/\*C program to validate date and print weekday of given date.\*/

#include <stdio.h>

/\*

 \* function: validateDate

 \* arguments: d- day, m- month, y- year

 \* return type: 0 - invalid, 1 - valid

 \* \*/

int validateDate(int d,int m,int y)

{

    //check year validity

    if(y>=1800 && y<=2999)

    {

        //check month validity

        if(m>=1 && m<=12)

        {

            //check day validity

            if(d>=1 && d<=31)

            {

                if( (d>=1 && d<=30) && (m==4||m==6||m==9||m==11))

                    return 1;   //valid date

                else if((d>=1 && d<=30) && (m==1||m==3||m==5||m==7||m==8||m==10||m==12))

                    return 1;   //valid date

                else if((d>=1 && d<=28) && (m==2))

                    return 1;   //valid date

                else if(d==29 && m==2 && ((y%400==0)||(y%4==0 && y%4!=0)))

                    return 1;   //valid date

                else

                    return 0;   //invalid day

            }

            else

            {

                return 0;   //day is invalid

            }

        }

        else

        {

            return 0; //month is invalid

        }

    }

    else

    {

        return 0; //year is invalid

    }

}

// This function will return week day number from 0 to 6

int wd(int year, int month, int day)

{

    int wday=0;

    wday=(day  + ((153 \* (month + 12 \* ((14 - month) / 12) - 3) + 2) / 5) \

        + (365 \* (year + 4800 - ((14 - month) / 12)))              \

        + ((year + 4800 - ((14 - month) / 12)) / 4)                \

        - ((year + 4800 - ((14 - month) / 12)) / 100)              \

        + ((year + 4800 - ((14 - month) / 12)) / 400)              \

        - 32045                                                    \

      )%7;

     return wday;

}

int main()

{

    int day,month,year;

    int wDayNo=0;

    char dayNames[][12]={"Monday","Tuesday","Wednesday","Thursday","Friday","Saturday","Sunday"};

    //input date

    printf("Input date (DD-MM-YYYY): ");

    scanf("%d-%d-%d",&day,&month,&year);

    //check date is correct or not

    if(validateDate(day,month,year)==1){

        printf("Date is correct [%02d/%02d/%02d].\n",day,month,year);

        //get weekday number

        wDayNo=wd(year,month,day);

        //print weekday according to wDayNo

        printf("week day is: %s\n",dayNames[wDayNo]);

    }

    else

        printf("Date is in-correct.\n");

    return 0;

}

Output:

