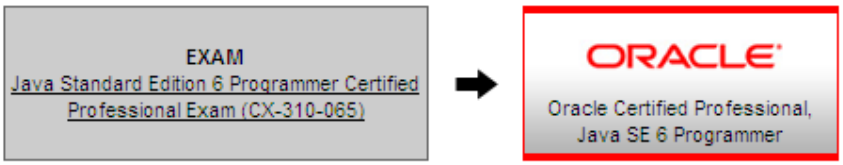
Institute of Java & Software Engineering

Assignment No 02

Object Oriented Programming



Question 1.

```
class Black{
    int x;
    static int y;
    Black(int i, int j){
        x=i;    y=j;
    }
    Black(){  }
}
class Demo{
    public static void main(String args[]){
        Black b1=new Black(100,200);
        Black b2=new Black();
        System.out.println(b2.x+" "+b2.y);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 100 200
b. Prints 0 0
c. Prints 0 200
d. Prints 100 0
e. Compile Error
f. None of the above

Question 2.

```
class Black{
    int x;
    static int y;
    Black(int i, int j){
        x=i;y=j;
    }
}
class Demo{
    public static void main(String args[]){
        Black b1=new Black(100,200);
        Black.y=-1;
        System.out.println(b1.x+" "+b1.y);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 100 200
b. Prints 0 0
c. Prints 0 200
d. Prints 100 0
e. Compile Error
f. None of the above

Question 3.

```
class Black{
    int x;
    static int y;
    Black(int i, int j){
        x=i;y=j;
    }
}
class Demo{
    public static void main(String args[]){
        Black b1=new Black(100,200);
        Black b2=new Black(0,0);
        b2.x=10;
        b2.y=20;

        System.out.println(b1.x+" "+b1.y);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 100 200
b. Prints 10 20
c. Prints 100 20
d. Prints 100 20
e. Compile Error
f. None of the above

Question 4.

```
class Magic{
    static int value;
    Magic(int i){
        value=i;
    }
}
class Demo{
    public static void main(String args[]){
        Magic m1=new Magic(10);
        Magic m2=new Magic(20);
        Magic m3=new Magic(30);

        System.out.println(m1.value+" "+m2.value+"
"+m2.value);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 10 20 30
b. Prints 0 0 0
c. Prints 10 10 10
d. Prints 30 30 30
e. Compile Error
f. None of the above

Question 5.

```
class Magic{
    static int value;
    Magic(int i){
        value=i;
    }
    public static void main(String args[]){
        Magic m1=new Magic(10);   //Line 20
        Magic m2=new Magic(20);   //Line 21
        Magic m3=new Magic(30);   //Line 22
        value=266;                //Line 23

        System.out.println(m1.value+" "+m2.value+"
"+m2.value);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 10 10 10
b. Prints 10 20 30
c. Prints 30 30 266
d. Prints 30 30 30
e. Prints 266 266 266
f. Prints 0 0 0
g. Compile Error at Line 23
f. None of the above

Question 6.

```
1.  class Violet {
2.      int x;
3.      static int y;
4.      public static void main(String[] args) {
5.          int z;
6.          System.out.println("x="+x);
7.          System.out.println(" y="+y);.
8.          System.out.println(" z="+z);
9.      }
10.}
```

What is the result of attempting to compile and run the program?

a. Compiler error at line 2.
b. Compiler error at line 3
c. Compiler error at line 6.
d. Compiler error at line 7.
e. Compiler error at line 9.
f. Compiler error at line 9.
g. Runtime Exception
h. None of the Above

Question 7.

```
class Sienna {
    static double a;
    static float b;
    static int c;
    static char d;

    public static void main(String[] args) {
        a = b = c = d = 'a';
        System.out.println(a+b+c+d == 4 * 'a');
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: true
b. Prints: false
c. Compiler error.
d. Run time error.
e. None of the above.

Question 8.

Which of the following statements are true about a variable created with the static modifier?

1) Once assigned the value of a static variable may not be altered.
2) A static variable created in a method will keep the same value between calls.
3) Only one instance of a static variable will exist for any amount of class instances.
4) The static modifier can only be applied to a primitive value.

