**Program 3: NextDate Boundary Value Analysis**

Program:

#include<stdio.h>

int check(int day,int month)

{

    if((month==4||month==6||month==9 ||month==11) && day==31)

    return 1;

    else

    return 0;

}

int isleap(int year)

{

    if((year%4==0 && year%100!=0) || year%400==0)

    return 1;

    else

    return 0;

}

int main()

{

    int day,month,year,tomm\_day,tomm\_month,tomm\_year;

    char flag;

    do

        {

        flag='y';

        printf("\nEnter the today's date in the form of dd mm yyyy\n");

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

        tomm\_month=month;

        tomm\_year= year;

        if(day<1 || day>31)

        {

            printf("value of day, not in the range 1...31\n");

            flag='n';

        }

        if(month<1 || month>12)

        {

            printf("value of month, not in the range 1....12\n");

            flag='n';

        }

        else if(check(day,month))

    {

        printf("value of day, not in the range day<=30");

        flag='n';

    }

    if(year<=1812 || year>2013)

    {

        printf("value of year, not in the range 1812.......2013\n");

        flag='n';

    }

    if(month==2)

    {

        if(isleap(year) && day>29)

        {

            printf("Invalid date input for leap year");

            flag='n';

        }

        else if(!(isleap(year))&& day>28)

        {

            printf("Invalid date input for not a leap year");

            flag='n';

        }

    }

}while(flag=='n');

switch (month)

{

    case 1:

    case 3:

    case 5:

    case 7:

    case 8:

    case 10:if(day<31)

        tomm\_day=day+1;

    else

    {

        tomm\_day=1;

        tomm\_month=month+1;

    }

    break;

    case 4:

    case 6:

    case 9:

    case 11: if(day<30)

        tomm\_day=day+1;

    else

    {

        tomm\_day=1;

        tomm\_month=month+1;

    }

    break;

    case 12: if(day<31)

        tomm\_day=day+1;

    else

    {

        tomm\_day=1;

        tomm\_month=1;

        if(year==2013)

        {

            printf("the next day is out of boundary value of year\n");

            tomm\_year=year+1;

        }

        else

            tomm\_year=year+1;

    }

    break;

    case 2:

    if(day<28)

        tomm\_day=day+1;

    else if(isleap(year)&& day==28)

        tomm\_day=day+1;

    else if(day==28 || day==29)

    {

        tomm\_day=1;

        tomm\_month=3;

    }

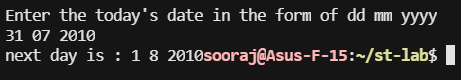
    break;

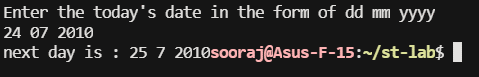
}

printf("next day is : %d %d %d",tomm\_day,tomm\_month,tomm\_year);

return 0;}

Output:





# Test Case Name : Boundary Value Analysis test cases for Next date program Experiment Number : 11

**Test data :** Enter the three integer value

**Pre-condition :** Month 1 to 12 , DAY 1 TO 31 AND YEAR 1812 TO 2013 / we consider one corner for the input space

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Min** | **Min +1** | **Normal** | **Max -1** | **Max** |
| **Month** | 1 | 2 | 6 | 11 | 12 |
| **Day** | 1 | 2 | 15 | 30 | 31 |
| **Year** | 1812 | 1813 | 1912 | 2012 | 2013 |

## Brief Description :

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case Id** | **Description** | | **Input Data** | | | **Expected Output** | | | **Actual output** | | | **Status** | **Comment** |
| **Month** | **day** | **year** | **Month** | **day** | **year** | **Month** | **day** | **year** |
| 1 | Enter the min value month, day and year | | 1 | 1 | 1812 | 1 | 2 | 1812 |  |  |  |  |  |
| 2 | Enter the min+1 value for year and min for month and day | | 1 | 1 | 1813 | 1 | 2 | 1813 |  |  |  |  |  |
| 3 | Enter the normal value for year and min for month and day | | 1 | 1 | 1912 | 1 | 2 | 1912 |  |  |  |  |  |
| 4 | Enter the max -1 value for year and min for month and day | | 1 | 1 | 2012 | 1 | 2 | 2012 |  |  |  |  |  |
| 5 |  | Enter the max value for year and min for month and day | 1 | 1 | 2013 | 1 | 2 | 2013 |  |  |  |  |  |
| 6 |  | Enter the min+1 value of day and min for month and year | 1 | 2 | 1812 | 1 | 3 | 1812 |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | Enter the min+1 value for day and year and min for month | 1 | 2 | 1813 | 1 | 3 | 1813 |  |  |  |  |  |
| 8 | Enter the min+1 value for day , normal value for year and min value for month | 1 | 2 | 1912 | 1 | 3 | 1912 |  |  |  |  |  |
| 9 | Enter the min+1 value for day , max -1 value for year and min value for month | 1 | 2 | 2012 | 1 | 3 | 2012 |  |  |  |  |  |
| 10 | Enter the min+1 value for day , max value for year and min value for month | 1 | 2 | 2013 | 1 | 3 | 2013 |  |  |  |  |  |
| 11 | Enter the normal value of day and min for year and month | 1 | 15 | 1812 | 1 | 16 | 1812 |  |  |  |  |  |
| 12 | Enter the normal value for day and min+1 for year and min for month | 1 | 15 | 1813 | 1 | 16 | 1813 |  |  |  |  |  |
| 13 | Enter the normal value for day normal value for year and min value for month | 1 | 15 | 1912 | 1 | 16 | 1912 |  |  |  |  |  |
| 14 | Enter the normal value for day , max -1 value for year and min value for month | 1 | 15 | 2012 | 1 | 16 | 2012 |  |  |  |  |  |
| 15 | Enter the normal value for day , max value for year and min value for month | 1 | 15 | 2013 | 1 | 16 | 2013 |  |  |  |  |  |
| 16 | Enter the max - 1 value of day and min for day and year | 1 | 30 | 1812 | 1 | 31 | 1812 |  |  |  |  |  |
| 17 | Enter the max -1 value for day and min for month and min+1 for year | 1 | 30 | 1813 | 1 | 31 | 1813 |  |  |  |  |  |
| 18 | Enter the max - 1 value for day , normal  value for year and min value for month | 1 | 30 | 1912 | 1 | 31 | 1912 |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19 | Enter the max - 1 value for day , max -1  value for year and min value for month | 1 | 30 | 2012 | 1 | 31 | 2012 |  |  |  |  |  |
| 20 | Enter the max -1 value for day , max value for year and min value for month | 1 | 30 | 2013 | 1 | 31 | 2013 |  |  |  |  |  |
| 21 | Enter the max value of day and min for year and month | 1 | 31 | 1812 | 2 | 1 | 1812 |  |  |  |  |  |
| 22 | Enter the max value for day and min for month and min + 1 for year | 1 | 31 | 1813 | 2 | 1 | 1813 |  |  |  |  |  |
|  | Enter the max value for day , normal value for year and min value for month | 1 | 31 | 1912 | 2 | 1 | 1912 |  |  |  |  |  |
| 24 | Enter the max value for day , max -1 value for year and min value for month | 1 | 31 | 2012 | 2 | 1 | 2012 |  |  |  |  |  |
| 25 | Enter the max value for day , max value for year and min value for month | 1 | 31 | 2013 | 2 | 1 | 2013 |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case Id** | **Description** | **Input Data** | | | **Expected Output** | | | **Actual output** | | | **Status** |  |
| **month** | **day** | **year** | **month** | **day** | **year** | **month** | **day** | **year** |  | **Comm ent** |
| 1 | Enter the D1, M1 and Y1 valid cases | 12 | 31 | 1811 | Should display the message value of the year in range  1812..2013 | | |  | | |  |  |
| 2 | Enter the D1, M1 and Y2 valid cases | 12 | 31 | 2012 | 1 | 1 | 2013 |  |  |  |  |  |
| 3 | Enter the D1, M1 and Y3 valid cases | 12 | 31 | 2013 | Should display the message Next is out of  boundary 2013 | | |  | | |  |  |