18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Arrays And String

Problem 1:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_1 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Number of elements in the array??");
		int n = sc.nextInt();
		System.out.println("Elements of array??");
		int arr[] = new int[n];
		for(int i=0;i<n;i++) {
			arr[i] = sc.nextInt();
		}
		int count=0,maxCount=0;
		for(int i=0;i<n;i++) {
			if(arr[i] == 1) {
				count++;
				if(count>maxCount) {
					maxCount = count;
				}
			}
			else count=0;
		}
		System.out.print("Maximun no. of consecutive 1's :
"+maxCount);
	}
}
```

OutPut 1:-

```
Number of elements in the array??
10
Elements of array??
1 1 1 0 1 1 1 1 0 1
Maximun no. of consecutive 1's : 4
```

OutPut 2:-

```
Number of elements in the array??
7
Elements of array??
1 1 1 0 1 1 1
Maximun no. of consecutive 1's : 3
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 2:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_2 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Number of elements in the array??");
		int n = sc.nextInt();
		System.out.println("Elements of array??");
		int arr[] = new int[n];
		for(int i=0;i<n;i++) {
			arr[i] = sc.nextInt();
		}
		int ans=0;
		for(int i=0;i<n;i++) {
			int x = count(arr[i]);
			if(x%2==0) {
				ans++;
			}
		}
		System.out.print("Answer : "+ans);
	}
	private static int count(int n) {
		int count=0;
		while(n>0) {
			count++;
			n= n/10;
		}
		return count;
	}
}
```

OutPut 1:-

```
Number of elements in the array??
5
Elements of array??
12 345 2 6 7896
Answer : 2
```

OutPut 2:-

```
Number of elements in the array??
10
Elements of array??
1 12 234 4321 4 456 32 87 567 456789
Answer : 5
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 3:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_3 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Number of elements in the array??");
		int n = sc.nextInt();
		System.out.println("Elements of array??");
		int arr[] = new int[n];
		for(int i=0;i<n;i++) {
			arr[i] = sc.nextInt();
		}
		int ans=-1;
		for(int i=0;i<n;i++) {
			ans = arr[i]*arr[i];
			arr[i]=ans;
		}
		Arrays.sort(arr);
		System.out.print("Answer : ");
		for(int i=0;i<n;i++) {
			System.out.print(arr[i]+" ");
		}
	}

}
```

OutPut 1:-

```
Number of elements in the array??
5
Elements of array??
-4 -1 0 3 10
Answer : 0 1 9 16 100
```

OutPut 2:-

```
Number of elements in the array??
5
Elements of array??
-7 -3 2 3 11
Answer : 4 9 9 49 121
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 4:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_4 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Number of elements in the array??");
		int n = sc.nextInt();
		System.out.println("Elements of array??");
		int arr[] = new int[n];
		for(int i=0;i<n;i++) {
			arr[i] = sc.nextInt();
		}
		System.out.println("Target ??");
		int target = sc.nextInt();
		HashMap<Integer,Integer> map = new HashMap<>();
		for(int i=0;i<n;i++) {
			map.put(arr[i],i);
		}
		int ans=0;
		boolean flag = false;
		for(int i=0;i<n;i++) {
			ans = target - arr[i];
			if((map.containsKey(ans)) && (map.get(ans)!=i)) {
				flag = true;
				System.out.println("Sum found , indices are :
"+i+" "+map.get(ans));
				break;
			}
		}
		if(flag == false) {
			System.out.println("Sum not found ");
		}
	}
}
```

OutPut:-

```
Number of elements in the array??
6
Elements of array??
2 7 11 15 37 96
Target ??
48
Sum found , indices are : 2 4
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 5:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_5 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Number of elements in the array??");
		int n = sc.nextInt();
		System.out.println("Elements of array??");
		ArrayList<Integer> list =new ArrayList<>();
		ArrayList<Integer> list1 =new ArrayList<>();
		int x=0;
		for(int i=0;i<n;i++) {
			x= sc.nextInt();
			list.add(x);
		 }
		boolean flag = false;
		for(int i=0;i<n;i++) {
			int ans = count(list.get(i));
			if(list.contains(ans)) {
				flag = true;
				list1.add(list.get(i));}
		}
		if(flag == true) {
		Collections.sort(list1);
		System.out.println("Answer : "+list1);
		}
		else System.out.println("Answer : "+-1);
	}
	private static int count(int n) {
		int sum=n;
		for(int i=1;i<=(n/2);i++) {
			if(n%i==0) {
				sum+=i;
			}
		}
		return sum;
	}
}
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