Question 9.

```
public class Test {
   static int age;
   public static void main (String args []) {
      age = age + 1;
      System.out.println("The age is " + age);
   }
}
```

A. Compiles and runs with no output
B. Compiles and runs printing out *The age is 1*
C. Compiles but generates a runtime error
D. Does not compile
E. Compiles but generates a compile time error

Select the most appropriate answer.

Question 10.

What is the output for the following code ?

```
class Torment{
   int i = 2;
   public static void main(String args[]){
      int i = 12;
      System.out.println(i);
   }
}
```

Options :

a. Compiler error , System.out.println (i) : can't make a static reference to a non static variable i
b. Output = 2
c. Output = 12
d. Compiler error , i = 12 : variable i is already defined in this class

Question 11.

Consider the following class .

Which of the marked lines need to be commented out for the class to compile correctly ?

```
class Evolve{
   static int i = 1;
   static int j = 2;
   int x = 3;
   static int y = 6;
   public static void main(String args[]){
      System.out.println(i + j);//---1
      System.out.println(x + i);//---2
      System.out.println(i + y);//---3
      System.out.println(x + j);//---4
   }
};
```

Options :

a. 1 & 2
b. 1 ,2 & 4
c. 3 & 4
d. 2 & 4
e. 1 , 2 & 3

Question 12.

```
class Teal {
    static boolean b1;
    public static void main(String[] args) {
        boolean[] array = new boolean[1];
        boolean b2;
        System.out.print(b1+",");
        System.out.print(array[0]+",");
        System.out.print(b2);
    }
}
```

What is the result of attempting to compile and run the program?

a. true,true,true
b. false,false,false
c. null,null,null
d. false,true,false
e. Compiler Error.
f. Runtime Error.

Question 13.

```
class Myclass{
    static int value;
    Myclass(){
        value++;
    }
    void printValue(){
        System.out.print(value+" ");
    }
}
class Demo{
    public static void main(String args[]){
        Myclass c1=new Myclass();
        Myclass c2=new Myclass();
        Myclass c3=new Myclass();
        c1.printValue();
        c2.printValue();
        c3.printValue();
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints 0 0 0
b. Prints 1 2 3
c. Prints 3 3 3
d. Prints 0 1 2
e. Compile Error
f. None of the above

Question 14.

s

```
class Red {
    int a;
    static int b;

    public static void main (String[] in) {
        Red r1 = new Red();
        Red r2 = new Red();
        r1.a++;
        r1.b++;
        System.out.print(r1.a+", "+r1.b+", "+ r2.a+", "+r2.b);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 0, 0, 0, 0
b. Prints: 1, 1, 1, 0
c. Prints: 1, 1, 0, 0
d. Compiler Error
e. Prints: 0, 1, 1, 1
f. Prints: 1, 1, 0, 1
g. Prints: 1, 1, 1, 1
h. Run time Exception

Question 15.

```
class Basics {
   static int x = 1;
   static int y = 2;

   public static void main (String[] args) {
      System.out.println(x+y);
   }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 1 2
b. Prints: 12
c. Prints: 3
d. Runtime Exception
e. Compiler Error

Question 16.

Given:

```
1. class Voop {
2.   public static void main(String [] args) {
3.     doStuff(1);
4.     doStuff(1,2);
5.   }
6.   // insert code here
7. }
```

Which, inserted at line 6, will compile?
(Choose all that apply.)

A). static void doStuff(int... doArgs) { }
B). static void doStuff(int[] doArgs) { }
C). static void doStuff(int doArgs...) { }
D). static void doStuff(int... doArgs, int y) { }
E). static void doStuff(int x, int... doArgs) { }
F). None of the above code fragments will compile.

Question 17.

