JAVA LAB PROGRAM

week 1.Execution of first java program

message.java | add.java | mesage.java | breaksatement.java

```java
package kruthi;

public class message
{
    public static void main(String[] args)
    {//main method
        // TODO Auto-generated method stub
        System.out.println("WELCOME TO JAVA PROGRAMMING");
        System.out.println("WELCOME TO MYSURU CITY");
        System.out.println("WELCOME TO KARNATAKA");
    }//end of main method
}//end of class message

```

Problems | Javadoc | Declaration

```
<terminated> message [Java Application] C:\
WELCOME TO JAVA PROGRAMMING
WELCOME TO MYSURU CITY
WELCOME TO KARNATAKA
```

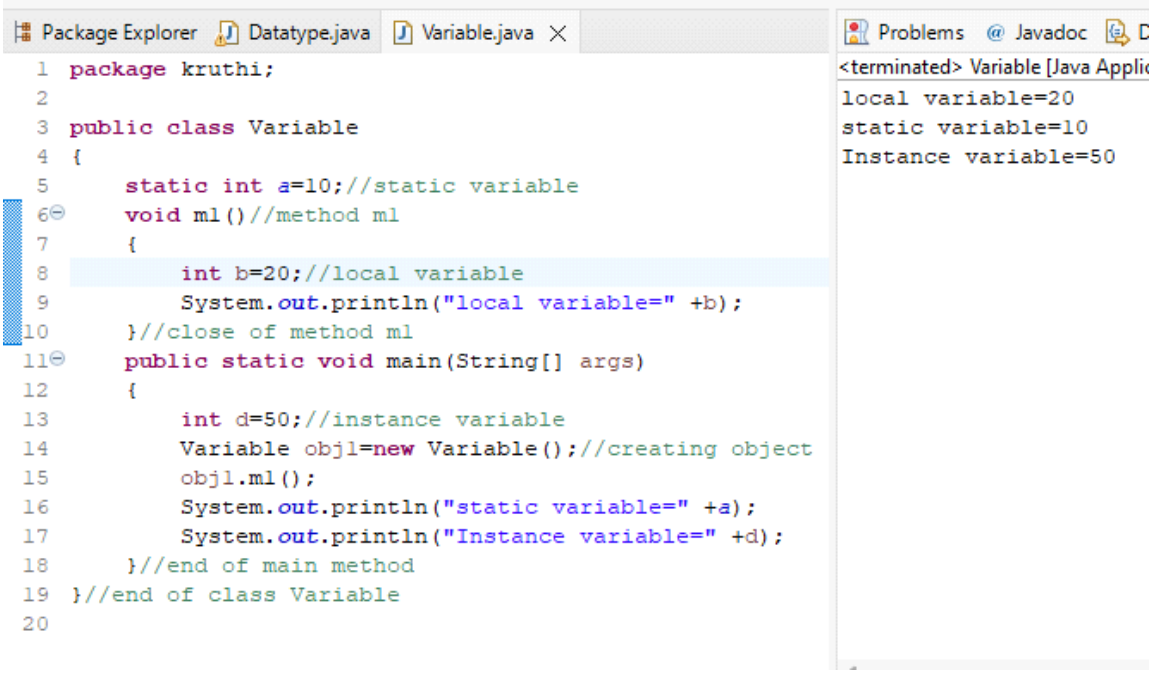
week 2. a. Code, execute and debug programs that uses different types of variables and datatypes.

```java
package kruthi;

public class Datatype
{
    public static void main (String []args)
    {
        byte b=4;
        short s=12;
        int i=110;
        long l=12345L;
        float f=1.12f;
        double d=1.12345d;
        boolean bool=true;
        char c = 'a';
        System.out.println("byte datatype:" +b);
        System.out.println("short datatype:" +s);
        System.out.println("int datatype:" +i);
        System.out.println("long datatype:" +l);
        System.out.println("float datatype:" +f);
        System.out.println("double datatype:" +d);
        System.out.println("boolean datatype:" +b);
        System.out.println("char datatype:" +c);
    }
}//end of class Datatype

```

<terminated> Datatype [Java Applicat

```
byte datatype:4
short datatype:12
int datatype:110
long datatype:12345
float datatype:1.12
double datatype:1.12345
boolean datatype:4
char datatype:a
```

b. Variable



week 3.Code, execute and debug programs

a. that uses different types of constructors.

