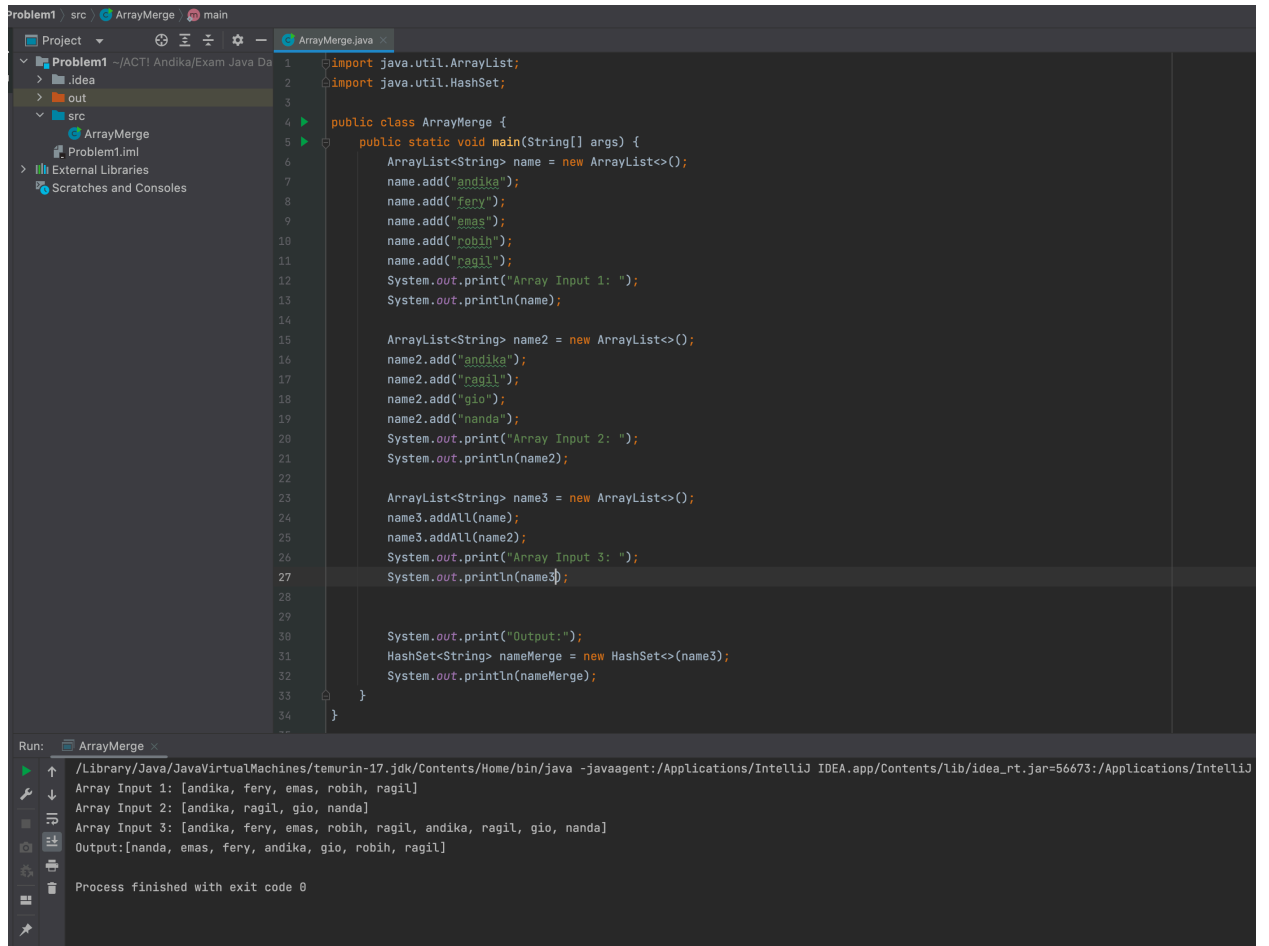


# Iterable & Map

## 1. Problem 1



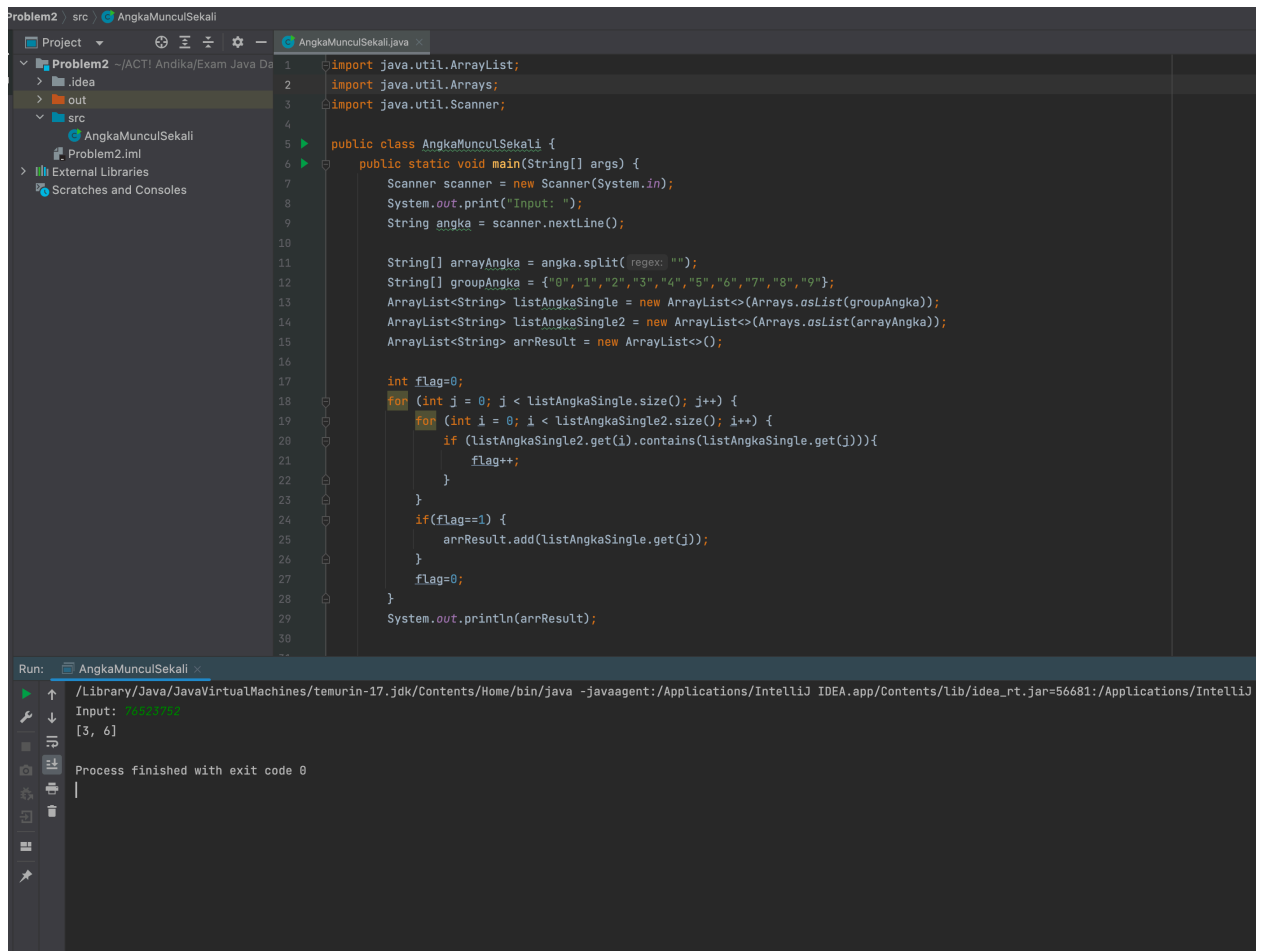
The screenshot displays an IDE with a project named "Problem1". The source code for "ArrayMerge.java" is shown, which implements a method to merge two arrays into a HashSet. The code includes imports for ArrayList and HashSet, and a main method that initializes two ArrayLists, adds elements, prints them, and then merges them into a HashSet.

```
1 import java.util.ArrayList;
2 import java.util.HashSet;
3
4 public class ArrayMerge {
5     public static void main(String[] args) {
6         ArrayList<String> name = new ArrayList<>();
7         name.add("andika");
8         name.add("fery");
9         name.add("emas");
10        name.add("robih");
11        name.add("ragil");
12        System.out.print("Array Input 1: ");
13        System.out.println(name);
14
15        ArrayList<String> name2 = new ArrayList<>();
16        name2.add("andika");
17        name2.add("ragil");
18        name2.add("gio");
19        name2.add("nanda");
20        System.out.print("Array Input 2: ");
21        System.out.println(name2);
22
23        ArrayList<String> name3 = new ArrayList<>();
24        name3.addAll(name);
25        name3.addAll(name2);
26        System.out.print("Array Input 3: ");
27        System.out.println(name3);
28
29
30        System.out.print("Output:");
31        HashSet<String> nameMerge = new HashSet<>(name3);
32        System.out.println(nameMerge);
33    }
34 }
```

The Run console shows the following output:

```
Run: ArrayMerge
/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=56673:/Applications/IntelliJ
Array Input 1: [andika, fery, emas, robih, ragil]
Array Input 2: [andika, ragil, gio, nanda]
Array Input 3: [andika, fery, emas, robih, ragil, andika, ragil, gio, nanda]
Output:[nanda, emas, fery, andika, gio, robih, ragil]
Process finished with exit code 0
```

## 2. Problem 2

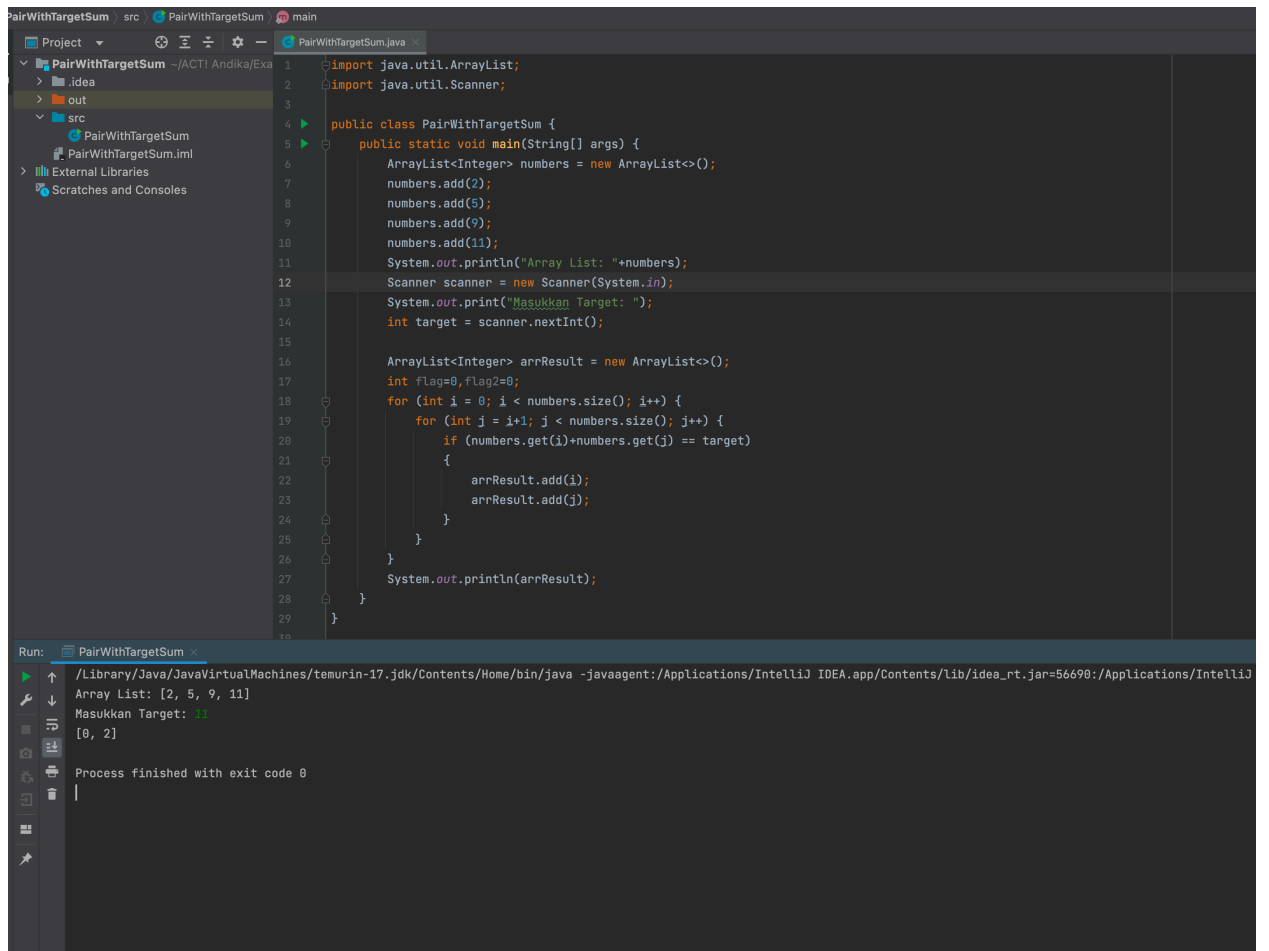


The screenshot shows an IDE with a project named "Problem2". The source file "AngkaMunculSekali.java" is open, displaying the following code:

```
1 import java.util.ArrayList;
2 import java.util.Arrays;
3 import java.util.Scanner;
4
5 public class AngkaMunculSekali {
6     public static void main(String[] args) {
7         Scanner scanner = new Scanner(System.in);
8         System.out.print("Input: ");
9         String angka = scanner.nextLine();
10
11         String[] arrayAngka = angka.split(" ");
12         String[] groupAngka = {"0", "1", "2", "3", "4", "5", "6", "7", "8", "9"};
13         ArrayList<String> listAngkaSingle = new ArrayList<>(Arrays.asList(groupAngka));
14         ArrayList<String> listAngkaSingle2 = new ArrayList<>(Arrays.asList(arrayAngka));
15         ArrayList<String> arrResult = new ArrayList<>();
16
17         int flag=0;
18         for (int j = 0; j < listAngkaSingle.size(); j++) {
19             for (int i = 0; i < listAngkaSingle2.size(); i++) {
20                 if (listAngkaSingle2.get(i).contains(listAngkaSingle.get(j))) {
21                     flag++;
22                 }
23             }
24             if(flag==1) {
25                 arrResult.add(listAngkaSingle.get(j));
26             }
27             flag=0;
28         }
29         System.out.println(arrResult);
30     }
31 }
```

The Run window shows the execution of the program. The input is "3521752", and the output is "[3, 6]". The process finished with exit code 0.

### 3. Problem 3



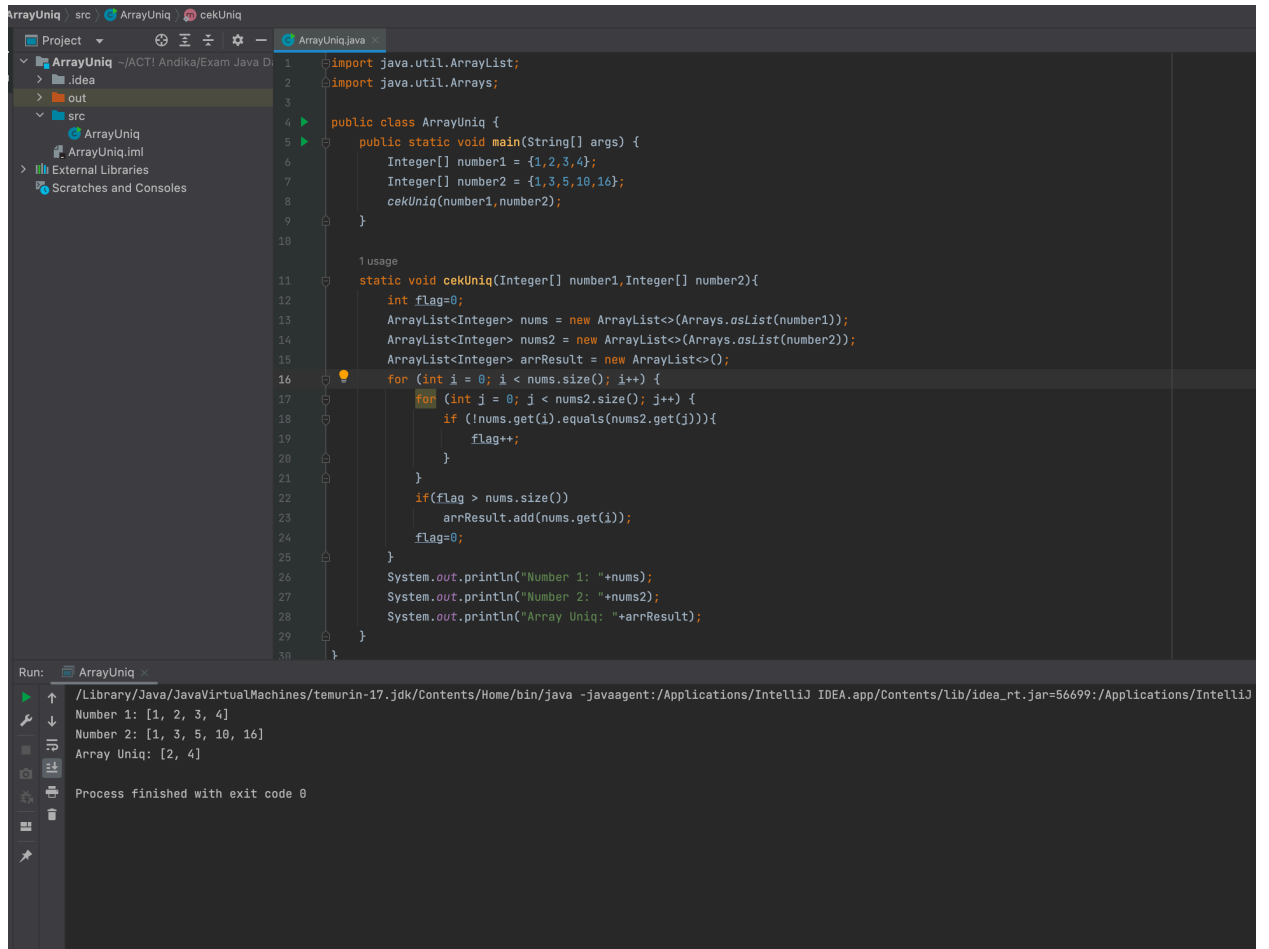
The screenshot displays an IDE with a Java project named 'PairWithTargetSum'. The source code in 'PairWithTargetSum.java' defines a class with a 'main' method. The method initializes an ArrayList with values [2, 5, 9, 11], prompts the user for a target value (which is 13), and then uses a nested loop to find pairs of numbers that sum to the target. The output console shows the array list, the target input, and the resulting pair [0, 2].

```
1 import java.util.ArrayList;
2 import java.util.Scanner;
3
4 public class PairWithTargetSum {
5     public static void main(String[] args) {
6         ArrayList<Integer> numbers = new ArrayList<>();
7         numbers.add(2);
8         numbers.add(5);
9         numbers.add(9);
10        numbers.add(11);
11        System.out.println("Array List: "+numbers);
12        Scanner scanner = new Scanner(System.in);
13        System.out.print("Masukkan Target: ");
14        int target = scanner.nextInt();
15
16        ArrayList<Integer> arrResult = new ArrayList<>();
17        int flag=0, flag2=0;
18        for (int i = 0; i < numbers.size(); i++) {
19            for (int j = i+1; j < numbers.size(); j++) {
20                if (numbers.get(i)+numbers.get(j) == target)
21                {
22                    arrResult.add(i);
23                    arrResult.add(j);
24                }
25            }
26        }
27        System.out.println(arrResult);
28    }
29 }
```

Run: PairWithTargetSum x

```
/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=56690:/Applications/IntelliJ
Array List: [2, 5, 9, 11]
Masukkan Target: 13
[0, 2]
Process finished with exit code 0
```

#### 4. Problem 4



```
ArrayUniq  src  ArrayUniq  cekUniq
Project  ArrayUniq  ArrayUniq.java
1  import java.util.ArrayList;
2  import java.util.Arrays;
3
4  public class ArrayUniq {
5      public static void main(String[] args) {
6          Integer[] number1 = {1,2,3,4};
7          Integer[] number2 = {1,3,5,10,16};
8          cekUniq(number1,number2);
9      }
10
11      1 usage
12      static void cekUniq(Integer[] number1,Integer[] number2){
13          int flag=0;
14          ArrayList<Integer> nums = new ArrayList<>(Arrays.asList(number1));
15          ArrayList<Integer> nums2 = new ArrayList<>(Arrays.asList(number2));
16          ArrayList<Integer> arrResult = new ArrayList<>();
17          for (int i = 0; i < nums.size(); i++) {
18              for (int j = 0; j < nums2.size(); j++) {
19                  if (!nums.get(i).equals(nums2.get(j))) {
20                      flag++;
21                  }
22              }
23              if(flag > nums.size())
24                  arrResult.add(nums.get(i));
25              flag=0;
26          }
27          System.out.println("Number 1: "+nums);
28          System.out.println("Number 2: "+nums2);
29          System.out.println("Array Uniq: "+arrResult);
30      }
31  }
```

Run: ArrayUniq x

/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea\_rt.jar=56699:/Applications/IntelliJ

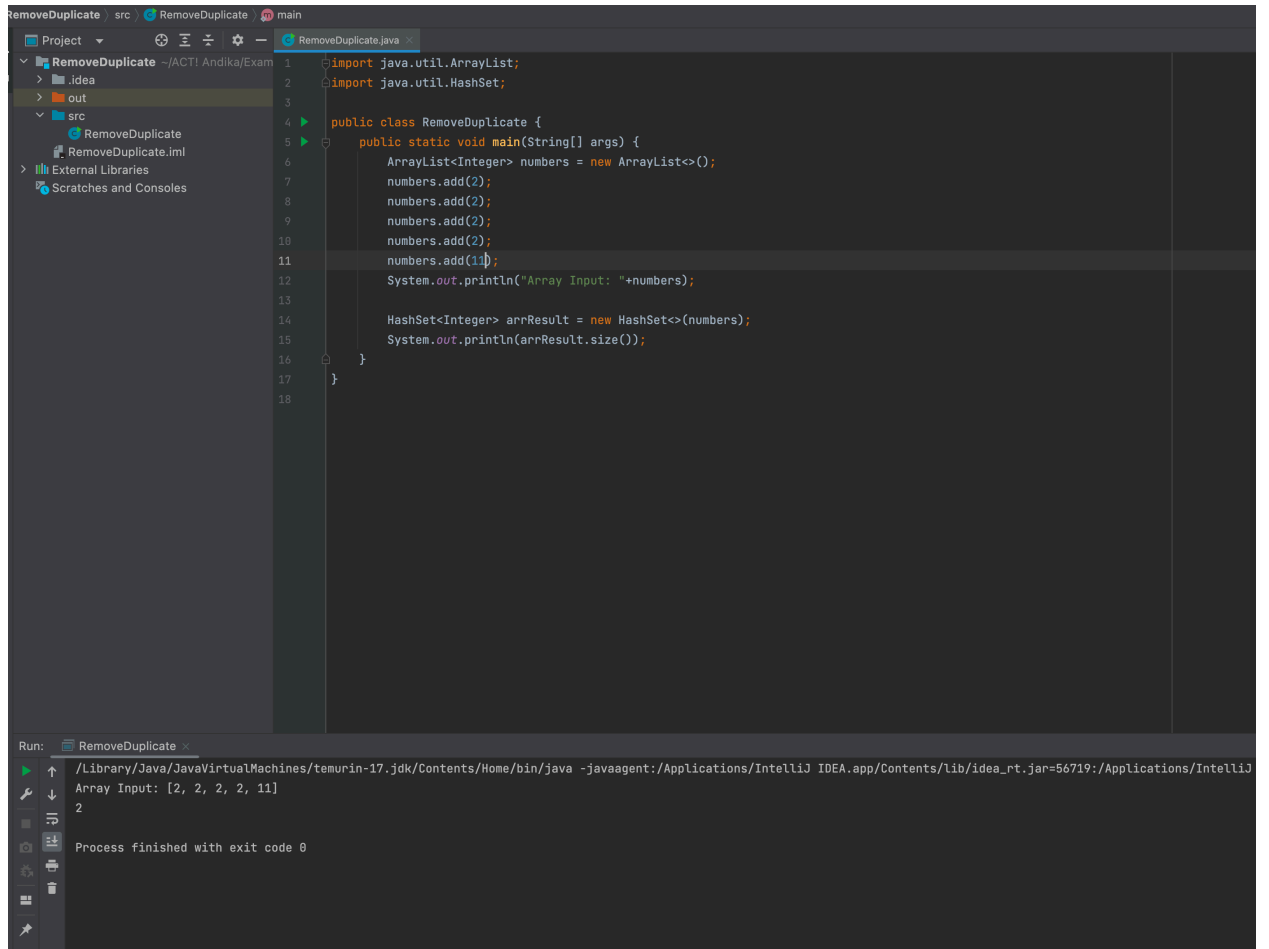
Number 1: [1, 2, 3, 4]

Number 2: [1, 3, 5, 10, 16]

Array Uniq: [2, 4]

Process finished with exit code 0

## 5. Problem 5



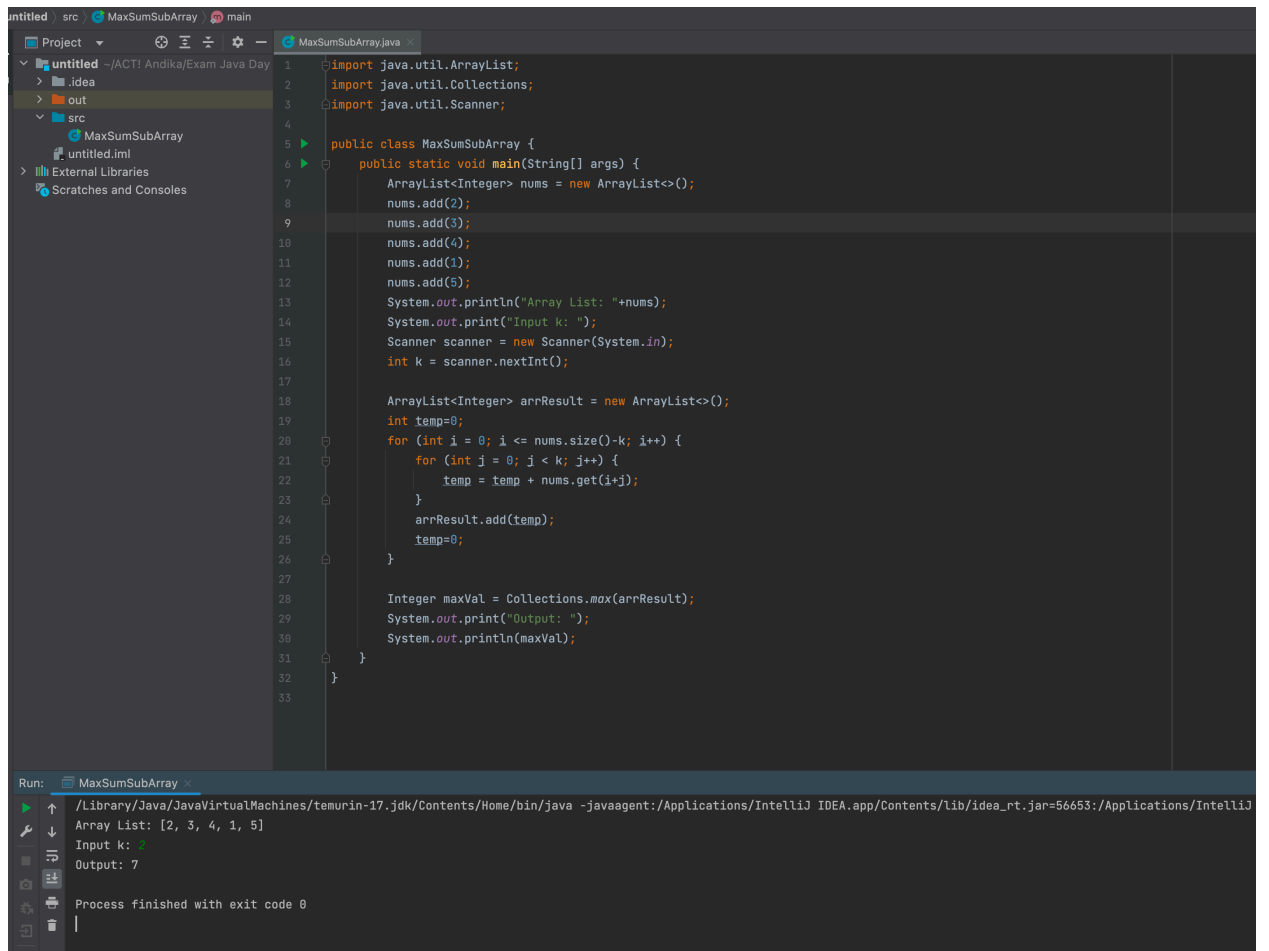
The screenshot shows an IDE with a project named "RemoveDuplicate". The source file "RemoveDuplicate.java" is open, displaying the following code:

```
1 import java.util.ArrayList;
2 import java.util.HashSet;
3
4 public class RemoveDuplicate {
5     public static void main(String[] args) {
6         ArrayList<Integer> numbers = new ArrayList<>();
7         numbers.add(2);
8         numbers.add(2);
9         numbers.add(2);
10        numbers.add(2);
11        numbers.add(11);
12        System.out.println("Array Input: "+numbers);
13
14        HashSet<Integer> arrResult = new HashSet<>(numbers);
15        System.out.println(arrResult.size());
16    }
17 }
18
```

The Run window at the bottom shows the execution output:

```
Run: RemoveDuplicate
/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=56719:/Applications/IntelliJ
Array Input: [2, 2, 2, 2, 11]
2
Process finished with exit code 0
```

## 6. Problem 6



The screenshot displays an IDE with a project named 'untitled' and a source file 'MaxSumSubArray.java'. The code implements a static method 'main' that takes a string array 'args' as input. It initializes an 'ArrayList<Integer>' named 'nums' and adds the values 2, 3, 4, 1, and 5. A 'Scanner' is used to read an integer 'k' from the user. A nested loop calculates the sum of elements from index 'i' to 'i+k-1' for each 'i' from 0 to 'nums.size()-k'. The maximum of these sums is stored in 'maxVal' and printed. The console output shows the array list, the input 'k', and the final output '7'.

```
1 import java.util.ArrayList;
2 import java.util.Collections;
3 import java.util.Scanner;
4
5 public class MaxSumSubArray {
6     public static void main(String[] args) {
7         ArrayList<Integer> nums = new ArrayList<>();
8         nums.add(2);
9         nums.add(3);
10        nums.add(4);
11        nums.add(1);
12        nums.add(5);
13        System.out.println("Array List: "+nums);
14        System.out.print("Input k: ");
15        Scanner scanner = new Scanner(System.in);
16        int k = scanner.nextInt();
17
18        ArrayList<Integer> arrResult = new ArrayList<>();
19        int temp=0;
20        for (int i = 0; i <= nums.size()-k; i++) {
21            for (int j = 0; j < k; j++) {
22                temp = temp + nums.get(i+j);
23            }
24            arrResult.add(temp);
25            temp=0;
26        }
27
28        Integer maxVal = Collections.max(arrResult);
29        System.out.print("Output: ");
30        System.out.println(maxVal);
31    }
32 }
33
```

Run: MaxSumSubArray

/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea\_rt.jar=56653:/Applications/IntelliJ

Array List: [2, 3, 4, 1, 5]

Input k: 3

Output: 7

Process finished with exit code 0