```
class DemoClass{
    static int m(int i, String s) {
        System.out.print("["+s+","+i+"]"+",");
        return i;
    }
    public static void main (String[] args) {
        int i = 0;
        int a[] = new int[3];
        a[m(i++,"a")] = m(i++,"b");
        System.out.print(a[0]+","+a[1]+","+a[2] +","+ i);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: [a,0],[b,1],1,0,0,2
b. Prints: [a,1],[b,2],0,2,0,2
c. Prints: [a,1],[b,0],0,0,0,2
d. Prints: [a,2],[b,1],0,0,1,2
e. Runtime error
f. Compiler error
g. None of the above

Question 18.

```
class A {
    static int m(int i) {
        System.out.print(i + ",");
        return 0;
    }
    public static void main (String[] args) {
        int i = 0;
        i = i++ + m(i);
        System.out.print(i);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 0,0
b. Prints: 1,0
c. Prints: 0,1
d. Prints: 1,1
e. Runtime error
f. Compiler error
g. None of the above

Question 19.

```
class M {
    static int m(int i) {
        System.out.print(i + ", ");
        return i;
    }
    public static void main(String s[]) {
        int i=0;
        int j = m(++i) + m(++i) * m(++i) % m(++i) + m(++i);
        System.out.print( j % 5);
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 1,2,3,4,5,1
b. Prints: 1,2,3,4,5,2
c. Prints: 1,2,3,4,5,3
d. Prints: 1,2,3,4,5,4
e. Prints: 1,2,3,4,5,5
f. Compiler error

Question 20.

```
class A {
   static byte m1() {
        final char c = 'b'-'a';
        return c;                       // 1
    }
    static byte m2() {
        final short s = 2;
        return s;                       // 2
    }
    static byte m3(final char c) {
            return c;                   // 3
    }
    static byte m4(final short s) {
            return s;                   // 4
    }
    public static void main(String[] args) {
        char c = 'd'-'a';
        short s = 4;
        System.out.print(""+m1()+m2()+m3(c)+m4(s));
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 1234 b. Prints: 10
c. Compiler Error at 1. d. Compiler Error at 2
e. Compiler Error at 3 f. Compiler Error at 4.
g. Runtime Error h. None of the Above

Question 21.

```
class Red12 {
   Red12() {
      System.out.print("Constructor ");
   }
   static {
       System.out.print("Static ");
   }
   {
      System.out.print("Instance ");
   }

   public static void main(String args[]) {
      Red12 red = new Red12();
   }
}
```

What is the result of attempting to compile and run the program?

a. Instance Static Constructor b. Static Constructor Instance
c. Constructor Instance Static d. Constructor Static Instance
e. Static Instance Constructor f. Instance Constructor Static

Question 22.

```
class Blue {
  Blue() {
      System.out.print("Constructor ");
   }
  static {
      System.out.print("Static ");
   }
   public static void main(String args[]) {
      System.out.print("Main ");
       Blue blue = new Blue();
   }
}
```

What is the result of attempting to compile and run the program?

a. Constructor Static Main b Static Main Constructor
c. Main Constructor Static d. Main Static Constructor
e Static Constructor Main f. Constructor Main Static

Question 23.

```
public class MyArt{
   public static void main(String argv[]) {
       MyArt m = new MyArt();
         m.amethod();
    }
       public void amethod(){
            static int i;
            System.out.println(i);
         }
}
```

What will happen when you attempt to compile and run the program

a. Compilation and output of the value 0
b. Compile time error because i has not been initialized
c. Compilation and output of null
d. Compile time error

Question 24.

What is the output of the following code?

```
class Test{
    Test(int i){
        System.out.print("Test(" +i +") ");
    }
}
class Globle{
    static Test  t1 = new Test(1);
    Test         t2 = new Test(2);
    static Test  t3 = new Test(3);

   public static void main(String[] args){
    Globle Q = new Globle();
   }
}
```

What is the result of attempting to compile and run the program?

a. Test(1) Test(2) Test(3) b. Test(3) Test(2) Test(1)
a. Test(3) Test(3) Test(3) b. Test(1) Test(3) Test(2)
e. Compile Error f. None of the above

Question 25.

