Q1) (15m)

Code a method that takes an array of integers as input and returns an array of integers as output. The value of cell *i* in the returned array is the sum of cell *i* and all the previous even numbers if cell *i* is even and is the sum of cell *i* and all the previous odd cells if cell *i* is odd.

Example

input: [1,2,3,4,5,6,7,8,9]

output: [1,2,4,6,9,12,16,20,25]

Note: no side effect should occur on the input array.

```
public class Test {
    public static void main(String[] args) {
        int[] arr = {1,3,10,24,21,7,12,9,8,22};
        int[] result = sumElement(arr);
        for (int i=0;i<result.length;i++){
            System.out.println(result[i]);
        }
    }

    public static int[] sumElement (int[]arr){
        int[] newArr = new int[arr.length];
        int sumOdd = 0;
        int sumEven = 0;
            for (int i=0; i<arr.length; i++){
                if (arr[i]%2==0){
                    sumEven+=arr[i];
                    newArr[i]=sumEven;
                }
                else{
                    sumOdd+=arr[i];
                    newArr[i]=sumOdd;
                }
            }
        return newArr;
    }
}

output: 1,4,10,34,25,32,46,41,54,76

When int[] arr = {1,3,10,24,21,7,12,9,8,22};
output: 1,2,4,6,9,12,16,20,25
```

Q2) (15m)

Code a method called diffArList that:

- Takes two array lists of Strings arL1 & arL2 as input
- Returns a new array list contains all the values of arL1 that cannot be found in arL2.

Notes

- you must not use any of these built-in methods: contains, lastIndexOf , indexOf.
- Your code should be efficient (i.e. exist loop if it meets a condition) and should use the appropriate loop pattern

```
public class Test {
    public static void main(String[] args) {
        String[] arL1 ={"Olivia","FIT","1051","week8","rabbit","giraffe"};
        String[] arL2={"Olivia","hello
world","week8","dog","cat","giraffe","abc","efgh"};
        String[]result=diffArList(arL1,arL2);
        for (int i=0;i<result.length;i++){
            System.out.println(result[i]);
        }
    }

    public static String[] diffArList (String[]arL1,String[]arL2){
        int count=0;
        for (int i=0; i<arL1.length; i++) {
            boolean condition=true;
            for (String element2 : arL2) {
                if (arL1[i].equals(element2)) {
                    condition=false;
                }
            }
            if (condition) {
                count++;
            }
        }
        String[]arr=new String[count];
        int index=0;
        for (int j=0; j< arL1.length; j++){
            boolean condition=true;
            for (String element2: arL2) {
                if (arL1[j].equals(element2)) {
                    condition = false;
                }
            }
            if (condition){
                arr[index]=arL1[j];
                index++;
            }
        }
        return arr;
    }
}

output: FIT, 1051, rabbit
```

```java
import java.util.ArrayList;
import java.util.Arrays;

public class Test {
    public static void main(String[] args) {
        ArrayList<String>arL1=new
ArrayList<>(Arrays.asList("Olivia","FIT","1051","week8","rabbit","giraffe")
);
        ArrayList<String>arL2=new ArrayList<>(Arrays.asList("Olivia","hello
world","week8","dog","cat","giraffe","abc","efgh"));
        ArrayList<String> result=diffArList(arL1,arL2);
        for (String element: result){
            System.out.println(element);
        }
    }



    public static ArrayList<String>
diffArList(ArrayList<String>arL1,ArrayList<String>arL2){
        ArrayList<String>result=new ArrayList<>();
        for (int i=0; i<arL1.size();i++){
            boolean isFound=false;
            int j=0;
            while (j<arL2.size()&&!isFound){
                if (arL1.get(i).equals(arL2.get(j))){
                    isFound=true;
                }
                j++;
            }
            if (!isFound){
                result.add(arL1.get(i));
            }
        }
        return result;
    }
}
```

output: FIT, 1051, rabbit