Hobby Project

“CALANDER”

Under the guidance of

Prof. Arpita Patil

Computer Science Engg. Department

S.G.B.I.T. Belagavi

Name of student	USN
Mr. Swapnadeep Kapuri	**2BU20CS098**
Mr. Shivaraj Sheelavant	**2BU20CS079**
Miss Rohini Desai	**2BU20CS062**
Miss Shravani M. Sagaram	**2BU20CS081**

Department of Computer Science Engineering

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Shivabasavanagar, Belagavi-10, Karnataka.

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Shivabasavanagar, Belagavi-10, Karnataka.

Department of Computer Science Engineering

CERTIFICATE

Certified that the Project Work entitled **"CALENDAR"** is a bonafide work carried out by **Mr. Swapnadeep Kapuri (2BU20CS098)**, **Mr. Shivaraj Sheelavant (2BU20CS079)**, **Miss Rohini Desai(2BU20CS062)**, **Mr. Shravani M. Sagaram (2BU20CS081)**, in partial fulfillment for the award of Degree of Bachelor of Engineering in Computer Science and Engineering of the Visvesvaraya Technological University, Belagavi, during the year 2020- 2021. The Project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Bachelor of Engineering Degree.

Signature of Guide

Prof. Arpita Patil

Signature of HOD

Dr B.S.Halakarnimath

Signature of Principal

Dr.B.R. Patagundi

Abstract

The calendar program application presented here is a very simple console application developed using C programming language. The calendar program will print a calendar of the whole year. It displays nicely formatted calendar of every month. With the help of calendar program one can find the day by entering the date. It provides a very simple interface and displays days, dates, moths and year based on the input given by the user. It is built without using any graphic properties. It is compiled in code::blocks using GCC compiler.

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Belagavi

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Mr. Swapnadeep Kapuri

Mr. Shivaraj Sheelavant

Miss Rohini Desai

Miss Shravani M. Sagaram

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1.INTRODUCTION

A calendar is a system of organizing days. This is done by giving names to periods of time, typically days, weeks, months and years. This report has described the successful design and development of a calendar program. This report outlines the design and development of a computer software system to code blocks. The program is written in C language.

The calendar program application basically provides three different options to choose. The options are,

1. To display the calendar of a particular year

   If a user enters a particular year, the calendar of the corresponding year is displayed which consists of the name of the month, name of the week day and the dates.

2. To find out the day corresponding to the given date

   If a user gives a date as an input in the form of dd/mm/yyyy, day corresponding to that date and the name of the month are displayed.

3. To find out whether the given year is leap year or not.

   If a user enters the year, this calendar program application displays whether the year is a leap year or not.

All the above functions of the calendar program application are executed using the conditional statements such as **if else**, **switch case** and looping statements such as **for** loop, **while** loop.

1.1 BACKGROUND

Any computer software or application requires some form of programming to run effectively and perform a desired task. Programming has become a very versatile and powerful tool in the modern world. C programming first appeared in 1972 having been developed by Dennis Ritchie, though programming techniques and languages had been around for a lot longer.

Our first exposure to C programming was the simple yet famous “hello world!” program. The following construct illustrates this simple program and shows some of the syntax used.

As a language, C is relatively easy to learn though it is more cryptic and example above broken-down into the following steps:

The #include is a pre-processor directive. The pre-processor is the first tool to read the source code and it is instructed to substitute the entire line with the <stdio.h>. The next line indicates that a function named “main” is being defined. The “main” function serves a special purpose in C programming; it is used to begin program execution. The “int” is a type specifier and its purpose is to indicate that the value returned to the invoker as a result of reading the main function, is an integer.

Apart from this we also have looping statements and conditional statements. **Loops** in C language are implemented using conditional statements. A block of loop control statements in C are executed for number of times until the condition becomes false. **Conditional Statements** in C programming are used to make decisions based on the conditions. Conditional statements execute sequentially when there is no condition around the statements. If you put some condition for a block of statements, the execution flow may change based on the result evaluated by the condition.

2. Problem Definition

Develop a menu driven Calendar program application using C language for the following operations

1. Display the calendar of a particular year
2. Display the day corresponding to the given date
3. Display whether the given year is leap year or not.

Objectives:

1. Staying organized and enhancing productivity
2. Planning our daily activities
3. Managing a daily schedule
4. Useful exposure to the C Programming language
5. Work effectively as a group and manage all the tasks effectively
6. Learning our ability in C PROGRAMMING

3.HARDWARE AND SOFTWARE REQUIREMENTS

HARDWARE

Processor AMD Ryzen 5 3450U with Radeon Vega Mobile Gfx 2.10 GHz

Installed RAM8.00 GB (5.92 GB usable)

System type 64-bit operating system, x64-based processor

SOFTWARE

The program is compiled in code::blocks using GCC compiler.

4. Code

```
#include<string.h>
#include<stdio.h>
 #include<stdlib.h>
char s[50], d[10];
int dayNumber(int day, int month, int year)
{
static int t = { 0, 3, 2, 5, 0, 3, 5, 1, 4, 6, 2, 4 };
  year -= month < 3;
  return (year + year / 4 - year / 100 + year / 400 + t[month - 1] + day) % 7;
}
char* getMonthName(int monthNumber)
{
    char* month;
   switch (monthNumber)
    {
    case 0:month = "January";
          break;
    case 1:month = "February";
          break;
    case 2: month = "March";
          break;
    case 3: month = "April";
          break;
    case 4: month = "May";
          break;
```

```
  case 5: month = "June";
          break;
   case 6: month = "July";
      break;
   case 7: month = "August";
          break;
   case 8: month = "September";
          break;
   case 9: month = "October";
          break;
   case 10: month = "November";
          break;
   case 11: month = "December";
          break;
   }
   return month;
}
int numberOfDays(int monthNumber, int year)
{
// January
 if (monthNumber == 0)
       return (31);
  // February
 if (monthNumber == 1)
   {
      // If the year is leap then Feb
```

```
  // has 29 days
   if (year % 400 == 0|| (year % 4 == 0&& year % 100 != 0))
            return (29);
  else
    return (28);
      }
      // March
 if (monthNumber == 2)
         return (31);
   // April
 if (monthNumber == 3)
         return (30);
  // May
if (monthNumber == 4)
         return (31);
 // June
if (monthNumber == 5)
         return (30); // July
if (monthNumber == 6)
         return (31);
  // August
if (monthNumber == 7)
         return (31);
// September
if (monthNumber == 8)
   return (30);
```

```
    // October
  if (monthNumber == 9)
            return (31);
  // November
  if (monthNumber == 10)
            return (30);
  // December
  if (monthNumber == 11)
            return (31);
}
  void printCalendar(int year)
     {
       printf (" Calendar - %d\n\n", year);
     int days;
       int current = dayNumber(1, 1, year);
         // i for Iterate through months
         // j for Iterate through days
     // of the month - i
     for (int i = 0; i < 12; i++)
        {
          days = numberOfDays(i, year);
          printf("\n ------------%s-------------\n", getMonthName(i));

           printf(" Sun  Mon  Tue  Wed  Thu  Fri  Sat\n");
           int k;
      for (k = 0; k < current; k++)
     printf ("     ");
```

```
 for (int j = 1; j <= days; j++)
        {
           printf ("%5d", j);
 if (++k > 6)
           {
  k = 0;
 printf("\n");
           }
        }
  if (k)
 printf("\n");
 current = k;
    }
  return;
}
 void datey()
 {

 int month [12] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};
 char week [7][10], mast [13][10];

int date, mon, i, r, s = 0; long year;

 char str [60] = {0};
 strcpy (week [0], "Sunday");
 strcpy (week [1], "Monday");
 strcpy (week [2], "Tuesday");
strcpy (week [3], "Wednesday");
```

```
   strcpy (week [4], "Thursday");
   strcpy (week [5], "Friday");
   strcpy (week [6], "Saturday");
   printf ("Enter a valid date (dd/mm/yyyy):");
scanf ("%d / %d / %ld", &date, &mon, &year);
if((date>31)||(mon>12)||(year>9999))
        {
           printf ("\nEnter the dates correctly!!!!\n");
     return;
        }
        if ((year % 400 == 0) || ((year % 4 == 0) && (year % 100! = 0)))
     month [1] = 29;
      for (i = 0; i < mon - 1; i++)
        {
           s = s + month[i];
           s = s + (date + year + (year / 4) - 2);
           s = s % 7 ;
      }
strcpy(mast[1],"January");
strcpy(mast[2],"February");
strcpy(mast[3],"March");
strcpy(mast[4],"April");
strcpy(mast[5],"May");
strcpy(mast[6],"June");
strcpy(mast[7],"July");
strcpy(mast[8],"August");
```