```
class M {
  static int m(int i) {
      System.out.print(i + ", ");
      return i;
   }
  public static void main(String s[]) {
    m(m(1) + m(2) % m(3) * m(4));
  }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 1, 2, 3, 4, 0, d. Prints: 1, 2, 3, 4, 12,
c. Prints: 1, 2, 3, 4, 9, d. Prints: 2, 3, 4, 1, 3,
e. Compiler error` f. None of the above

Question 26.

```
class Static{
   static void m(){
   }
   public static void main(String args[]){
      Static s=new Static();
      m();                          // 1
      new Static().m();             // 2
      Static.m();                   // 3
      s.m();                        // 4
   }
}
```

Compile time errors are generated at which lines?

a. line 1 b. line 2
c. line 3 d. line 4
e. Compile and run the program without error

Question 27.

```
class MyClass{
    int value;
    {
        System.out.print("Instance Block : "+value)+ " ");
        value++;        //Line 10
    }
    MyClass(){
        System.out.print("Constructor : "+value+" ");
        value++;        //Line 11
    }
}
class Demo{
    public static void main(String s[]) {
        MyClass c1=new MyClass();
        System.out.println("Main Method : "+c1.value);
    }
}
```

What is the result of attempting to compile & run the program?

a. Constructor 0 Instance block 1 Main Method 2
b. Instance block 1 Constructor 0 Main Method 2
c. Instance block 0 Constructor 1 Main Method 2
d Compile Error at line 10
e. Compile Error at line 11

Question 28.

```
1:   class Queue
2:   {
3:       int i = 20;
4:       static
5:       {
6:          int i = 10;
7:
8:       }
9:       public static void main(String[] args)
10:      {
11:         Queue a = new Queue();
12:         System.out.println(a.i);
13:      }
14:  }
```

What is the result of attempting to compile & run the program?

A. Compilation error, variable "i" declared twice.
B. Compilation error, static initializers for initialization purpose only.
C. Prints 10.
D. Prints 20.

Question 29.

```
class M {
    static int m(int i) {
        System.out.print(i + ", ");
        return i;
    }
    public static void main(String s[]) {
        m(m(1) + m(2) % m(3) * m(4));
    }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 1, 2, 3, 4, 0,
b. Prints: 1, 2, 3, 4, 12,
c. Runtime error
d. Prints: 1, 2, 3, 4, 3,
e. Prints: 2, 3, 4, 1, 9,
f. Compiler error
g. Prints: 1, 2, 3, 4, 9,
h. Prints: 2, 3, 4, 1, 3,
i. None of the above

Question 30.

Given the following code,

What will be output?

```
class Pass{
   static int j=20;
   public static void main(String argv[]){
       int i=10;
      Pass p = new Pass();
      p.amethod(i);
      System.out.println(i);
      System.out.println(j);
   }
  public void amethod(int x){
    x=x*2;
    j=j*2;
  }
} a.  20 and 40          b.       10 and 40
```

c. 10, and 20 d. 20 and 20
e. Error: amethod parameter does not match variable

Question 31.

```
class B {
   static int m1(byte b) {
      return b;                                  // 1
   }
   static int m2(char c) {
      return c;                                  // 2
   }
   static int m3(short s)  {
       return s;                                 // 3
   }
   static int m4(long l) {
         return l;                               // 4
   }
   static int m5(float f) {
      return f;                                  // 5
   }
   public static void main(String[] args) {
      byte b = 1;
      char c = 'c'-'a';
      short s = 3;
      long l = 4L;
      float f = 5.0f;
      System.out.print(""+m1(b)+m2(c)+m3(s)+m4(l)+m5(f));
   }
}
```

What is the result of attempting to compile and run the program?

a. Prints: 12345
b. Prints: 12345.0
c. Prints: 15
d. Prints: 15.0
e. Compiler Error at 1.
f. Compiler Error at 2.
g. Compiler Error at 3.
h. Compiler Error at 4.
i. Compiler Error at 5.
j. Runtime Error

Question 32.

```
class MyClass{
  static int i;
  public static void main(String argv[]){
    System.out.println(i);
  }
}
```

What will happen when you compile and run the following code?

a. Error Variable i may not have been initialized
b. Prints null c. Prints 1 d. Prints 0

Question 33.

