Sonargaon University(SU)

Department of Computer Science and Engineering
B.Sc Engineering in Computer Science and Engineering

Assignment name : Lab Final Assignment
Course title : State of Art Programming Sessional
Course code : CSE334
Section : 20B
Session : Spring 2023

Submitted by	**Submitted to**
Name : Riyaz Hossain ID : CSE1901016170	Name: Md. Ashfakur Rahman Designation: Lecturer

Date: 1st April 2023

Task No. : 01

Task name: Interface

Source code:

myAssignment.java

```
package com.mycompany.myassignment;

import java.util.Scanner;
import Interface_Assignment.Rectangle;

public class MyAssignment {

    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in); // Create Reader
        System.out.print("Enter Your height of the ractangle : "); // Ask the user for something
        int a = scan.nextInt(); // Read value from user
        System.out.println("Enter the width of the ractangle : ");
        int b = scan.nextInt();
        Rectangle re = new Rectangle();
        re.Area(a, b);
    }
}
```

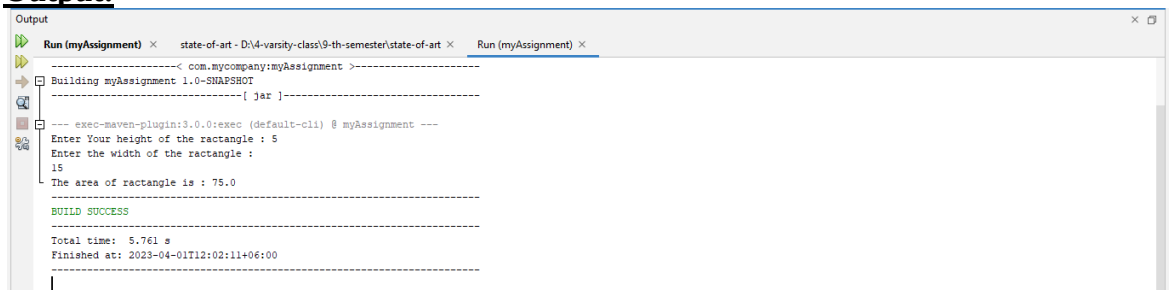
Area.java

```
package Interface_Assignment;


public interface Area {
    public void Area(float a, float b);
}
```

Rectangle.java

```
package Interface_Assignment;
public class Rectangle implements Area {

    public void Area(int a, int b) {
        System.out.println("The area of ractangle is : " + a * b);
    }
}
```

Output:



Task No. : 02

Task name: Polymorphism(Overloading and overriding)

Source code:

myAssignment.java

```
package com.mycompany.myassignment;
import java.util.Scanner;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;

public class MyAssignment {

    public static void main(String[] args) {

        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the value of A : ");
        int a = scan.nextInt();
        System.out.println("Enter the value of B : ");
        int b = scan.nextInt();
        System.out.println("Enter the value of C : ");
        int c = scan.nextInt();
        Overloading ovl = new Overloading();
        System.out.println("Addition in overloading is : " + ovl.add(a, b));
        System.out.println("Addition in overloading is : " + ovl.add(a, b,c));
        Overriding ovr = new Overriding();
        System.out.println("Addition from overriding : "+ovr.add(a, b, c));
    }
}
```

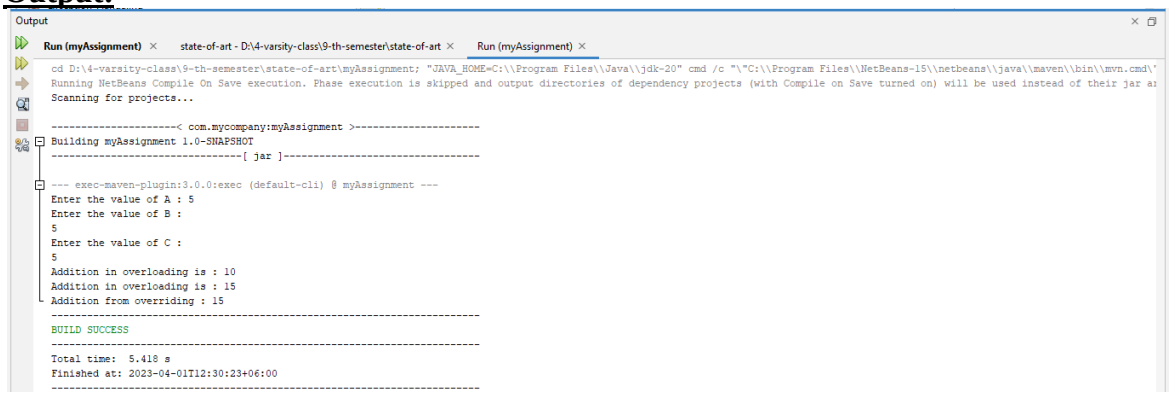
Overloading.java

```
package polymorphism_assignment;
public class Overloading {
     public int add(int a, int b)
    {
      return a + b;
    }

    public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Overriding.java

