

### **C++ code:**

/\*Write a C++ program to input electricity unit charge and calculate the total electricity bill

according to the given condition:

For first 50 units Rs. 0.50/unit

For next 100 units Rs. 0.75/unit

For next 100 units Rs. 1.20/unit

For unit above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill.

\*/

### **ALGORITHM:**

- 1) Declare variables unit, amt, total\_amt, sur\_charge and take input from the user.
- 2) Calculate the electricity bill using if-else ladder.
- 3) Calculate the total amount by using amount+sur\_charge.
- 4) Display the output on screen.

### **PROGRAM:**

```
#include <iostream>

#include <iomanip> //this is for setprecision() function
#include <cstdio> //it helps to use the C language syntax
using namespace std;

int main()

{
    int unit;

    float amt, total_amt, sur_charge;

    /* Input unit consumed from user */
```

```
cout << "Enter total units consumed: ";

cin >> unit;

/* Calculate electricity bill according to given conditions */

if(unit <= 50)

{

    amt = unit * 0.50;

}

else if(unit <= 150)

{

    amt = 25 + ((unit-50) * 0.75);

}

else if(unit <= 250)

{

    amt = 100 + ((unit-150) * 1.20);

}
```

```
else

{

    amt = 220 + ((unit-250) * 1.50);

}

/*

* Calculate total electricity bill

* after adding surcharge

*/

sur_charge = amt * 0.20;

total_amt = amt + sur_charge;

//cout << "Total bill is = Rs. " <<total_amt;

// cout<< "Electricity Bill = Rs. " << setprecision (2) << fixed << total_amt;

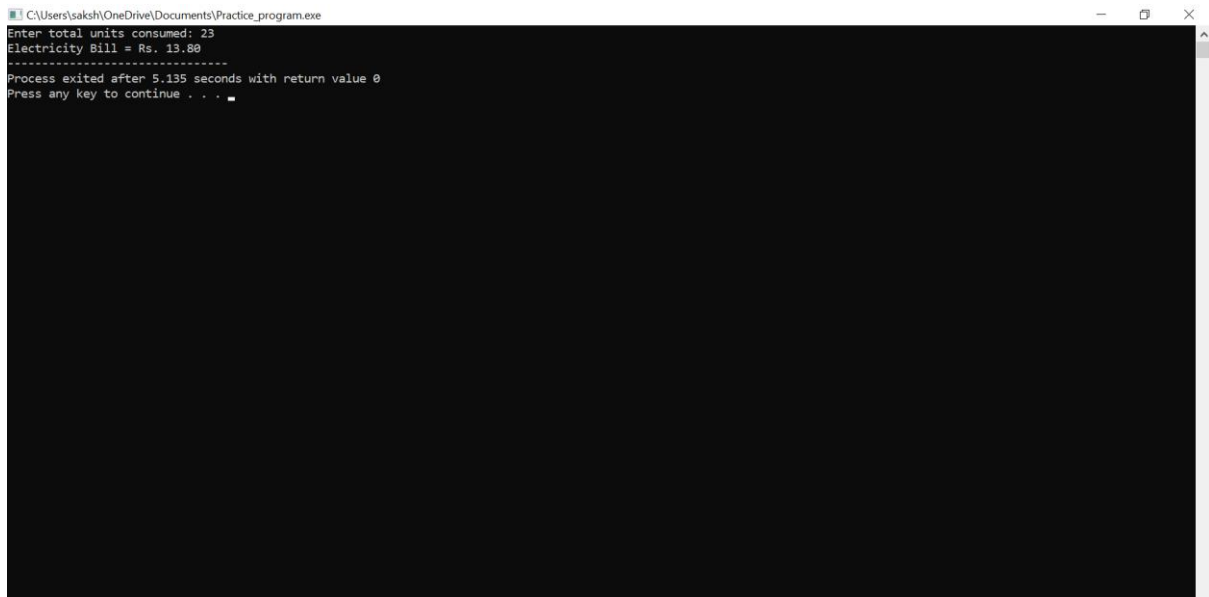
printf("Electricity Bill = Rs. %.2f", total_amt);

return 0;

}
```

**INPUT GIVEN: 23**

**OUTPUT SCREENSHOT:**



The screenshot shows a Windows command prompt window titled "C:\Users\sakshi\OneDrive\Documents\Practice\_program.exe". The output of the program is as follows:

```
Enter total units consumed: 25
Electricity Bill = Rs. 13.80
-----
Process exited after 5.135 seconds with return value 0
Press any key to continue . . .
```

## JAVA Code:

/\*Write a Java program to input electricity unit charge and calculate the total electricity bill

according to the given condition:

For first 50 units Rs. 0.50/unit

For next 100 units Rs. 0.75/unit

For next 100 units Rs. 1.20/unit

For unit above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill.