```
class White{
    int one=1;
    static int two=2;

    void onePlusTwo(){
        System.out.println("one+two :"+(one+two));    //Line 1
    }
    static void oneDiveTwo(){
        System.out.println("one/two :"+(one/two));     //Line 2
    }

    public static void main(String[] args) {
        White w1=new White();
        w1.oneDiveTwo();  //Line 3
        w1.onePlusTwo();  //Line 4
    }
}
```

What will happen when you compile and run the following code?

a. Compie Error at line 1 b. Compie Error at line 2
c. Compie Error at line 3 c. Compie Error at line 4
e. The program will compile without erros

Question 34.

Examine the following class definition:

```
class Test {
   static void test() {
      print();
   }
   static void print() {
      System.out.println("Test");
   }
   void print() {
      System.out.println("Another Test");
   }
}
```

What is the result of compiling this class?

A. A successful compilation.
B. A warning stating that the class has no main method.
C. An error stating that there is a duplicated method.
D. An error stating that the method test() will call one or other of the print() methods.

Question 35.

```
class MyClss{
   static void myMethod(int i){
      System.out.print("m(int)");
   }
   void myMethod(float f){
      System.out.print("m(float)");
   }
   public static void main(String []args){
      MyClss c1=new MyClss();
      //Insert code here Line 12
   }
}
```

Which of the following code fragment could be inserted at line 12 and still allow the code to compile?

a. c1.myMethod(100);
b. c1.myMethod(1.5f);
c. MyClss.myMethod(1.5f);
d. c1.myMethod((int)1.5f);
e. MyClss.myMethod(100);
f. new MyClass().myMethod(1.0f);

Question 36.

Which of the following statements are true?

a. A static method is also known as a class method.
b. A class method is not associated with a particular instance of the class.
c. The keyword "this" can not be used inside the body of a static method.
d. The keyword "super" may be used in the body of a static method.
e. A method that is not static is known as an instance method.
f. None of the above.

Question 37.

```
class TestArray{
  public static void main(String args[]){
    int tot=0;
    int x[]={1,2,3,4,5};
    for(int y:x){
      tot +=y;
    }
     System.out.print(tot);
  }
}
```

What is the result of attempting to compile & run the program?

a. 12345 b. 15
c. Compile time error d. Run time error
e. None of the above

Question 38.

If arr[] contains only positive integer values,
What does this function do?

```
int guessWhat( int arr[] ){
    int x= 0;
    for( int i = 0; i < arr.length; i++ )
       x = x < arr[i] ? arr[i] : x;
       return x;
}
```

a) Returns the index of the highest element in the array
b) Returns true/false if there are any elements that repeat in the array
c) Returns how many even numbers are in the array
d) Returns the highest element in the array
e) Returns the number of question marks in the array

Question 39.

Which of the following statements are true?

a. The elements in a Java array can only be of primitive types, not objects
b. Arrays are initialized to default values wherever they are created
c. An array may be dynamically resized using the setSize method
d. You can find out the size of an array using the size method

Question 40.

```
class Blue {
  public static void main (String[] args) {
    String s = null;
    System.out.print(s);
  }
}
```

What is the result of attempting to compile and run the program?

a. Prints nothing.
b. Prints: null
c. Compiler error
d. Runtime error

Question 41.

You have a public class called myclass with the main method defined as follows

```
public static void main(String parm[]){
   System.out.println(parm[0]);
 }
```

If you attempt to compile the class and run the program as follows,

java myclass hello

What will happen?

1) Compile time error, main is not correctly defined
2) Run time error, main is not correctly defined
3) Compilation and output of java
4) Compilation and output of hello

Question 42.

What will happen when you attempt to compile and run the following code with the command line "hello there"?

```
class Arg{
   String[] MyArg;
    public static void main(String argv[]){
       MyArg=argv;
   }
   void amethod(){
        System.out.println(argv[1]);
    }
}
```

1) Compile time error
2) Compilation and output of "hello"
3) Compilation and output of "there"
4) None of the above

Question 43.

Given the following main method in a class called Cycle and a command line of

java Cycle one two

What will be output?