```
package polymorphism_assignment;
public class Overriding extends Overloading {
   public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Output:



Task No. : 03

Task name: Inheritance

Source code:

myAssignment.java

```
package com.mycompany.myassignment;
import java.util.Scanner;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;

public class MyAssignment {

   public static void main(String[] args) {

       Scanner scan = new Scanner(System.in);
       System.out.print("Enter the value of A : ");
       int a = scan.nextInt();
       System.out.println("Enter the value of B : ");
       int b = scan.nextInt();
       System.out.println("Enter the value of C : ");
       int c = scan.nextInt();
       Overloading ovl = new Overloading();
       System.out.println("Addition Form Parent class : " + ovl.add(a, b));
       System.out.println("Addition From Parent class : " + ovl.add(a, b,c));
       Overriding ovr = new Overriding();
       System.out.println("Addition Child Class : "+ovr.add(a, b, c));
   }
}
```

Overloading.java

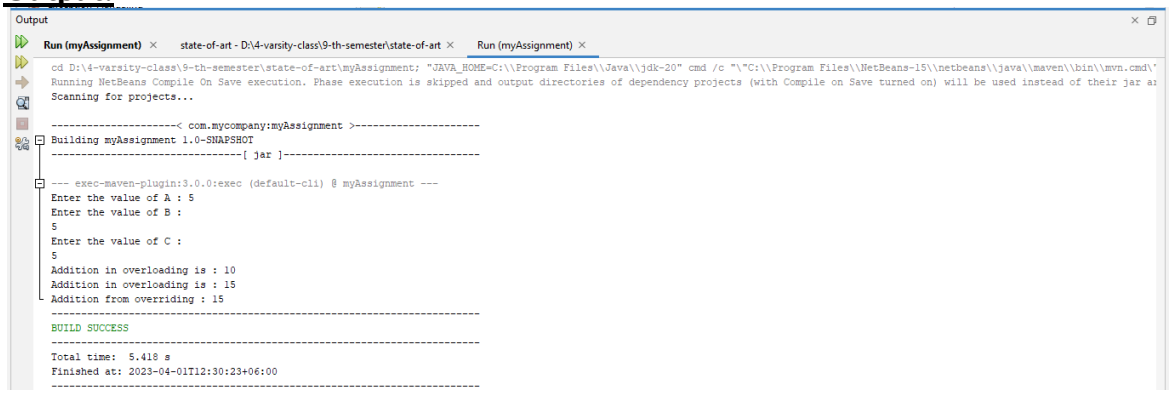
```
package polymorphism_assignment;
public class Overloading {
    public int add(int a, int b)
   {
     return a + b;
   }
```

```
    public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Overriding.java

```
package polymorphism_assignment;
public class Overriding extends Overloading {
   public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Output:



Task No. : 04

Task name: Enum and Vector

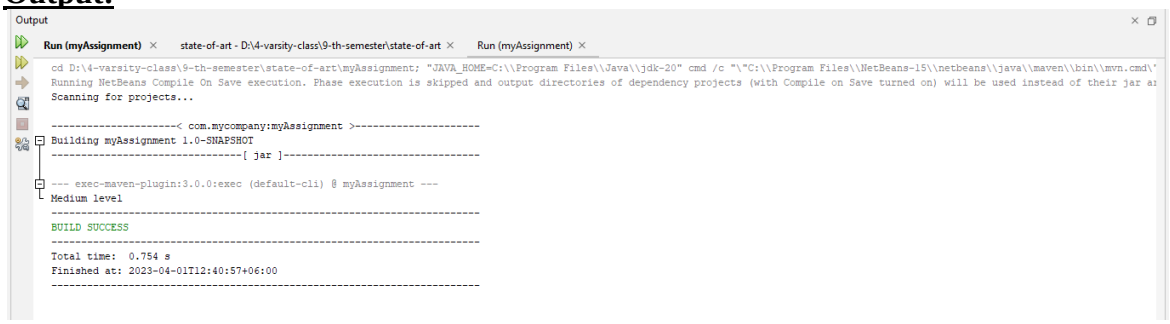
Source code:

myAssignment.java

```
package com.mycompany.myassignment;

import java.util.Scanner;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;
//enum
public class MyAssignment {

    enum Level {
        LOW,
        MEDIUM,
        HIGH
    }

    public static void main(String[] args) {
        Level myVar = Level.MEDIUM;
        switch(myVar) {
            case LOW:
```

```
            System.out.println("Low level");
            break;
        case MEDIUM:
            System.out.println("Medium level");
            break;
        case HIGH:
            System.out.println("High level");
            break;
    }

  }
}
```

