CALENDAR

A Mini Project in C

Academic Year: 2021-22 ODD SEMESTER

Department	: B.Tech Computer science and Engineering with specialization in Artificial Intelligence and Machine Learning.
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Course Title	: Programming for Problem Solving

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AIM

To create a Calendar which allows user to view calendar in a neat and convenient manner.

ABSTRACT

This project is a simple project built in C language.
This project has following features –

1. It displays a nicely formatted calendar of every day of every month.
2. The calendar application presented here is a very simple console application developed using C programming language.
3. It is compiled in Eclipse using eclipse java compiler.

ALGORITHM

Step 1: Start.

Step 2: Declare int variable- get_1st_weekDay, year, day.

Step 3: Statement: day=Remainder of {[(year-1) × 365] + [(year-1)/4]– [{year-1)/100] + [(year/400)+1]} divided by 7.

Step 4: Declare int variables- year, month, day, daysInMonth, weekday, startingDay.

Step 5: Print “Enter your desired year:” in next line.

Step 6: Read the Year.

Step 7: To print months, we use pointer array.

Step 8: Declare array- monthDay.

Step 9: Using if condition to define the monthDay for month 1.

Step 10: Statement: startingDay=get_1st_weekDay(year).

Step 11: Initialising a “for” loop with regard to the month.

Step 12: Print the name of the month.

Step 13: Print the name of the days.

Step 14: Initialising another “for” loop with regard to the week.

Step 15: Initialising another “for” loop with regard to the day.

Step 16: Print the day.

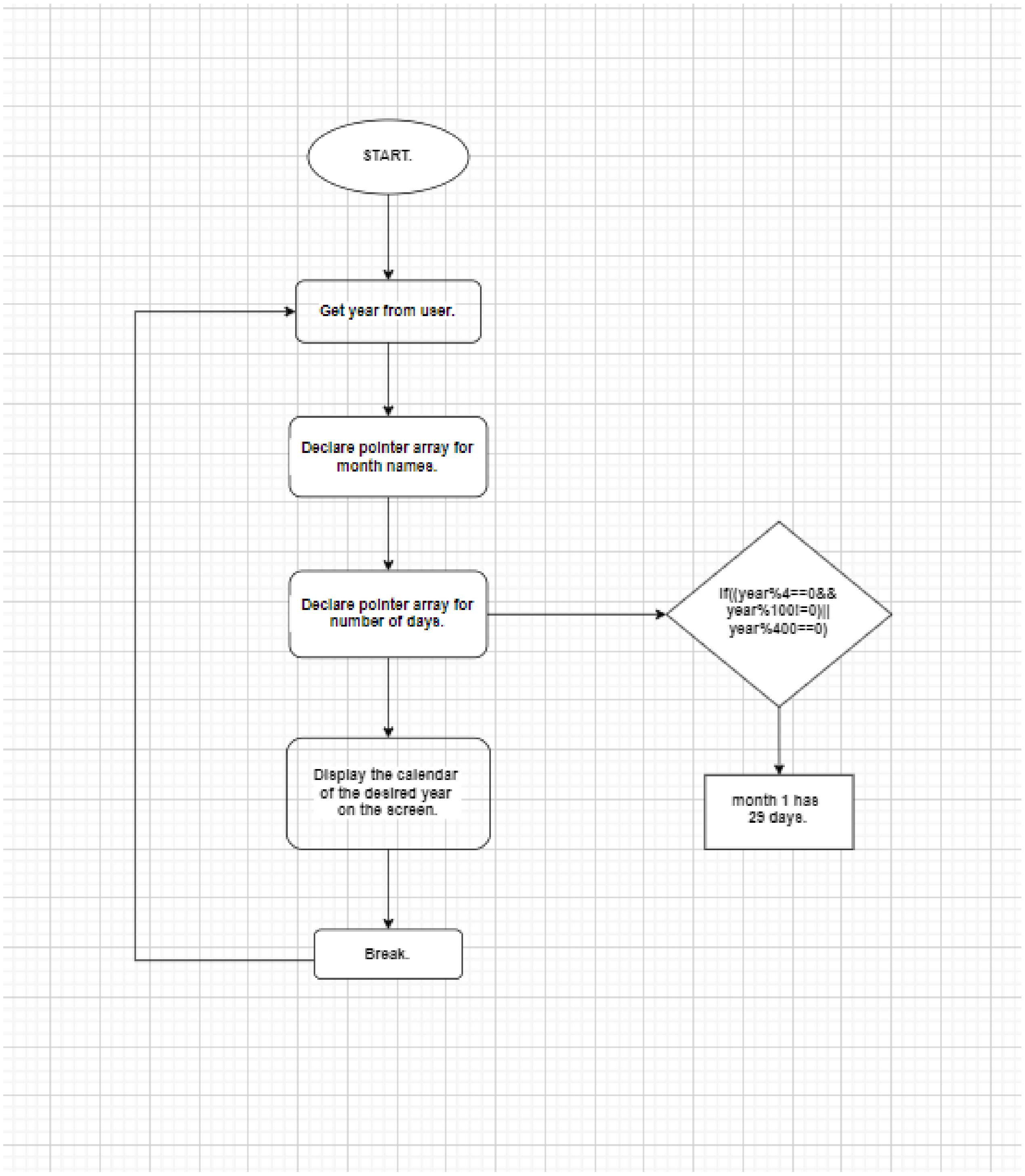
Step 17: Using if condition to set the format of the calender by aligning the dates and days in the proper order.