```
public static void main(String bicycle[]){
   System.out.println(bicycle[0]);
}
```

1) None of these options
2) cycle
3) one
4) two

Question 44.

What will be printed out if this code is run with the following command line?

java myprog good morning

```
class myprog{
   public static void main(String argv[]){
      System.out.println(argv[2])
   }
}
```

1) myprog
2) good
3) morning
4) Exception
ArrayIndexOutOfBoundsException: 2

Question 45.

Given the following code

```
class Sytch{
   int x=2000;
   public static void main(String argv[]){
      System.out.println("Ms "+argv[1]+"Please pay $"+x);
   }
}
```

What will happen if you attempt to compile and run this code with the command line?

java Sytch Jones Diggle

1) Compilation and output of Ms Diggle Please pay $2000
2) Compile time error
3) Compilation and output of Ms Jones Please pay $2000
4) Compilation but runtime error

Question 46.

If MyProg.java were compiled as an application and then run from the command line as:

java MyProg I like tests

What would be the value of args[1] inside the main( ) method?

a) MyProg
b) "I"
c) "like"
d) 3
e) 4
f) null until a value is assigned

Question 47.

```
class Test{
    int[] array;
    //Constructors code
}
```

Select valid constructors for class "Test".

a. `Test(){}`
b. `Test(int i){array=i;}`
c. `Test(int[] x){array=x;}`
d. `Test(int n){array=new int[n];}`
e.
```
Test(int[] ar){
    array=new int[ar.length];
    for(int i=0;i<ar.length;i++){
        array[i]=ar[i];
    }
}
```

Question 48.

```
class Vehicle{
   String name,color,brand;
   int price,year;
   Vehicle(String n,String b,String c,int p,int y){
         name=n; brand=b; color=c; price=p; year=y;
   }
}
class Car{
   String name,color,brand;
   int price,year;
   void ValueOfVehicle(.....){
         // ..................
   }
   void printDetails(){
         System.out.println(name+" "+brand+" "+color+"
"+price+" "+year);
   }
}
class DemoVehicle{
   public static void main(String args[]){
         Vehicle v=new
Vehicle("Toyota","Corolla","Red",2000000,2001);
         Car c=new Car(); c.ValueOfVehicle(v); c.printDetails();
   }
}
```

To display the following output, complete the above program.

"Output : Toyota Corolla 2000000 2001"

Question 49.

```
class Test{
   static int m(int i, String s) {
      System.out.print("["+s+","+i+"]"+",");
      return i;
   }
   public static void main (String[] args) {
      int i = 0;
      int a[] = new int[3];
      a[m(i++,"a")] = m(i++,"b");
      System.out.print(a[0]+","+a[1]+","+a[2] +","+ i);
   }
}
```

What is the result of attempting to compile and run the program?

a. Prints: [a,0],[b,1],1,0,0,2
b. Prints: [a,1],[b,2],0,2,0,2
c. Prints: [a,1],[b,0],0,0,0,2
d. Prints: [a,2],[b,1],0,0,1,2
e. Runtime error
f. Compiler error
g. None of the above

Question 50.

```
class Student{
   String name;
   int age;
   int[] marks=new int[4];//array for 4 subjectes

   /*
    * Insert code here
    *
    *
    *
    *
   */

   void printDetail(){
      System.out.print(getName()+"\t");
      for(int i:marks){
         System.out.print(i+"\t");
      }

   System.out.println(max()+"\t"+min()+"\t"+total()+"\t"+grade(
));
   }
}
class DemoStudent{
   public static void main(String args[]){
      Student s1=new Student();//Default constructor
      Student s2=new Student();//Default constructor
      Student s3=new Student("Nimal");
      Student s4=new Student("Nimal",20);//constructor to Set
Name and age
      Student s5=new Student("Amila",21,new
int[]{34,23,87,67,87,89});

      s1.setStudentDetail("Samila",18,new int[]{98,78,65,67});

      s2.setStudentDetail(s5);//copy detail from student s5
      s2.setName("Wimal");//change name

      s3.setAge(22);
      s3.setMarks(98,67,65,78);

      int[] marks=new int[]{98,78,90,98};
      s4.setMarks(marks);

      s1.printDetail();
      s2.printDetail();
      s3.printDetail();
      s4.printDetail();
      s5.printDetail();
   }
}
```

Complete above program.