

# CT-4(MINI-PROJECT)

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SECTION: X2

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## PROJECT- CALENDAR

### SOURCE CODE

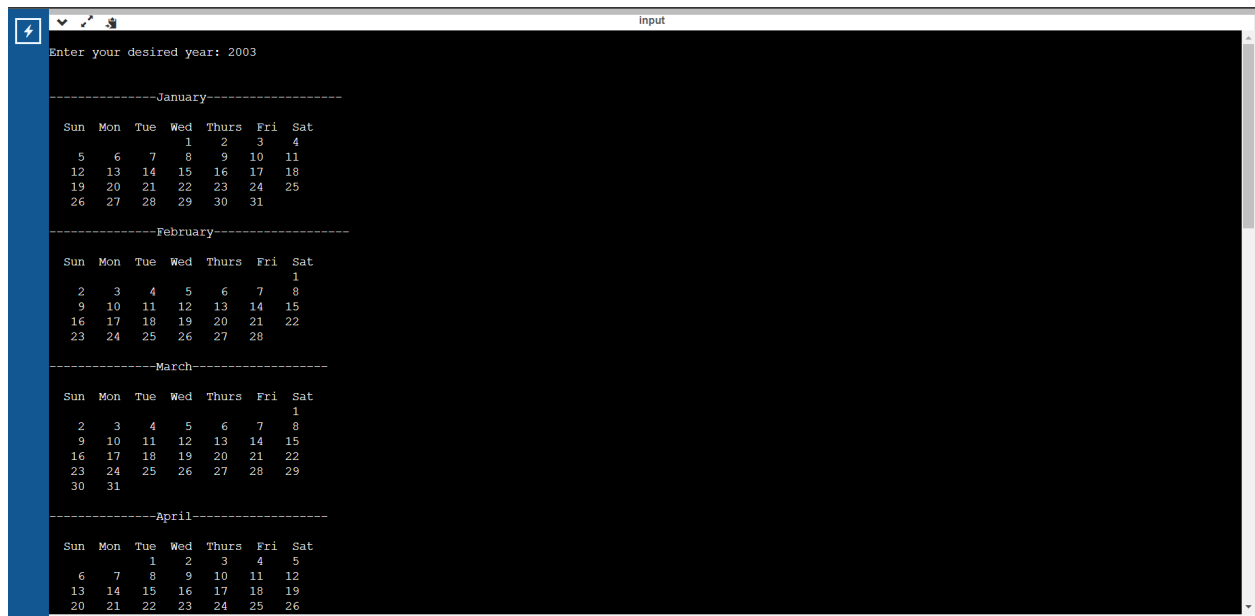
```
#include <stdio.h>
#include <stdlib.h>
int get_1st_weekday(int year)
{
    int d;
    //using Zeller's Algorithm
    d = (((year - 1) * 365) + ((year - 1) / 4) - ((year - 1) / 100) + ((year) / 400) + 1) % 7;
    return d;
}
int main()
{
    int year,month,day,daysInMonth,weekDay=0,startingDay;
    printf("\nEnter your desired year: ");
    scanf("%d",&year);

    char
    *months[]={"January","February","March","April","May","June","July","August","September","October","November","December"};
    int monthDay[]={31,28,31,30,31,30,31,31,30,31,30,31};

    if((year%4==0&&year%100!=0)||year%400==0)
        monthDay[1]=29;
    startingDay=get_1st_weekday(year);
    for(month=0;month<12;month++)
    {
        daysInMonth=monthDay[month];
        printf("\n\n-----%s-----\n",months[month]);
        printf("\n Sun Mon Tue Wed Thurs Fri Sat\n");
```

```
for(weekDay=0;weekDay<startingDay;weekDay++)
    printf("  ");
for(day=1;day<=daysInMonth; day++)
{
    printf("%5d",day);
    if(++weekDay>6)
    {
        printf("\n");
        weekDay=0;
    }
    startingDay=weekDay;
}
}
```

# IMPLEMENTATION-



A terminal window titled "input" with a blue sidebar on the left containing a lightning bolt icon. The terminal displays the text "Enter your desired year: 2003". Below this, it shows the months January, February, March, and April, each followed by a calendar grid. The grids are formatted with days of the week as headers and dates as numbers. Some dates are missing, indicating the start of the month on a specific day of the week.