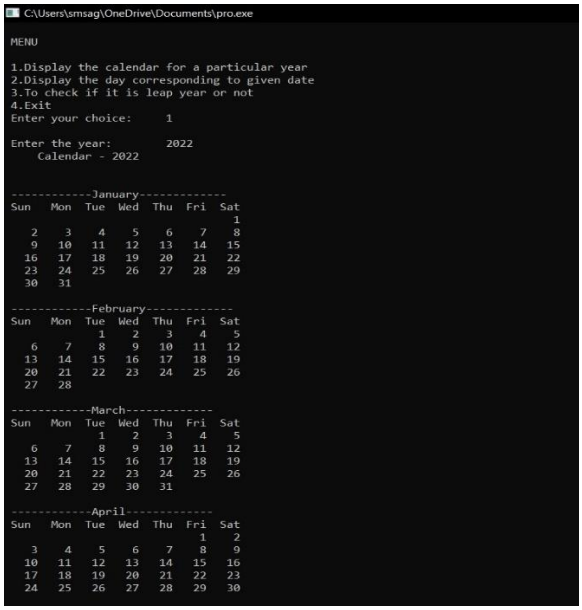
```
strcpy(mast[9],"September");
strcpy(mast[10],"October");
strcpy(mast[11],"November");
strcpy(mast[12],"December");
printf ("\nThe day is: %s\n The Month is: %s\n", week[s],
mast[mon]);
 }
void leapu ()
    {
      int year;
     printf ("\nEnter a year: ");
    scanf ("%d", &year);
    if(year>=9999||year<=0)
      {
         printf ("\n Enter the years within four digits, positive integer number\n");
    return;
      }
      if ((year % 400 == 0)||year % 4== 0)
      {
        printf ("\n%d is a leap year.\n", year);
      }
       else
      {
        printf ("\n%d is not a leap year.\n", year);
      }
     return;
```

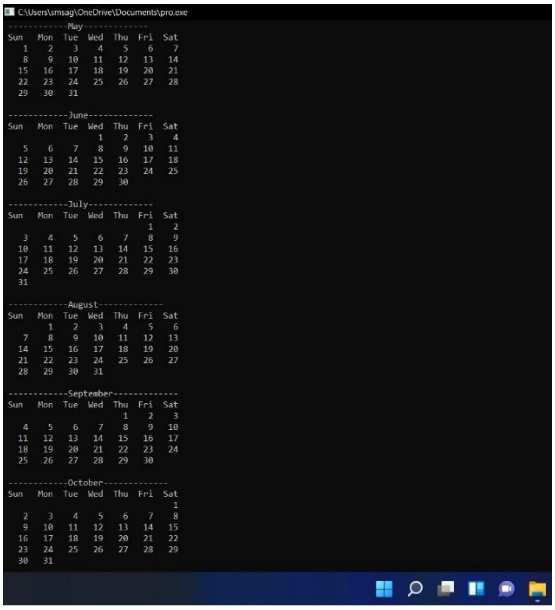
```
}
int main()
{
 int year, ch;
while (1)
{
printf ("\n MENU \n");
printf ("\n 1. Display the calendar for a particular year");
printf ("\n 2. Display the day corresponding to the given
date");
 printf ("\n 3. To check if it is leap year or not");
printf ("\n 4. Exit");
printf ("\n Enter your choice:\t");
scanf ("%d", &ch);
switch(ch)
       {
         case 1: printf ("\n Enter the year:\t");
                 scanf ("%d", &year);
                  printCalendar(year);
                              break;
        case 2: datey ();
             break;
       case 3: leapu ();
            break;
     case 4: exit (0);
```

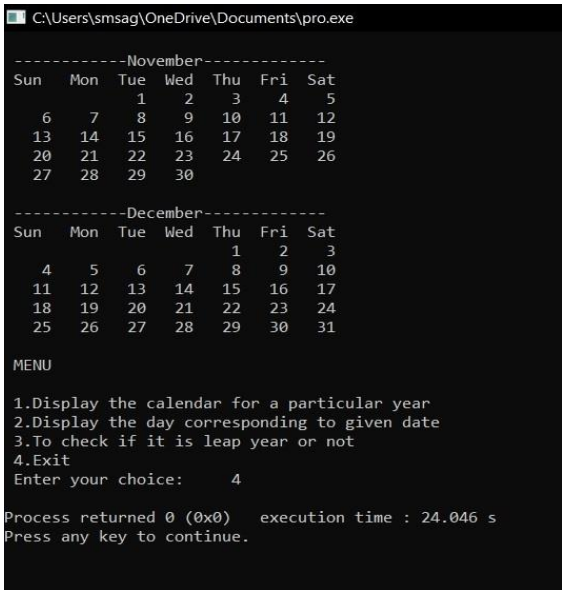
```
    default:printf("\n Enter the appropriate choice!!!");
      }
   }
}
```