Step 18: Statement: startingDay=weekday.

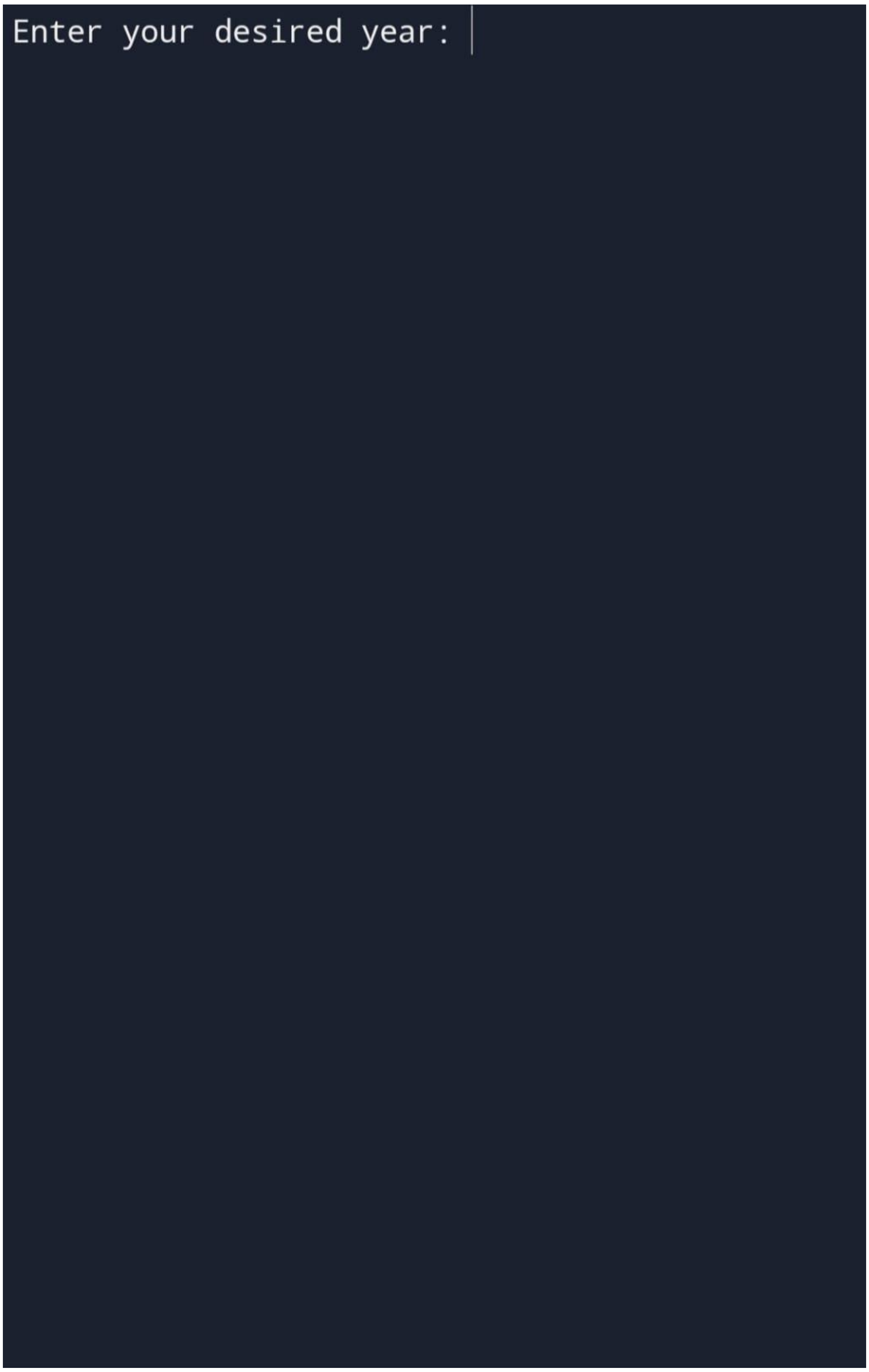
SOURCE CODE

```
#include<stdio.h>
#include<stdlib.h>

 int get_1st_weekDay(int year){
    int day;
    day=(((year-1)*365)+((year-1)/4)-((year-1)/100)+((year)/400)+1)%7;
    return day;
 }
 int main()
 {

    int year, month, day, daysInMonth, weekDay, startingDay;
    printf("\nEnter your desired year: ");
    scanf("%d",&year);

    char 
*months[]={"January","February","March","April","May","June","July","August","S
eptemeber","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--------------------",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;
           }
      }

   }
```