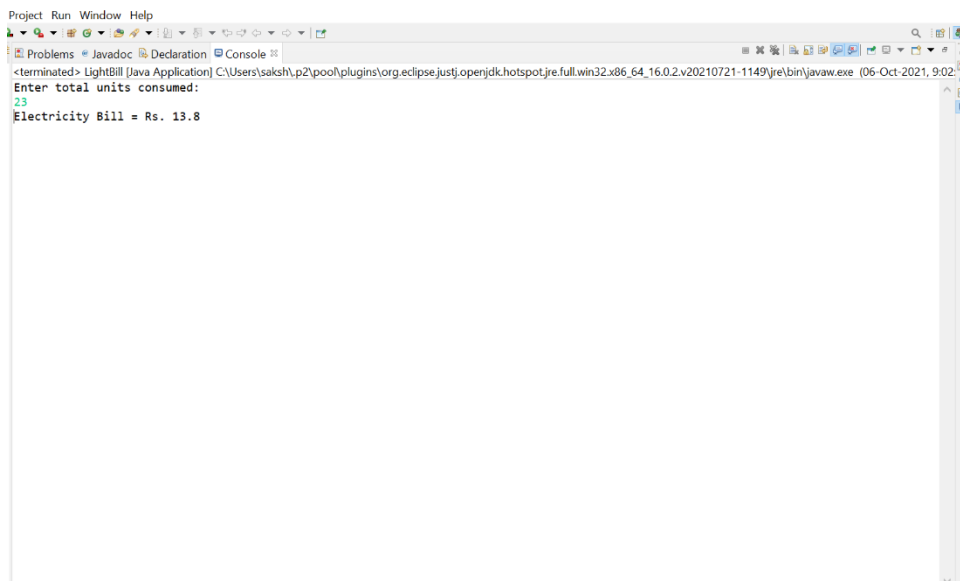
\*/

```
public class LightBill {
    public static void main(String [] args)
    {
        int unit;
        float amt, total_amt, sur_charge;
        //needed for user input
        Scanner sc = new Scanner(System.in);
        /* Input unit consumed from user */
        System.out.println("Enter total units consumed: ");
        unit=sc.nextInt();
        /* Calculate electricity bill according to given conditions */
        if(unit <= 50)
```

```
{  
    amt = (float) (unit * 0.50);  
}  
else if(unit <= 150)  
{  
    amt = (float) (25 + ((unit-50) * 0.75));  
}  
else if(unit <= 250)  
{  
    amt = (float) (100 + ((unit-150) * 1.20));  
}  
else  
{  
    amt = (float) (220 + ((unit-250) * 1.50));  
}  
/*  
 * Calculate total electricity bill  
 * after adding surcharge  
 */  
sur_charge = (float) (amt * 0.20);  
total_amt = amt + sur_charge;  
System.out.println("Electricity Bill = Rs. "+ total_amt);  
}  
}
```

**INPUT GIVEN: 23**

**OUTPUT SCREENSHOT:**



Q2) Write a C++ program to create an Employee class with data members:

Employee number, Employee name, Basic, DA, IT, Net Salary

class has 3 methods, one method to get employee details for name, ID and basic salary

other method to calculate net salary using formula

$DA = 1.32 * \text{basic};$

$IT = 0.30 * (\text{basic} + DA);$

$\text{net\_sal} = (\text{basic} + DA) - IT;$

third method to print emp name, ID, net salary alongwith all salary components

Use the concept of array to enter data for minimum 3 Employees.

### **ALGORITHM:**

- 1) Declare a class Employee, create an array for minimum 3 employees and create variables employee number, employee name, DA, IT, Basic, Net Salary
- 2) Declare three methods get\_data, calc(), print\_data().
- 3) Use formula for  $DA = 1.32 * \text{Basic}$ ,  $IT = 0.30 * (\text{Basic} + DA)$ ,  $\text{Net\_Salary} = (\text{Basic} + DA) - IT$  for calculation.
- 4) Input data from user.
- 5) Display the output for three employees using loop.

### **Program:**

### **C++ CODE:**

```
#include<iostream>
```

```
#include<string>

using namespace std;

class Employee
{
    int emp[100];

    int emp_num;

    string name;

    float Basic;

    float DA;

    float IT;

    float Net_Salary;

    public:

        void get_data(){

            cout<<"Enter Employee name "<<endl;

            cin>>name;

            cout<<"Enter Employee ID Number "<<endl;

            cin>>emp_num;

            cout<<"Enter Employee Basic salary "<<endl;

            cin>>Basic;

        }

        void calc();

        void print_data();

};

void Employee::calc()

{
```

```
        DA=(1.32)*(Basic);

        IT=(0.30)*(Basic+DA);

        Net_Salary= (Basic+DA)-(IT);

    }

    void Employee::print_data()

    {

        cout<<"\nThe name of Employee is "<<name<<endl;

        cout<<"The ID Number of Employee is "<<emp_num<<endl;

        cout<<"The Basic Salary of Employee is "<<Basic<<endl;

        cout<<"The net salary of the Employee is
"<<Net_Salary<<endl<<endl;

    }

    int main()

    {

        Employee obj;

        for(int i=0;i<3;i++)

        {

            obj.get_data();

            obj.calc();

            obj.print_data();

        }

        return 0;

    }
```

