Assignment-3

1) Perform various expressions in order to understand the pre and post increment operators.

```
class PreAndPost
{
	public static void main(String args[])
	{
		int a=5;
		int b=4;
		int c;
		int d;
		c=b++;
		d=++a;
		int y;
		y=a++ - ++b;

		System.out.println(" a = "+a+" b = "+b+" c = "+c+" d = "+d);
		System.out.println(" y = "+y+" a = "+a+" b = "+b);
		System.out.println(++a);
		System.out.println(b++);
	}
}
```

Output:

```
E:\Assignment-3>javac PreAndPost.java

E:\Assignment-3>java PreAndPost
 a = 7 b = 6 c = 4 d = 6
 y = 0 a = 7 b = 6
8
6
```

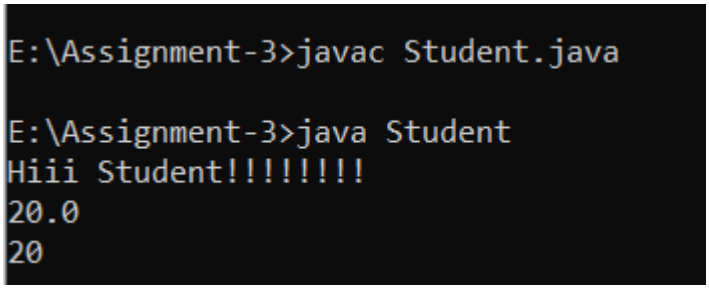
2) Perform upcasting and downcasting with suitable example on primitive datatypes.

```
class Student
{
	public static void main(String args[])
	{
		int i=20;
```

```
        String name;
        float f;
        System.out.println("Hiii Student!!!!!!!!");
        f=i;                                    //Upcasting
        System.out.println(f);


        //downcasting
        float f1=20.00f;
        int rollNo;
        i=(int)f1;
        System.out.println(i);
    }
}
```

Output:

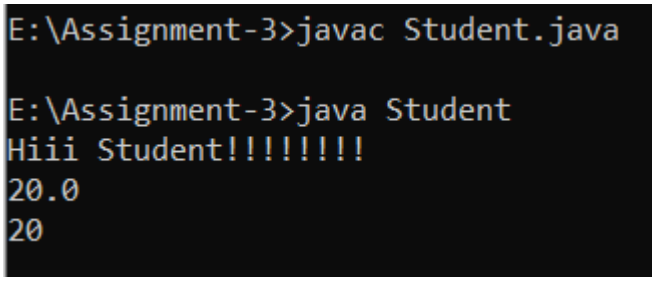


2) Execute an example to understand various Datatypes in Java with their default values

```
class Student
{
    public static void main(String args[])
    {
        int i=20;
        String name;
        float f;
        System.out.println("Hiii Student!!!!!!!!");
        f=i;                                    //Upcasting
        System.out.println(f);
```

```
        //downcasting
        float f1=20.00f;
        int rollNo;
        i=(int)f1;
        System.out.println(i);
    }
}
```

Output:



3) Execute an example to understand various Datatypes in Java with their default values

```
class Datatypes
{
    public static void main(String args[])
    {
        int a=20;
        short s=45;
        byte b=7;
        long l=5243621;
        float f=65.20286f;
        double d=876.765f;
        System.out.println("The Integer value is : "+a);
        System.out.println("The Short value is : "+s);
        System.out.println("The long value is : "+l);
        System.out.println("The float value is : "+f);
```

```
                System.out.println("The double value is : "+d);
        }
}
```

Output:

```
E:\Assignment-3>javac Datatypes.java

E:\Assignment-3>java Datatypes
The Integer value is : 20
The Short value is : 45
The long value is : 5243621
The float value is : 65.20286
The double value is : 876.7650146484375
```

4)Understand an array to display n value.

```
import java.util.Scanner;
class Array
{
        public static void main(String args[])
        {
                int arr[]=new int[10];
                Scanner scan=new Scanner(System.in);
                System.out.println("Enter the number:");

                for(int i=0;i<10;i++)
                {
                        arr[i]=scan.nextInt();
                }
                System.out.println("Value!!!!!!");
                for(int i=0;i<arr.length;i++)
                {
                        System.out.println(arr[i]);
```

```
            }
        }
}
```

Output:

```
E:\Assignment-3>javac Array.java

E:\Assignment-3>java Array
Enter the number:
1
2
3
5
4
6
5
7
4
5
Value!!!!!!
1
2
3
5
4
6
5
7
4
5
```

5) Print different number series

i) Prime number

```
import java.util.Scanner;
class Prime
{
        public static void main(String args[])
        {
                int n,i,res;
                boolean flag=true;
```

```
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the number:");
        n=scan.nextInt();
        for(i=2;i<=n/2;i++)
        {
            res=n%2;
            if(res==0)
            {
                flag=false;
                break;
            }
        }
        if(flag)

            System.out.println("Prime number");
        else

            System.out.println("Not prime number");

    }
}
```

Output:

```
E:\Assignment-3>javac Prime.java

E:\Assignment-3>java Prime
Enter the number:
2
Prime number

E:\Assignment-3>javac Prime.java

E:\Assignment-3>java Prime
Enter the number:
4
Not prime number
```

ii)

```
import java.util.Scanner;
class OddEven
{
	public static void main(String args[])
	{
		int i,n;
		Scanner scan=new Scanner(System.in);
		System.out.println("Enter the number:");
		n=scan.nextInt();
		if(n%2==0)
		{
			System.out.println("Even number");
		}
		else
		{
			System.out.println("Odd number");
		}
	}
```

}

Output:

```
E:\Assignment-3>javac  OddEven.java

E:\Assignment-3>java  OddEven
Enter the number:
2
Even number
```

iii) Fibonacci Series

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597, 2584, 4181.

```
public class Fibonacci
{
	public static void main(String args[])
	{
		int size=20;
		long arr[]=new long[20];

		arr[0]=0;
		arr[1]=1;

		for(int i=2;i<size;i++)
		{
			arr[i]=arr[i-1]+arr[i-2];
		}

		for(int i=0;i<size;i++)
		{
			System.out.print(arr[i]+" ");
		}
```

```
        }
}
```

Output:

```
E:\Assignment-3>javac Fibonacci.java

E:\Assignment-3>java Fibonacci
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181
```

iv) Armstrong Number:

```
import java.util.Scanner;
class Armstrong
{
        public static void main(String args[])
        {
                int n,sum=0,temp,r;
                Scanner scan=new Scanner(System.in);
                System.out.println("Enter the number:");
                n=scan.nextInt();
                temp=n;
                while(temp!=0)
                {
                        r=temp%10;
                        sum=sum+r*r*r;
                        temp=temp/10;
                }
                if(n==sum)
                {
                        System.out.println("Armstrong");
                }
```

```
            else
            {
                System.out.println("Not Armstrong");
            }
        }
}
```

Output: