

# CT-4(MINI-PROJECT)

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## PROJECT- CALENDAR

### SOURCE CODE

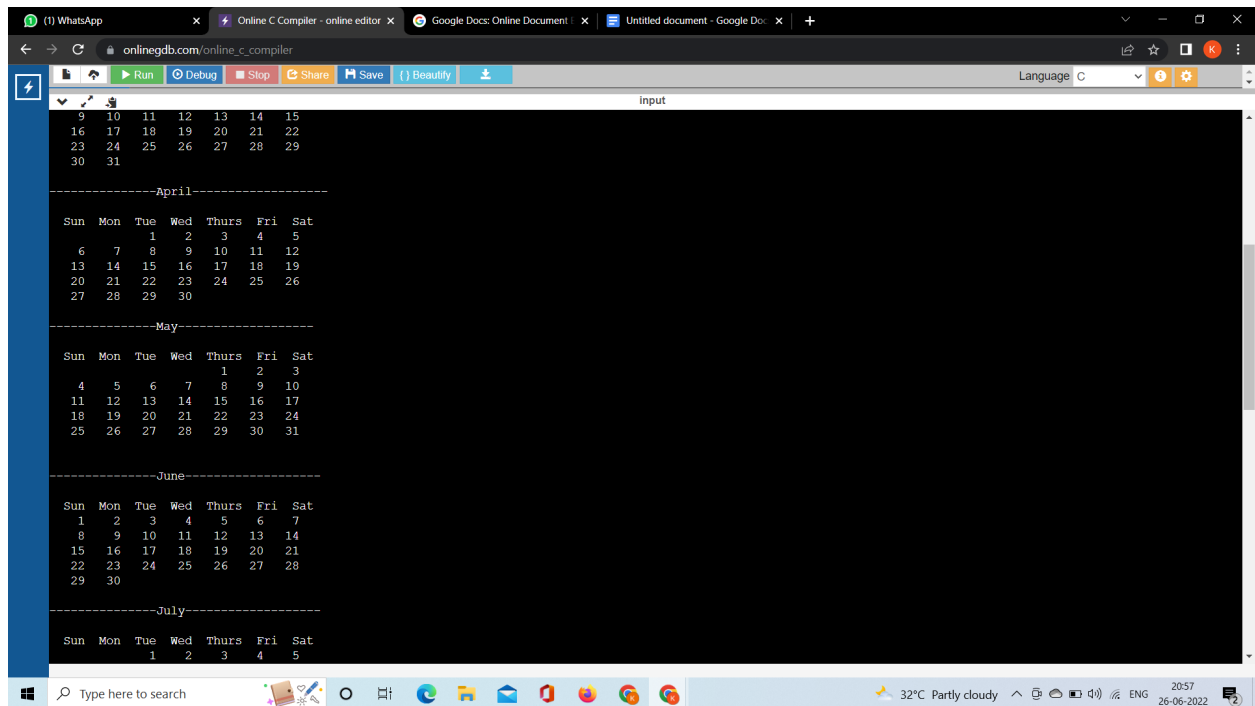
```
#include <stdio.h>
#include <stdlib.h>
int get_1st_weekday(int year)
{
    int d;
    //using Zeller's Algorithm
    d = (((year - 1) * 365) + ((year - 1) / 4) - ((year - 1) / 100) + ((year) / 400) + 1) % 7;
    return d;
}
int main()
{
    int year,month,day,daysInMonth,weekDay=0,startingDay;
 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



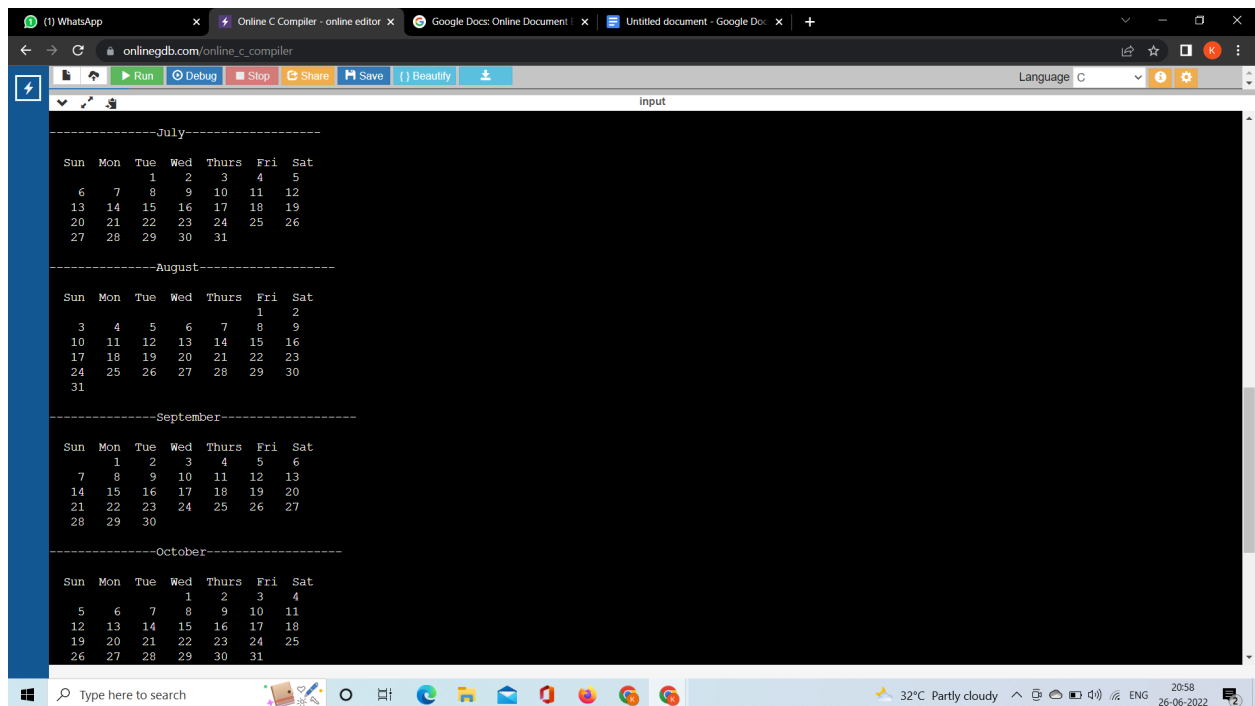
The screenshot shows a web browser window with the URL `onlinegdb.com/online_c_compiler`. The browser's address bar and tabs are visible at the top. The compiler interface includes a toolbar with buttons for Run, Debug, Stop, Share, Save, and Beautify. The main area displays the output of a C program, which is a calendar for the months of April, May, and June. The calendar is formatted with days of the week (Sun, Mon, Tue, Wed, Thurs, Fri, Sat) and dates. The input field at the top of the compiler is empty.

```
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
```



The screenshot shows the same online C compiler interface as the previous one, but the output now displays the calendar for the months of July, August, September, and October. The format remains consistent with the previous months, showing days of the week and dates.

```
-----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
```

The screenshot shows a web browser window with multiple tabs. The active tab is 'onlinegdb.com/online\_c\_compiler'. The browser's address bar shows the URL. Below the browser window, there is a toolbar with buttons for 'Run', 'Debug', 'Stop', 'Share', 'Save', and 'Beautify'. The main area of the browser displays the output of a C program, which is a 12-month calendar. The calendar is displayed in a text-based format with days of the week (Sun, Mon, Tue, Wed, Thurs, Fri, Sat) and dates. The months shown are October, November, and December. The program has finished with exit code 0, and the user is prompted to press ENTER to exit the console.

```
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
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

-----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

### 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.