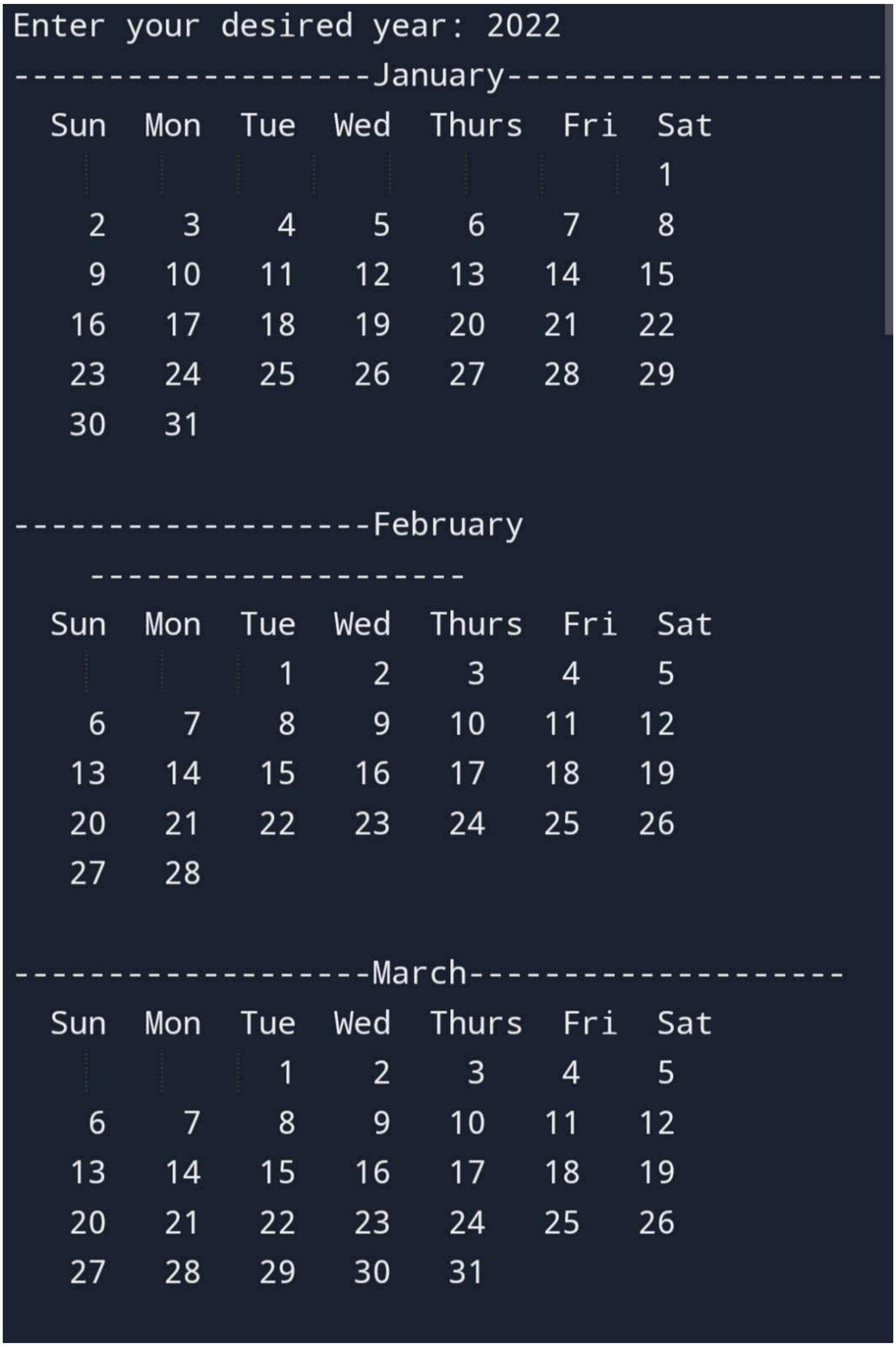
FLOWCHART


START.
Get year from user.
Declare pointer array for month names.
Declare pointer array for number of days.
If((year%4==0&& year%100!=0)|| year%400==0)
month 1 has 29 days.
Display the calendar of the desired year on the screen.
Break.

