```
// Q1. Write a c++ program  to sort an array of integer into ascending order.
#include<iostream>
using namespace std;
int main()
{
   int n;
   cout << "Enter how many elements in array: ";
   cin >> n;
   int my_array[n];
   cout << "Enter the array elements: ";
   for(int i = 0; i < n; i++){
      cin >> my_array[i];
   }
   cout << "The unsorted array is: ";
   for (int i = 0; i < n; i++){
      cout << my_array[i] << " ";
   }
   cout << endl;
   // sort
   for(int i = 0; i < n; i++){
      int temp;
      for(int j = i+1; j < n; j++){
         if(my_array[i] > my_array[j]){
            temp = my_array[i];
            my_array[i] = my_array[j];
            my_array[j] = temp;
         }
      }
   }
   cout << "\nThe sorted array on ascending order is: ";
```

```
   for (int i = 0; i < n; i++){
      cout << my_array[i] << " ";
   }
   cout << endl;
}
```

Input:

Enter how many elements in array: 5

Enter the array elements: 9 7 2 8 3

Output:

The unsorted array is: 9 7 2 8 3

The sorted array on ascending order is: 2 3 7 8 9

```
// Q2. Write a java program  to sort an array of integer into descending order.
import java.util.Scanner;
public class desending {
  public static void main(String[] args){
    Scanner myObj = new Scanner(System.in);
    System.out.print("Enter how many elements in array: ");
    int n = myObj.nextInt();
    int my_array[];
    my_array = new int[n];
    System.out.print("Enter the elements in array: ");
    for(int i = 0; i < n; i++){
       int m = myObj.nextInt();
       my_array[i] = m;
    }
    System.out.print("The unsoretd array is: ");
    for(int i = 0; i < n; i++){
       System.out.print(my_array[i] + " ");
    }
```

```
    System.out.println();
    // sort
    for(int i = 0; i < n; i++){
     int temp;
     for(int j = i+1; j < n; j++){
        if(my_array[i] < my_array[j]){
            temp = my_array[i];
            my_array[i] = my_array[j];
            my_array[j] = temp;
         }
     }
    }
    System.out.print("The soretd array on descending order is: ");
    for(int i = 0; i < n; i++){
       System.out.print(my_array[i] + " ");
    }
    System.out.println();

  }
}
```

Input:

Enter how many elements in array: 5

Enter the array elements: 9 7 2 8 3

Output:

The unsorted array is: 9 7 2 8 3

The sorted array on ascending order is: 9 8 7 3 2

// Q3. Write a java or c++ program display the left triangle using nested for loops.

```
#include<iostream>
using namespace std;
```

```
int main(){
   int row;
   cout << "Enter the number of row: ";
   cin >> row;
   //print the left triangle
   cout << "The left triangle is: \n";
   for(int i = 1; i <= row; i++){
     for(int j = i; j <= row-1; j++){
      cout << " ";
     }
     for(int j = 1; j <= i; j++){
      cout << "*";
     }
     cout << endl;
   }

}
```

Input :

Enter the number of row: 4

Output:

The left triangle is:

```
    *
   **
  ***
****
```

//Q4. Write a Java or c++ program to create a file "test.txt" and enter your name and roll into the file.

```
#include<iostream>
#include<fstream>
using namespace std;
int main(){
   ofstream MyFile("test.txt");
   string name;
   int roll;
   cout << "Enter your name: ";
   getline(cin, name);
   cout << "Enter your roll: ";
   cin >> roll;
   if(MyFile.is_open()){
      MyFile <<"Name: " << name << "\nRoll: " << roll;
      cout << "File is written successfully\n";
   }
   MyFile.close();
}
```

Input

Enter your name: Md Sohag Hossain

Enter your roll: 190631

Output

File is written successfully

//Q5. Write a Java or C++ program to display existing information from a file "test.txt".

```
#include<iostream>
#include<fstream>
using namespace std;
int main()
{
   string srg;
   ifstream MyFile("test.txt");
   if(MyFile.is_open()){
      while(getline(MyFile, srg)){
         cout << srg << endl;
      }
      MyFile.close();
   }
   else{
      cout << "File is not found\n";
   }
}
```

Output

```
Name: Md Sohag Hossain
Roll: 190631
```

```
/*Q6. Write a java program to create a "test.txt" file and write your Roll,
Name into file. Again display the infromation from the file*/
import java.io.File;
import java.util.Formatter;
import java.util.Scanner;
public class MyFile {
  public static void main(String[] args){
    String name, roll;
    Scanner input = new Scanner(System.in);
    try{
      //Create and open the test.txt file on the project directory.
      Formatter myFile = new Formatter("test.txt");
      System.out.print("Enter your name: ");
      name = input.nextLine();
      System.out.print("Enter your roll: ");
      roll = input.nextLine();
      myFile.format("%s %s \n%s %s","Name: ", name, "Roll: ", roll);
      myFile.close();
      System.out.println("File has been created");
    }catch(Exception e){
      System.out.println(e);
    }

    try{
      //Open the test.txt file.
      File fileReader = new File("test.txt");
      Scanner scanner = new Scanner(fileReader);
      while(scanner.hasNext()){
        //read the file
        String reader = scanner.nextLine();
```

```
            //print the infromation from the file.
            System.out.println(reader);
        }
        System.out.println("File read successfully");

    } catch(Exception e){
        System.out.println(e);
    }
  }
}
```

Input

Enter your name: Md Sohag Hossain

Enter your roll: 190631

Output

File has been created

Name: Md Sohag Hossain

Roll: 190631

File read successfully

/* Q7. Write a Java or C++ program to enter Roll, Name and Mark by the keyboard and display that information

just covered the mark into letter grade for the following the

conditions using inheritance: 80% and above = A+, 75% to less than 80% = A and less than 75% = F */

```
#include<iostream>
using namespace std;
```

```
class information{
   public:
      string name;
      int roll;
      float mark;
      void input (){
         cout << "Enter your name: "; getline(cin, name);
         cout << "Enter your roll: "; cin>>roll;
         cout << "Enter your mark: "; cin >> mark;
      }
      void display(){
         cout << "\n\n";
         cout << "Name: " << name << "\n" << "Roll: " << roll << endl;
      }

};
class student:public information {
public:
   void grade(){
      cout << "Grade: ";
      if(mark > 100) cout << "Invalid mark";
      else if(mark >= 80 && mark <= 100) cout << "A+";
      else if(mark >= 75 && mark < 80) cout << "A";
      else cout << "F";
      cout << endl;
   }
};

int main(){
   student s1;
```

```
    s1.input();
    s1.display();
    s1.grade();
}
```

Input:

Enter your name: Md Sohag Hossain

Enter your roll: 190631

Enter your mark: 79

Output:

Name: Md Sohag Hossain

Roll: 190631

Grade: A

//Q8. Write Java or C++ program to calculate the area of rectangular and square using classes and objects;

```
#include<bits/stdc++.h>
using namespace std;
class rectangle
{
public:
    double a,b;
    void area()
    {
        cout<<"Rectangle area is : "<<a*b<< " square meter\n";
    }
};
class squre
{
public:
    double a;
```

```
   void area()
   {
      cout<<"Square area is : "<<a*a<< " square meter\n";
   }
};

int main()
{
   rectangle rtg;
   squre sqr;
   cout<<"Enter Rectangle length and Width  : ";
   cin>>rtg.a>>rtg.b;
   cout<<"Ënter Squre length : ";
   cin>>sqr.a;
   rtg.area();
   sqr.area();

}
```

Input:

Enter Rectangle length and Width : 20 6

Enter Squre length : 20

Output:

Rectangle area is : 120 square meter

Square area is : 400 square meter

//Q9. Write a Java Program to calculate the area and volume of a room using method overloading.

```
class areaVolume{
   public void calculation(float l, float w){
      System.out.println("Area: " + l*w);
   }
```

```
    public void calculation(float l, float w, float h){
        System.out.println("Volume: " + l*w*h);
    }
}
public class methodoverloading {
   public static void main(String[] args){
      areaVolume obj = new areaVolume();
      obj.calculation(50, 7);
      obj.calculation(50, 7, 6);
   }
}
```

Input:

Output:

Area: 350.0

Volume: 2100.0

//Q10. Write a java program to display the value of any two integer numbers using method overriding.

```
import java.util.Scanner;
class base{
    public void numberDisplay(int a,int b){
        System.out.println("Displayed In Base Class");
        System.out.println(a+" "+b);
    }
}
class derive extends base{
    @Override
    public void numberDisplay(int a,int  b){
        System.out.println("Displayed In Derive Class");
        System.out.println(b+" "+a);
```

```
    }
}
public class methodoverriding {
    public static void main(String[] args) {
        base obj = new base();
        derive obj2 = new derive();
        Scanner scan = new Scanner(System.in);
        int a,b;
        System.out.println("Enter two integer Number: ");
        a = scan.nextInt();
        b = scan.nextInt();
        obj.numberDisplay(a, b);
        obj2.numberDisplay(a, b);
    }
}
```

Input:

Enter two integer Number:

12

56

Output:

Displayed In Base Class

12 56

Displayed In Derive Class

56 12

//Q11. Write a C++ program to perform addition, subtraction, multiplication and division of two integers using switch statement.

```
#include<iostream>
using namespace std;
```

```
class calculator{
public:
   int x,y;
   char c;
   void input();
   void output();
};

void calculator::input(){
   cout << "Enter the number with operation sign: ";
   cin >>x>>c>>y;
}
void calculator::output(){
   cout << "The result is: ";
   switch(c){
   case '+':
      cout << x << c << y << "= " << x+y << endl;
      break;
   case '-':
      cout << x << c << y << "= " << x-y << endl;
      break;
   case '*':
      cout << x << c << y << "= " << x*y << endl;
      break;
   case '/':
      cout << x << c << y << "= " << (double)x/y << endl;
      break;
   default:
      cout << "Not found!" << endl;
      break;
```

```
    }
}

int main(){
    calculator c;
    c.input();
    c.output();
}
```

Input:

Enter the number with operation sign: 123/23

Output:

The result is: 123/23= 5.34783

//Q12. Write a C++ program to enter code and price of some product and display that information using pointers to object.

```
#include<iostream>
using namespace std;

class product{
    string code;
    float price;
public:
    void set_info(){
        cout << "Enter the product code: ";
        getline(cin, code);
        cout << "Enter the product price: ";
        cin >> price;
    }
```

```
    void display(){
        cout << "The product code: " << code << " and price: " << price << endl;
    }

};

int main(){
    product p1;
    product *ptr = &p1;
    p1.set_info();
    ptr -> display();
}
```

Input:

Enter the product code: 45664

Enter the product price: 890

Output:

The product code: 45664 and price: 890

//Q13. Write a Java program to create an Applet for drawing a Polygon.

```
import java.awt.*;
import java.applet.*;
public class Poygon extends Applet
{
    Polygon poly = new Polygon();
    public void paint(Graphics g){
        poly.addPoint(30, 30);
        poly.addPoint(200, 30);
        poly.addPoint(110, 140);
        poly.addPoint(30, 30);
```

```
        g.setColor(Color.red);
        g.drawPolygon(poly);
    }
}
```

Output:

```
//Q14. write a Java program for copying a character from one file to another file
import java.io.*;
import java.util.Scanner;
public class copyCharecter {
    public static void main(String[] args) throws IOException {
        try {
            FileReader file = new FileReader("character.txt");
            FileWriter file2 = new FileWriter("characterOut.txt");
            int c;
            while((c=file.read())!=-1){
                System.out.print((char)c+"\t");
                file2.write((char)c+"\t");
            }
            System.out.println();
            file.close();
            file2.close();
        } catch (FileNotFoundException e) {}
    }
}
```