Rectangle.java

```
1  package kruthi;
2  class Rect
3  {
4      int length;
5      int breadth;
6      Rect()
7      {//default constructor
8          length=0;
9          breadth=0;
10     }// end of default constructor
11     //parameterized constructor
12     Rect(int x,int y)
13     {
14         length=x;
15         breadth=y;
16     }//end of parameterized constructor
17     //copy constructor
18     Rect(Rect r)
19     {
20         length=r.length;
21         breadth=r.breadth;
22     }//end of copy constructor
23     //calculating area of rectangle
24     void area()
25     {
26         int area=length*breadth;
27         System.out.println("area of rectangle is:"+area);
28     }//end of method area
29 }//end of class Rect
30
31 public class Rectangle {
32
33     public static void main(String[] args)
34     {
35         Rect r1=new Rect();//calling default constructor
36         Rect r2=new Rect(10,5);//calling parameterized constructor
37         Rect r3=new Rect(r2);//calling copy constructor
38         r1.area();//invoking method area
39         r2.area();
40         r3.area();
41         }
42 }//end of class rectangle
```

Problems @ Javadoc Declarat

<terminated> Rectangle [Java Applicatio

```
area of rectangle is:0
area of rectangle is:50
area of rectangle is:50
```

b.for expression evaluation

Rectangle.java | Expression.java

```
1  package kruthi;
2
3  public class Expression {
4
5      public static void main(String[] args)
6      {
7          System.out.println(10+2*6);
8          System.out.println(100*2+12);
9          System.out.println(100*(2+12));
10         System.out.println(100*(2+12)/14);
11         System.out.println(10>6 && 6>8);
12     }
13
14 }//end of class Expression
15
```

Probl

<terminat

```
22
212
1400
100
false
```

c. to perform autoboxing and unboxing.

Rectangle.java | Expression.java | Box1.java

```
1  package kruthi;
2
3  public class Box1
4  {
5
6      public static void main(String[] args)
7      {
8          byte a=1;//byte datatype
9          Byte bobj=new Byte(a);//wrapping around Byte object
10         int i=10;//int datatype
11         Integer iobj=new Integer(i);//wrapping around Integer object
12         float f=18.6f;
13         Float fobj=new Float(f);
14         double d=250.5d;
15         Double dobj=new Double(d);
16         char c='a';
17         Character cobj=new Character(c);
18         System.out.println("value of wrapper object-printing as object is:");
19         System.out.println("Byte object bobj:" +bobj);
20         System.out.println("Integer object iobj:" +iobj);
21         System.out.println("float object fobj:" +fobj);
22         System.out.println("double object bobj:" +dobj);
23         System.out.println("Character object cobj:" +cobj);
24         //converting object to primitive datatype(unboxing)
25         byte bv=bobj;
26         int iv=iobj;
27         float fv=fobj;
28         double dv=dobj;
29         char cv=cobj;
30         System.out.println("unwrapped values-printing as primitive datatype:");
31         System.out.println("byte value,bv:" +bv);
32         System.out.println("int value,iv:" +iv);
33         System.out.println("float value,fv:" +fv);
34         System.out.println("double value,dv:" +dv);
36         }
37 }//end of class Box1
```

Problems | Javadoc | Declaration | Console

<terminated> Box1 [Java Application] C:\Users\Admin\.p2\pool\plugins\

```
value of wrapper object-printing as object is:
Byte object bobj:1
Integer object iobj:10
float object fobj:18.6
double object bobj:250.5
Character object cobj:a
unwrapped values-printing as primitive datatype:
byte value,bv:1
int value,iv:10
float value,fv:18.6
double value,dv:250.5
char value,cv:a
```

week 6.Code, execute and debug programs that uses encapsulation concept.

```java
package kruthi;
class Ecap
{
    //private variables declared can be accessed by public method of class
    private String sname;
    private int sid;
    private int sage;
    //using get() method to access private variables
    public String getname()
    {
        return sname;
    }
    public int getid()
    {
        return sid;
    }
    public int getage()
    {
        return sage;
    }
    //using set() method to access private variables
    public void setname(String newname)
    {
        sname=newname;
    }
    public void setid(int newid)
    {
        sid=newid;
    }
    public void setage(int newage)
    {
        sage=newage;
    }
}//end of class Ecap
```

```
<terminated> Cap1 [Java
student name:ZYX
student id:111
student age:20
```

```java
//main class
public class Cap1
{
    public static void main(String[] args)
    {
        Ecap obj=new Ecap();
        //setting value for the variables
        obj.setname("ZYX");
        obj.setid(111);
        obj.setage(20);
        //displaying the value of variables
        System.out.println("student name:" +obj.getname());
        System.out.println("student id:" +obj.getid());
        System.out.println("student age:" +obj.getage());
        }
}//end of class Cap1
```