OutPut 1 :-

```
Number of elements in the array??
4
Elements of array??
1 2 4 7
Answer : [1, 4]
```

OutPut 2 :-

```
Number of elements in the array??
4
Elements of array??
4 5 2 8
Answer : -1
```

OutPut 3 :-

```
Number of elements in the array??
2
Elements of array??
12 54 67 7
Answer : -1
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 6:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_6 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Enter the String of numbers :");
		String str = sc.next();
		int n = Integer.parseInt(str);
		ArrayList<Integer> list = new ArrayList<>();
		ArrayList<Integer> listf = new ArrayList<>();
		int rem=0,num=n;
		while(n>0) {
			rem = n%10;
			list.add(rem);
			n = n/10;
		}
		int val=0;
		String ans="";
		boolean flag = false;
		for(int i=0;i<str.length();i++) {
			if(list.contains(list.get(i)+1)) {
				val = (list.get(i))*(list.get(i)+1);
				ans = String.valueOf(val);
				if(str.contains(ans)) {
					listf.add(val);
					flag = true;
				}
			}
		}
		if(flag == true) System.out.print("Final list : "+listf);
		else System.out.print(-1);
	}
}
```

OutPut 1 :-

```
Enter the String of numbers :123456
Final list : [12, 6, 2]
```

OutPut 2 :-

```
Enter the String of numbers :4567
Answer :-1
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 7:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_7 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Enter the String :");
		String str = sc.next();
		int even=0,odd=0,minEven=Integer.MAX_VALUE;
		HashSet<Integer> set = new HashSet<>();
		for(int i=0;i<str.length();i++) {
			if(Character.isDigit(str.charAt(i))) {

	set.add(Character.getNumericValue(str.charAt(i)));

	if((Character.getNumericValue(str.charAt(i)))%2==0){
				even++;

	if(minEven>Character.getNumericValue(str.charAt(i))) {
					minEven =
Character.getNumericValue(str.charAt(i));
				}
			}
		}
		set.remove(minEven);
		ArrayList<Integer> list = new ArrayList<>(set);
		Collections.sort(list,Collections.reverseOrder());
		String ans="";
		for(Integer i : list)
			ans += String.valueOf(i);
		ans += String.valueOf(minEven);
		System.out.print(ans);
	}
}
```

OutPut 1 :-

```
Enter the String : &7(9#8^^2#4%3%1
9874312
```

OutPut 2 :-

```
Enter the String : 7@&^3##1$8
7318
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 8:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_8 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Enter the String :");
		String str1 = sc.next();
		String p1[] = str1.split(",");
		int sum,val;
		System.out.println("Answer : ");
		for(int i=0;i<p1.length;i++) {
			sum=0;
			String p2[] = p1[i].split(":");
			for(int j=0;j<p1[1].length();j++) {
				val = Character.getNumericValue(p1[1].charAt(j));
				sum += val*val;
			}
			if(sum%2==0) {
				System.out.println(RightRotate(p2[0]));
			}
			else {
				System.out.println(leftRotate(p2[0]));
			}
		}
	}
	private static String leftRotate(String str) {
		String result = str.substring(2) + str.subSequence(0, 2);
		return result;
	}
	private static String RightRotate(String str) {
		String result = str.substring(str.length()-1) +
str.subSequence(0,str.length()-1);
		return result;
	}
}
```

OutPut 1 :-

```
Enter the String :
abcde:234,pqrs:246
Answer :
cdeab
rspq
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 9:

```
import java.util.*;

public class Problem_9 {

	static Scanner sc = new Scanner(System.in);

	public static void main(String[] args) {

		System.out.println("Enter the String : ");
		String str = sc.next();
		String newStr = str.toUpperCase();
		ArrayList<Character> list = new ArrayList<>();
		for(int i=0;i<newStr.length();i++) {
			if(!list.contains(newStr.charAt(i))) {
				list.add(newStr.charAt(i));
			}
		}
		Collections.sort(list);

		ArrayList<String> listf = new ArrayList<>();
		String strx="";
		for(int j=0;j<list.size();j++) {
			strx="";
			for( int i=0;i<str.length();i++) {
				char ch = Character.toUpperCase(str.charAt(i));
				if(list.get(j)==ch){
					strx += str.charAt(i);
				}
			}
			listf.add(strx);
		}
		//System.out.println(listf);
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

```
            String finalstr="";
            while(finalstr.length()<str.length()) {
                  if(listf.size()!=0) {
                        finalstr+=listf.get(0);
                        listf.remove(listf.get(0));
                  }
                  if(listf.size()!=0) {
                        finalstr +=listf.get(listf.size()-1);
                        listf.remove(listf.get(listf.size()-1));
                  }
                  if(listf.size()==0) break;
            }
            System.out.println(finalstr);
      }
}
```

OutPut 1 :-

Enter the String :
HelLoWOrld
dWerHoOlLl

OutPut 2 :-

Enter the String :
AmULyacHaNdHAna
AaaAaycUdNnHHmL

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 10:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_10 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.print("No. of elements in the array :");
		int n= sc.nextInt();
		System.out.print("Elements of the array :");
		int arr[] = new int[n];
		for(int i=0;i<n;i++) {
			arr[i] = sc.nextInt();
		}
		System.out.print("value of k :");
		int k = sc.nextInt();
		Arrays.sort(arr);
		int count = Combination(arr,n,k);
		System.out.print("Total count : "+ count);

	}
	private static int Combination(int[] arr, int n,int k) {
		int count =0;
		int f=0,l=0;
		for(int i=0;i<n-3;i++) {
			for(int j=i+1;j<n-2;j++) {
				f = j+1;
				l = n-1;
				while(f<l) {
					int ans =arr[i]+arr[j]+arr[f]+arr[l];
					if(ans==k) {
						count++;
						f++;
						l--;
					}
					else if(ans<k) f++;
					else l--;
				}
			}
		}
		return count;
	}
}
```

OutPut 1 :-

```
No. of elements in the array :6
Elements of the array : -1 1 0 0 2 -2
value of k :0
Total count : 3
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 11:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_11 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.println("Enter the string :");
		String str = sc.next();
		int val = Integer.parseInt(str);

		while(!isPalindrome(val)) {
			val = val+reverse(val);
		}
		int ans = count(val);
		System.out.println("Answer : "+ans);

	}
	private static boolean isPalindrome(int n) {
		int num=n,rev=0;
		while(n>0) {
			rev = rev*10 + n%10;
			n = n/10;
		}
		if(rev==num) return true;
		else return false;
	}
	private static int reverse(int n) {
		int rev=0;
		while(n>0) {
			rev = rev*10 + n%10;
			n = n/10;
		}
		return rev;
	}
	private static int count(int n) {
		int count=0;
		while(n>0) {
			count++;
			n=n/10;
		}
		return count;
	}
}
```

OutPut 1 :-

```
Enter the string :156
Answer : 4
```

18wh1a05a3 – Amulya Chandhana
Date : 07/05/2021

Problem 12:

```
package ArraysAndStrings;
import java.util.*;
public class Problem_12 {
	static Scanner sc = new Scanner(System.in);
	public static void main(String[] args) {
		System.out.print("Enter the string :");
		String str = sc.next();
		String ans="";
		int value=0;
		int arr[] = new int[str.length()];
		for(int i=1;i<str.length();i=i+2) {
			char ch = str.charAt(i);
			value = Character.getNumericValue(ch);
			value *=value;
			ans += String.valueOf(value);
		}
		System.out.print("Answer : ");
		for(int i=0;i<4;i++) {
			char ch = ans.charAt(i);
			System.out.print(ch);
		}
	}
}
```

OutPut 1 :-

Enter the string :8765
Answer : 4925

OutPut 2 :-

Enter the string :34567
Answer : 1636