**OUTPUT SCREENSHOT:**



```
Enter Employee name
Sakshi
Enter Employee ID Number
7
Enter Employee Basic salary
150000

The name of Employee is Sakshi
The ID Number of Employee is 7
The Basic Salary of Employee is 150000
The net salary of the Employee is 243600

Enter Employee name
Arun
Enter Employee ID Number
12
Enter Employee Basic salary
45000

The name of Employee is Arun
The ID Number of Employee is 12
The Basic Salary of Employee is 45000
The net salary of the Employee is 73080

Enter Employee name
Sanket
Enter Employee ID Number
10
Enter Employee Basic salary
50000

The name of Employee is Sanket
The ID Number of Employee is 10
The Basic Salary of Employee is 50000
The net salary of the Employee is 81200

-----
Process exited after 33.92 seconds with return value 0
Press any key to continue . . .
```

### JAVA CODE:

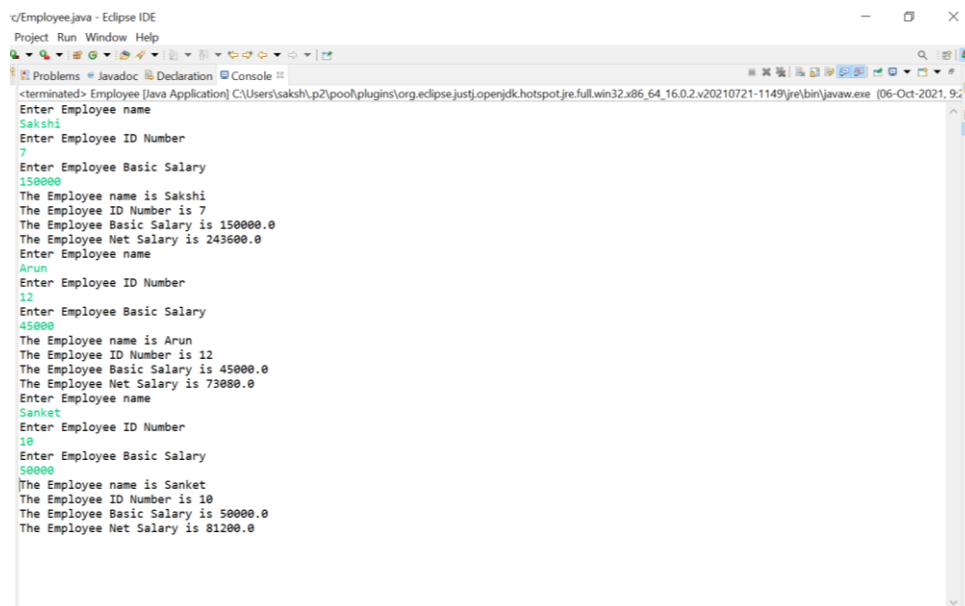
```
import java.util.Scanner;

public class Employee {
    Scanner sc=new Scanner(System.in);
    String name;
    int emp_num;
    float Basic;
    float DA;
    float IT;
    float Net_Salary;
    void get_data()
    {
        System.out.println("Enter Employee name ");
        name=sc.next();
        System.out.println("Enter Employee ID Number ");
        emp_num=sc.nextInt();
        System.out.println("Enter Employee Basic Salary ");
        Basic=sc.nextFloat();
    }
    void calc()
    {
        DA=(float) (1.32)*(Basic);
        IT=(float) (0.30)*(Basic+DA);
        Net_Salary=(float) (Basic+DA)-(IT);
    }
    void display() {
        System.out.println("The Employee name is "+name);
        System.out.println("The Employee ID Number is "+emp_num);
        System.out.println("The Employee Basic Salary is "+Basic);
        System.out.println("The Employee Net Salary is "+Net_Salary);
    };

    public static void main(String[] args) {
        Employee obj=new Employee();
        for(int i=0;i<3;i++) {
            obj.get_data();
            obj.calc();
        }
    }
}
```

```
        obj.display();  
    }  
  
    }  
  
}
```

### Output Screenshot:



The screenshot shows the Eclipse IDE interface with the console window open. The title bar reads 'c:\Employee.java - Eclipse IDE'. The menu bar includes 'Project', 'Run', 'Window', and 'Help'. The toolbar shows various icons for running and debugging. The console output is as follows:

```
<terminated> Employee [Java Application] C:\Users\sakshi\p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_16.0.2.v20210721-1149\jre\bin\javaw.exe [06-Oct-2021, 9:25:12 AM]  
Enter Employee name  
Sakshi  
Enter Employee ID Number  
7  
Enter Employee Basic Salary  
150000  
The Employee name is Sakshi  
The Employee ID Number is 7  
The Employee Basic Salary is 150000.0  
The Employee Net Salary is 243600.0  
Enter Employee name  
Arun  
Enter Employee ID Number  
12  
Enter Employee Basic Salary  
45000  
The Employee name is Arun  
The Employee ID Number is 12  
The Employee Basic Salary is 45000.0  
The Employee Net Salary is 73000.0  
Enter Employee name  
Sanket  
Enter Employee ID Number  
10  
Enter Employee Basic Salary  
50000  
The Employee name is Sanket  
The Employee ID Number is 10  
The Employee Basic Salary is 50000.0  
The Employee Net Salary is 81200.0
```