SRP program

```
package kruthi;

class calucator
{
    Addition a=new Addition();
    Subtraction s=new Subtraction();
    Multiplication m= new Multiplication();
    Division d= new Division();

    void performAddition( int x,int y)
    {
        a.add(x,y);
    }
    void performSubtraction(int x,int y)
    {
        s.sub(x,y);
    }

    void performMultiplication(int x,int y)
    {
        m.mul(x,y);
    }
    void performDivision(int x,int y)
    {
        d.div(x,y);
    }
} //end of class calculator
class Addition
{
    int res;
    void add(int a,int b)
    {
        res=a+b;
        System.out.println("addition of two numbers =" +res);
```

```
<terminated> Testcal [Java Application] C:\Users\Ad
addition of two numbers =3
subtractionb of two numbvers =8
multiplication of teo numbers =50
division of two numbers2
```

```
    }
}
class Subtraction
{
    int res;
    void sub (int a,int b)
    {
        res=a-b;
        System.out.println("subtractionb of two numbvers =" +res);
    }
}
class Multiplication
{
    int res;
    void mul(int a,int b)
    {
        res=a*b;
        System.out.println("multiplication of teo numbers =" +res);
    }
}
class Division
{
    int res;
    void div(int a,int b)
    {
        res=a/b;
        System.out.println("division of two numbers" +res);
    }
}


public class Testcal {

    public static void main(String[] args)
    {
        calucator c=new calucator();
        c.performAddition(1,2);
        c.performSubtraction(10,2);
        c.performMultiplication(10,5);
        c.performDivision(10,5);


    }

}
```

Week5:control statements

Switch statement

```
1  package kruthi;
2
3  import java.util.Scanner;
4  import java.util.*;
5
6  public class Swotch_arth {
7
8      public static void main(String[] args)
9      {
10         char operator;
11         Double n1,n2,result;
12         Scanner in=new Scanner(System.in);
13         System.out.println("enter the first number: ");
14         n1=in.nextDouble();
15         System.out.println("enter the second number: ");
16         n2=in.nextDouble();
17         System.out.println("choose an operator: +,-,*,/");
18         operator =in.next().charAt(0);
19              switch(operator)
20         {
21             case'+':
22                 result=(n1+n2);
23                 System.out.println("n1"+"+"+"n2"+"="+result);
24                 break;
25             case'-':
26                 result=(n1-n2);
27                 System.out.println("n1"+"-"+"n2"+"="+result);
28                 break;
29             case'*':
30                 result=(n1*n2);
31                 System.out.println("n1"+"*"+"n2"+"="+result);
32                 break;
33             case'/':
34                 result=(n1/n2);
```

```
<terminated> Swotch_arth [Java Applicatic
enter the first number:
5
enter the second number:
10
choose an operator: +,-,*,/
+
n1+n2=15.0
```

```
35                 System.out.println("n1"+"/"+"n2"+"="+result);
36                 break;
37                        default:
38                 System.out.println("invalid operator");
39                 break;
40             }
41      in.close();
42     }
43
44 }
45
```

If-else

```java
package kruthi;

public class Lar_small
{
    public static void main (String []args)
    {
        int a=7,b=5,c=2;
        System.out.print("largest number is:");
        if (a>b && a>c)
            System.out.println(a);
        else if (b>a && b>c)
            System.out.println(b);
        else
            System.out.println(c);
        System.out.print("smallest number is:");
        if (a<b && a<c)
            System.out.println(a);
        else if (b<a && b<c)
            System.out.println(b);
        else
            System.out.println(c);

    }

}
```

```
<terminated> Lar_small [Java Applic
largest number is:7
smallest number is:2
```

For loop

1.fibanacci

```java
package kruthi;

public class fib {

    public static void main(String[] args)
    {
        int a=0;
        int b=1;
        System.out.print(a+b);
        for(int i=3;i<=10;i++)
        {
            int c=a+b;
            System.out.print(+c);
            a=b;
            b=c;
        }


    }

}
```

```
<terminated> fib [Java Application] C:\Users\Ad
112358132134
```

2.factorial

```java
package kruthi;

public class fact {

    public static void main(String[] args)
    {
        int i,fact=1;
        int n=5;
        for(i=1;i<=n;i++)
        {
            fact=fact*i;
        }
        System.out.println( "factorial of" + n+ "is:" +fact);


    }

}
```

```
<terminated> fact [Java Applicatio
factorial of5is:120
```