5. SCREENSHOTS

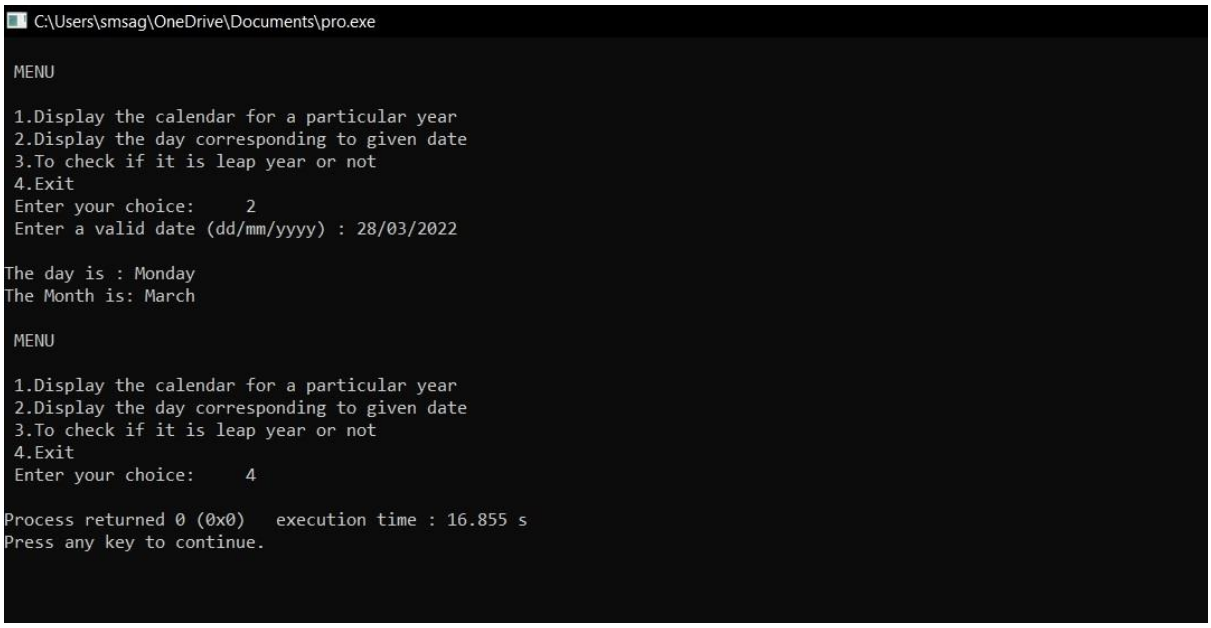
1. Display the calendar for a particular year



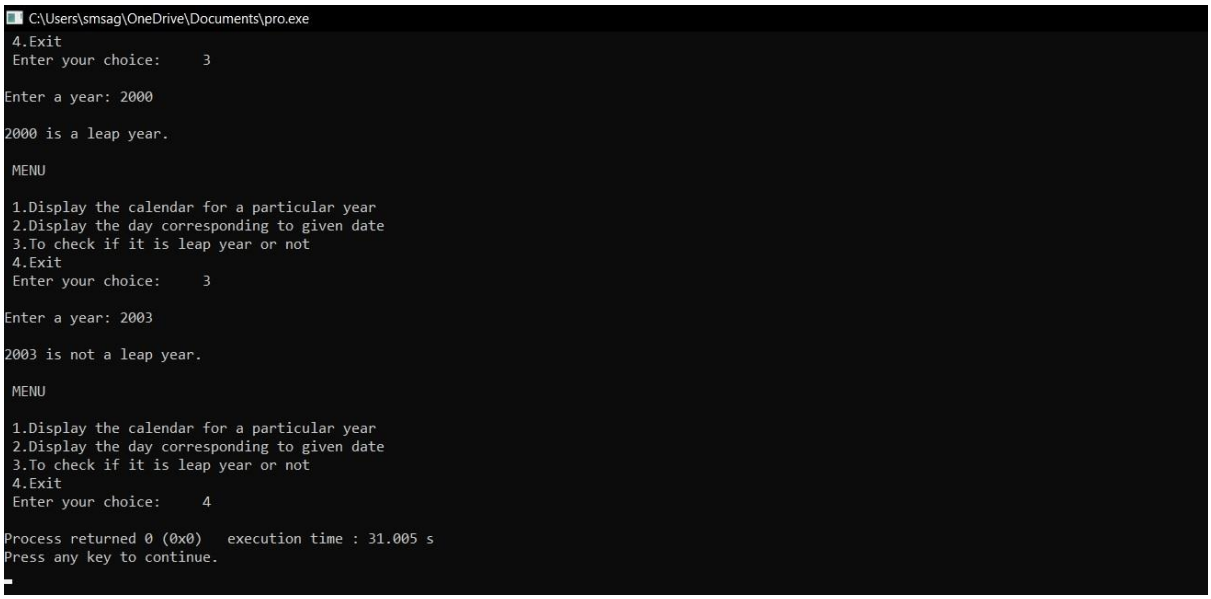




2. Display the day corresponding to the given date



3. To check if it is leap year or not



6. CONCLUSION

Programming has become a very versatile and powerful tool in the modern world. Using C language, we can construct a calendar with a number of features. The aim of the project to provide 3 different features using the C language is met through this project.

7. REFERENCES

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