Output:

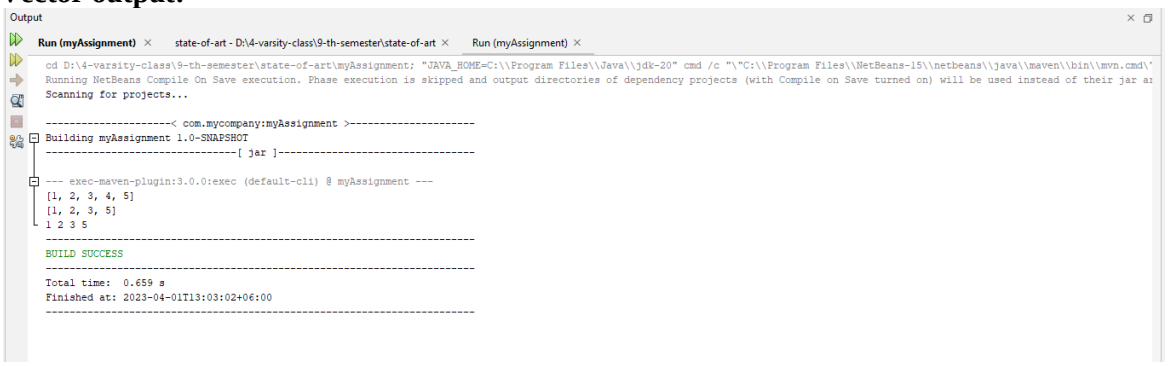


//vector

```
package com.mycompany.myassignment;

import java.util.Scanner;
import java.io.*;
import java.util.*;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;

public class MyAssignment {
   public static void main(String[] args) {


 // Size of the Vector
        int n = 5;

        // Declaring the Vector with
        // initial size n
        Vector<Integer> v = new Vector<Integer>(n);

        // Appending new elements at
        // the end of the vector
        for (int i = 1; i <= n; i++)
            v.add(i);

        // Printing elements
        System.out.println(v);

        // Remove element at index 3
```

```
        v.remove(3);

        // Displaying the vector
        // after deletion
        System.out.println(v);

        // iterating over vector elements
        // using for loop
        for (int i = 0; i < v.size(); i++)

            // Printing elements one by one
            System.out.print(v.get(i) + " ");
    }
}
```

Vector output:



Task No. : 05

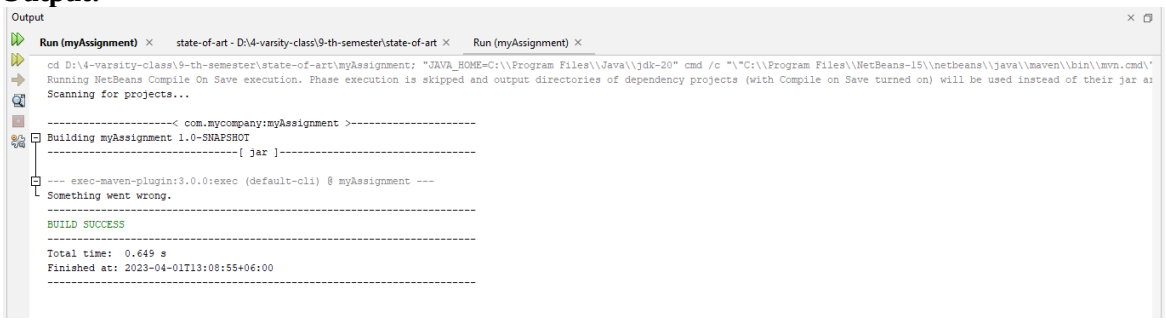
Task name: Exception Handling

Source code:

myAssignment.java

```
package com.mycompany.myassignment;

import java.util.Scanner;
import java.io.*;
import java.util.*;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;

public class MyAssignment {
    public static void main(String[] args) {

  try {
      int[] myNumbers = {1, 2, 3};
      System.out.println(myNumbers[10]);
    } catch (Exception e) {
      System.out.println("Something went wrong.");
    }
    }
}
```

Output:



Task No. : 06

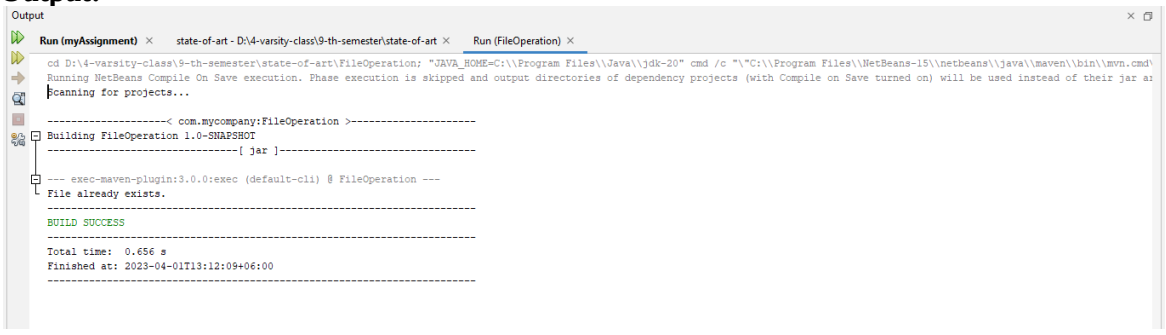
Task name: File Operation

Source code:

FileOperation.java

```
package com.mycompany.fileoperation;
import java.io.File;
import java.io.IOException;
public class FileOperation {

    public static void main(String[] args) {
      try {
          File Obj = new File("myfile.txt");
          if (Obj.createNewFile()) {
              System.out.println("File created: "
                                 + Obj.getName());
          }
          else {
              System.out.println("File already exists.");
          }
       }
       catch (IOException e) {
          System.out.println("An error has occurred.");
          e.printStackTrace();
       }
    }
}
```

Output:



Task No. : 07

Task name: Package

Source code:

myAssignment.java

```
package com.mycompany.myassignment;
import java.util.Scanner;
import Interface_Assignment.Rectangle;
import polymorphism_assignment.*;

public class MyAssignment {

    public static void main(String[] args) {

        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the value of A : ");
        int a = scan.nextInt();
        System.out.println("Enter the value of B : ");
        int b = scan.nextInt();
        System.out.println("Enter the value of C : ");
        int c = scan.nextInt();
        Overloading ovl = new Overloading();
        System.out.println("Addition Form Parent class : " + ovl.add(a, b));
        System.out.println("Addition From Parent class : " + ovl.add(a, b,c));
        Overriding ovr = new Overriding();
        System.out.println("Addition Child Class : "+ovr.add(a, b, c));
    }
}
```

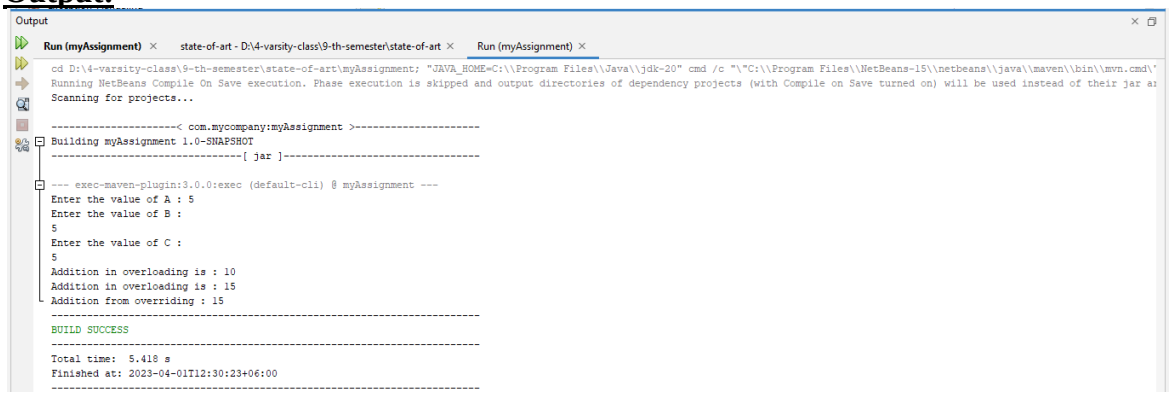
Overloading.java

```
package polymorphism_assignment;
public class Overloading {
     public int add(int a, int b)
    {
      return a + b;
    }

    public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Overriding.java

```
package polymorphism_assignment;
public class Overriding extends Overloading {
   public int add(int a, int b, int c)
    {
        return a + b + c;
    }
}
```

Output:



Task No. : 08

Task name: Label Loop

Source code:

LabelLoop.java

```
package com.mycompany.labelloop;
public class LabelLoop {

    public static void main(String[] args) {
        int i, j;
//outer loop
        outer:     //label
        for (i = 1; i <= 5; i++) {
            System.out.println();
//inner loop
            inner:      //label
            for (j = 1; j <= 10; j++) {
                System.out.print(j + " ");
                if (j == 9) {
                    break inner;
                }
            }
        }
    }
}
```