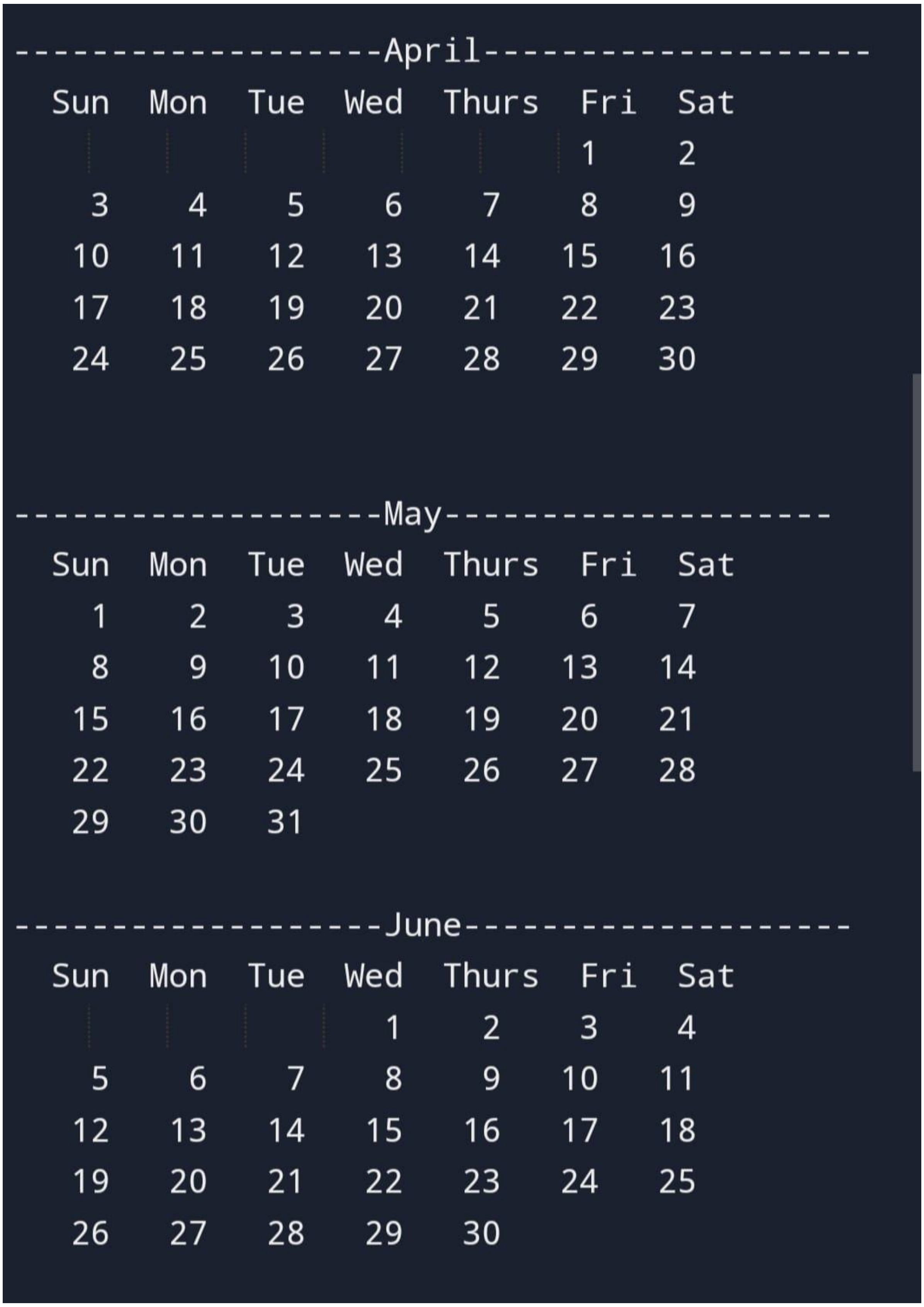
OUTPUT



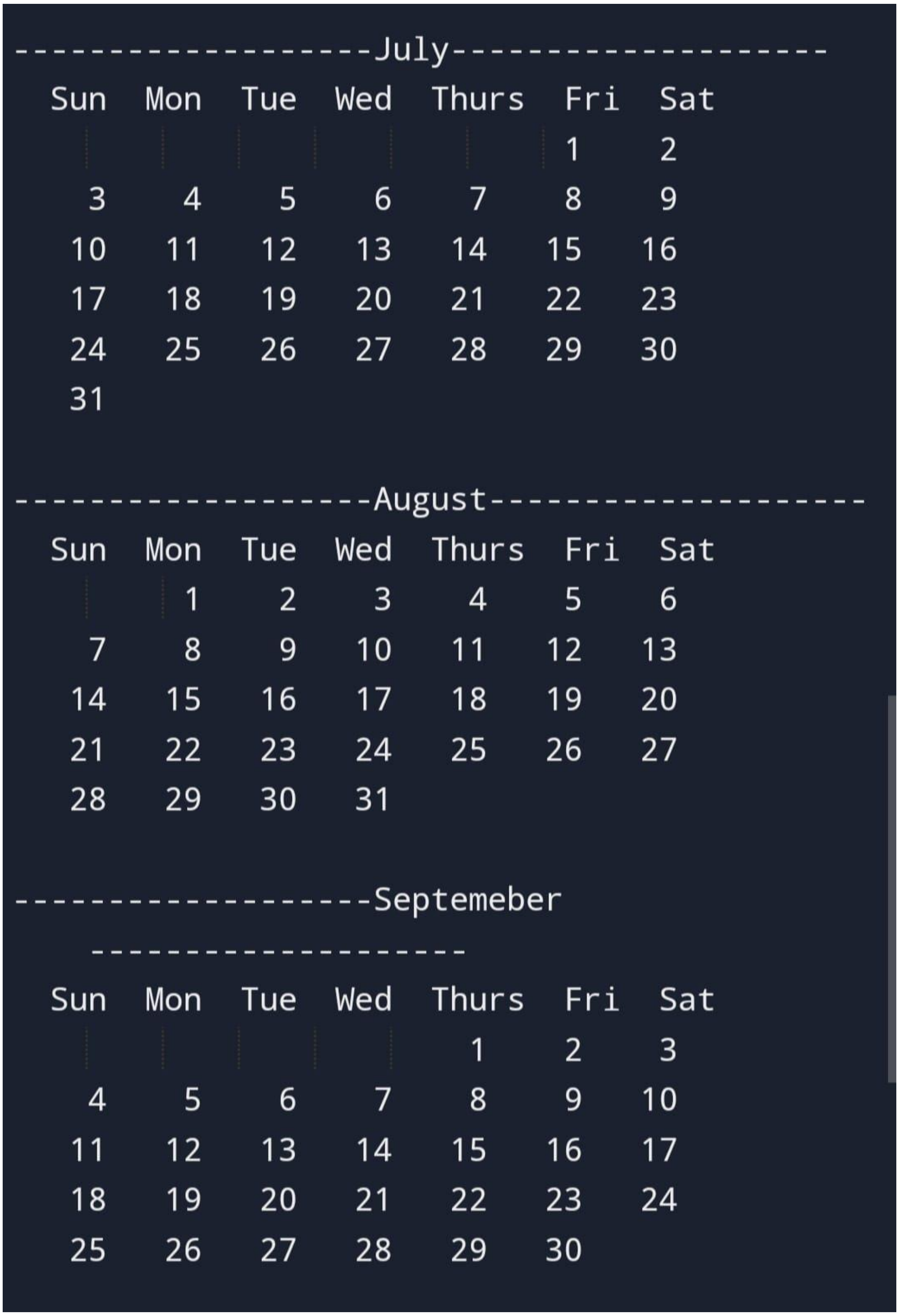
```
Enter your desired year:
```



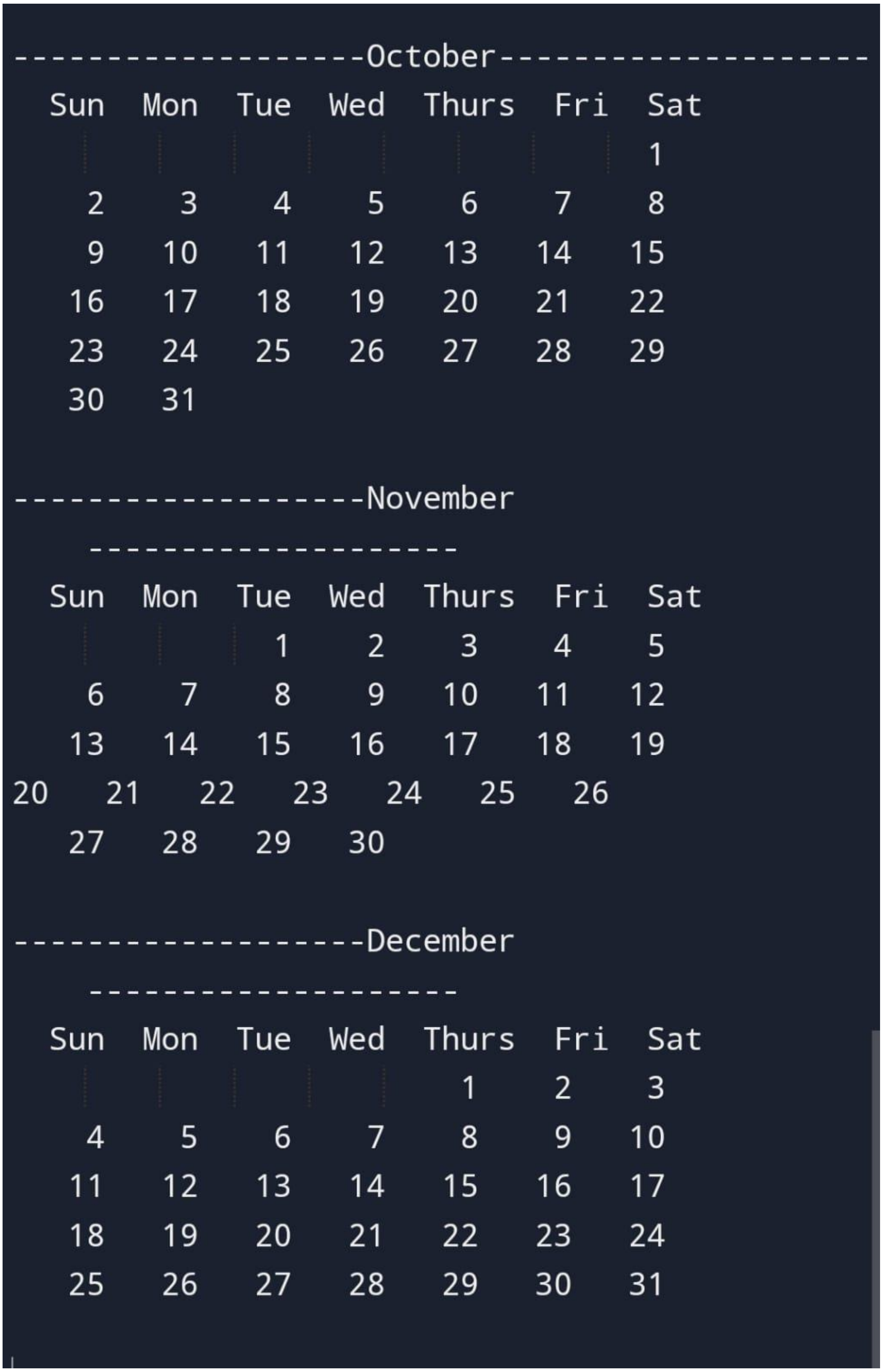
```
Enter your desired year: 2022
-------------------January-------------------
  Sun  Mon  Tue  Wed  Thurs  Fri  Sat
                                   1
    2    3    4    5    6    7    8
    9   10   11   12   13   14   15
   16   17   18   19   20   21   22
   23   24   25   26   27   28   29
   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   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--------------------
  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

-------------------Septemeber
    --------------------
  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

-------------------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
```

RESULT

Our project calendar provides an easy access to a formatted calendar of any desired year in a neat and efficient manner.
Our project has succeeded in managing the data and providing the best output.

CONCLUSION

C is most useful for embedded systems, or applications that require the ability to be light-weight and have precise control over system resources. C is lacking a lot of the functionality that more contemporary languages feature, but remains a core tool for Unix developers.

The two developers have tried their best to create a simple and optimised program that works as a calendar, with a user-friendly terminal for the executable file of the source code.