Enter your desired year: 2003

-----January-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
			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	

-----February-----

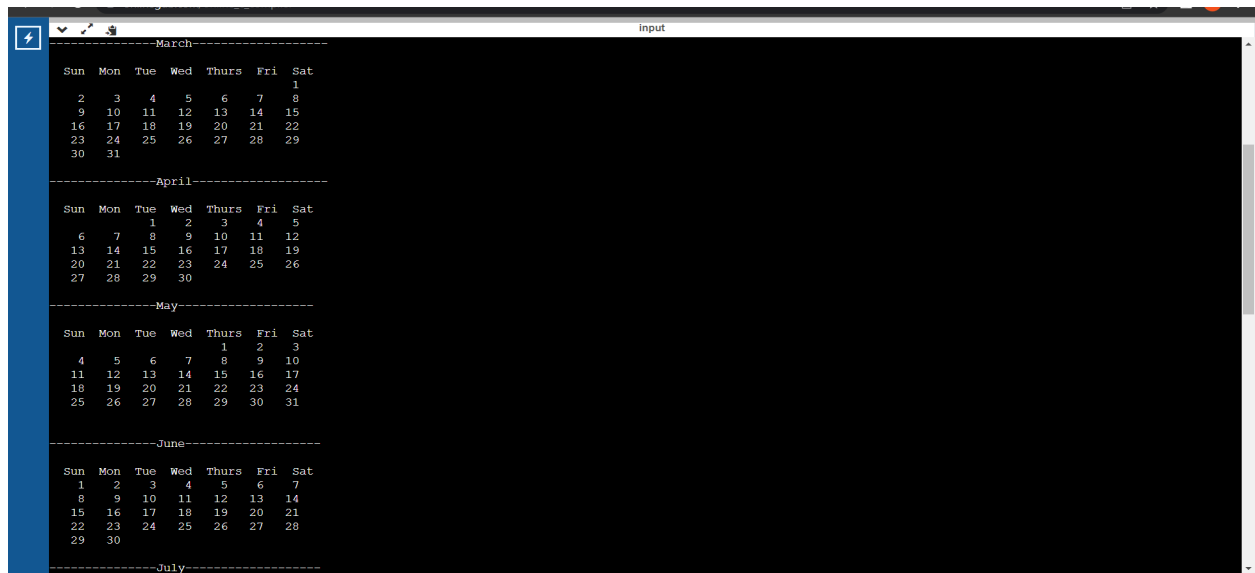
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

-----March-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
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					

-----April-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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



A terminal window titled "input" with a blue sidebar on the left containing a lightning bolt icon. The terminal displays the months March, April, May, and June, each followed by a calendar grid. The grids are formatted with days of the week as headers and dates as numbers. Some dates are missing, indicating the start of the month on a specific day of the week.

-----March-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
						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					

-----April-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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			

-----May-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
				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

-----June-----

Sun	Mon	Tue	Wed	Thurs	Fri	Sat
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					

-----July-----

July						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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		
August						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
					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						
September						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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			
October						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
			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	
November						

September						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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			
October						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
			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	
November						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
					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						
December						
Sun	Mon	Tue	Wed	Thurs	Fri	Sat
		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		

...Program finished with exit code 0  
Press ENTER to exit console.

## **EXPLANATION-**

This program is used to print the 12 -month calendar or the desired calendar using zeller's algorithm with the correct date and month.

A pop up line would appear asking the user for "entering the desired year"

For eg: let's say that we put 2003 into it and press enter

Thereafter we can see the entire yearly calendar of the year 2003 .

## **ZELLER'S ALGORITHM**

$$d = (\text{year} - 1) * 365 + ((\text{year} - 1) / 4) - ((\text{year} - 1) / 100) + ((\text{year}) / 400) + 1) \% 7$$

Zeller's congruence is an algorithm devised by Christian Zeller to **calculate the day of the week for any Julian or Gregorian calendar date**. It can be considered to be based on the conversion between Julian day and the calendar date.

It is an algorithm to find the day of the week for any date.