

Roll No : AD-1224

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Course : B.Sc. Hons Computer Science

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Lab1

```
//Lab Exercise No 1
public class ComplexNum {
    float real,imag;
    //constructors
    ComplexNum(){
        this.real = 0;
        this.imag = 0;
    }
    ComplexNum (float x, float y){
        this.real=x;
        this.imag=y;
    }

    public ComplexNum add( ComplexNum c2){
        ComplexNum c= new ComplexNum();
        c.real = this.real + c2.real;
        c.imag=this.imag+c2.imag;
        return c;
    }
    public ComplexNum mult(ComplexNum c2){
        ComplexNum c= new ComplexNum();
        c.real=(this.real)*(c2.real)-(this.imag)*(c2.imag);
        c.imag=(this.real)*(c2.imag)- (this.imag)*(c2.real);
        return c;
    }
    public void ToString(){
        System.out.print("ComplexNum number is : ");
        System.out.println(this.real + " + " + this.imag + "i");
    }

    public static void main(String[] args){
        ComplexNum c1=new ComplexNum(4,5);
    }
}
```

```

        c1.ToString();
        ComplexNum c2=new ComplexNum(2,3);
        c2.ToString();
        c1=c1.add(c2);
        c1.ToString();
        c1=c1.mult(c2);
        c1.ToString();

    }

}

```

Output

ComplexNum number is : 4.0 + 5.0i

ComplexNum number is : 2.0 + 3.0i

ComplexNum number is : 6.0 + 8.0i

ComplexNum number is : -12.0 + 2.0i

```

// Practise set 1
import java.util.Scanner;

public class ScannerExample {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("Enter your name: ");
        String name = scan.nextLine();

        System.out.println("Enter your gender: ");
        char gender = scan.next().charAt(0);

        System.out.println("Enter your age: ");
        int age = scan.nextInt();

        System.out.println("Enter your mobile no: : ");
        long mobileNo = scan.nextLong();
    }
}

```

```

        System.out.println("Enter your CGPA: ");
        double cgpa = scan.nextDouble();

        System.out.println("Name: "+name+"\nGender:" +gender +
"\nAge: "+age+"\nCGPA: "+cgpa);
    }
}

```

OUTPUT

```

Enter your name:
Jin
Enter your gender:
Male
Enter your age:
19
Enter your mobile no: :
1234567890
Enter your CGPA:
8.7
Name: Jin
Gender:M
Age: 19
CGPA: 8.7

```

```

//Practise Set 2
public class Nth{

    static int[] bubbleSort(int[] arr) {
        int n = arr.length;
        int temp = 0;
        for(int i=0; i < n; i++){
            for(int j=1; j < (n-i); j++){
                if(arr[j-1] > arr[j]){
                    //swap elements
                    temp = arr[j-1];
                    arr[j-1] = arr[j];
                    arr[j] = temp;
                }
            }
        }
        return arr;
    }
}

```

```

public static void main(String [] args){
    // I will use CLA as size of array

    int[] arr={2,3,7,1,86,99,103,5};
    arr=bubbleSort(arr);
    int n=Integer.parseInt(args[0]);
    System.out.println("Nth smallest Element "+arr[n-1]);
    System.out.println("Nth Largest Element "+arr[arr.length -
n]);
    // Here I will print element count from 1 , not 0
}
}

```

OUTPUT

PS D:\ANDC\Sem-2\Java\Lab1> javac Nth.java
PS D:\ANDC\Sem-2\Java\Lab1> java Nth 2
Nth smallest Element 2
Nth Largest Element 99

```

// Practise Set 3
public class SumAtOdd {
    public static void main(String [] args){
        int[] arr={2,3,7,1,86,99,103,5};
        int sum=0;
        for (int a=0;a<arr.length;a++){
            if ((a%2)==0){
                if (arr[a]%2!=0){
                    sum+=arr[a];
                }
            }
        }
        System.out.println("Sum of all odd numbers at even index is
"+sum);
    }
}

```

OUTPUT

PS D:\ANDC\Sem-2\Java\Lab1> java SumAtOdd
Sum of all odd numbers at even index is 110