

## LAB TEST – 1

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Program Link:

<https://drive.google.com/drive/folders/1R0bvai70FFgtjigWGccJaq6cPh3LqkII?usp=sharing>

**Aim: To find the renewal date for sim card and the total price of renewal using concepts of classes and objects.**

```
#include <iostream>
#include <malloc.h>
using namespace std;
//Coded by Hari Krishna Shah
```

```
class renewal{
    private:
        int renewal_count;
        struct renewal_date{
            int year;
```

```

        int month;
        int day;
    }*rd;
    int price;
    int renewal_gap;

public:
    void get_details(int
r_renewal_count, int r_price, int
r_year, int r_month, int r_day, int
r_renewal_gap);
    void display();
    renewal(){
        rd = NULL;
    }

    ~renewal(){
        delete rd;
    }

};

void renewal::get_details(int
r_renewal_count, int r_price, int
r_year, int r_month, int r_day, int
r_renewal_gap){
    renewal_count = r_renewal_count;
    price = r_price;

```

```

renewal_gap = r_renewal_gap;
int add;

rd = (struct renewal_date *)
(malloc(renewal_count*sizeof(struct
renewal_date)));
rd[0].year = r_year;
rd[0].month = r_month;
rd[0].day = r_day;

for(int i = 1; i<renewal_count;
i++){
    rd[i].year = rd[i-1].year;
    rd[i].month = rd[i-1].month;
    rd[i].day = rd[(i-1)].day +
renewal_gap;

    if(rd[i].day>30){
        add = (rd[i].day/30);
        rd[i].day = rd[i].day%30;
        rd[i].month = rd[i].month +
add;
    }
    if(rd[i].month>12){
        add = (rd[i].month/12);
        rd[i].month =

```

```

rd[i].month%12;
        rd[i].year = rd[i].year +
add;
    }
}
}

```

```

void renewal::display(){
    int total_price;
    cout<<"\nThe entered gap day for
renewal is "<<renewal_gap<< "."<<endl;
    cout<<"The entered price for each
renewal is "<<price<< "."<<endl;
    cout<<"Following is the list of
each renewal date."<<endl<<endl;

    for(int i = 0; i<renewal_count;
i++){
        cout<<"Below is detail for
renewal date number "<<i+1<<endl;
        cout<<"Year:
"<<rd[i].year<<endl;
        cout<<"Month:
"<<rd[i].month<<endl;
        cout<<"Day:
"<<rd[i].day<<endl<<endl;

```

```
    }  
    total_price = price*renewal_count;  
    cout<<"The total price for the  
renewal is "<<total_price<<". "<<endl;  
}
```

```
int main(){  
    class renewal r;  
    int r_count, r_price, r_year,  
r_month, r_day, r_renewal_gap,  
r_renewal_count;  
  
    cout<<"Enter the how many times  
you want to renew the sim card: ";  
    cin>>r_renewal_count;  
    cout<<"Enter the day after which  
sim is to be renewed: ";  
    cin>>r_renewal_gap;  
  
    cout<<"Enter the price of each  
renewal: ";  
    cin>>r_price;  
    cout<<"Enter the current year of  
renewal: ";  
    cin>>r_year;  
    cout<<"Enter the current month of  
renewal: ";
```

```

    cin>>r_month;
    cout<<"Enter the current day of
renewal: ";
    cin>>r_day;

    r.get_details(r_renewal_count,
r_price, r_year, r_month, r_day,
r_renewal_gap);

    r.display();

    return 0;
}

```

The screenshot displays a C++ IDE with two windows. The left window shows the source code for 'Test 1 OOP.cpp', and the right window shows the program's execution output.

**Source Code (Test 1 OOP.cpp):**

```

1 #include <iostream>
2 #include <malloc.h>
3 using namespace std;
4 //Coded by Hari Krishna Shah
5
6
7 class renewal{
8     private:
9         int renewal_count;
10        struct renewal_date{
11            int year;
12            int month;
13            int day;
14        }*rd;
15        int price;
16        int renewal_gap;
17
18     public:
19         void get_details(int r_renewal_count, int r_price, int r_year, int r_month, int r_day, int r_renewal_gap);
20         void display();
21         renewal(){
22             rd = NULL;
23         }
24
25         ~renewal(){
26             delete rd;
27         }
28 }

```

**Execution Output:**

```

C:\Users\Hari\OneDrive\Desktop\Object Oriented Programming\Test 1 OOP.exe
Enter the how many lines you want to renew the sim card: 5
Enter the day after which sim is to be renewed: 56
Enter the price of each renewal: 399
Enter the current year of renewal: 2010
Enter the current month of renewal: 2
Enter the current day of renewal: 12

The entered gap day for renewal is 56.
The entered price for each renewal is 399.
Following is the list of each renewal date.

Below is detail for renewal date number 1
Year: 2010
Month: 2
Day: 12

Below is detail for renewal date number 2
Year: 2010
Month: 4
Day: 8

Below is detail for renewal date number 3
Year: 2010
Month: 6
Day: 4

Below is detail for renewal date number 4
Year: 2010
Month: 8
Day: 0

Below is detail for renewal date number 5
Year: 2010
Month: 9
Day: 26

The total price for the renewal is 1995.

-----
Process exited after 15.83 seconds with return value 0
Press any key to continue . . .

```