between -12 to 12 :-23
Entered value is not in range
Enter a number between -12 to 12 :-10

Calender before -10 month
=====
    November 2020
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6  7
 8  9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
```

With command line Argument(date manipulation ,leap year)

```
~/WrithingIllustriousAlgorithms$ python main.py 31 1 2020
31 1 2020
2020 1 31
current calender
=====
      January 2020
Su Mo Tu We Th Fr Sa
                1  2  3  4
 5  6  7  8  9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31
```

Enter a number between -12 to 12 :1

Calender after 1 month

```
=====
      February 2020
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
```

```
~/WrithingIllustriousAlgorithms$ python main.py 29 2 2020
29 2 2020
2020 2 29
current calender
=====
```

```
      February 2020
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
```

Enter a number between -12 to 12 :12

Calender after 12 month

```
=====
      February 2021
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6
 7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28
```

```
~/WrithingIllustriousAlgorithms$ python main.py 15 8 2020
15 8 2020
2020 8 15
current calender
=====
      August 2020
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
```

Enter a number between -12 to 12 :4

Calender after 4 month

```
=====
      December 2020
Su Mo Tu We Th Fr Sa
        1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
```