Week 5 sample program

1.Given an array A of positive integers, let s be the sum of the digits of minimal elements of A, return 0 if s is odd otherwise return 1.

Program:

```
import java.util.Scanner;
public class MinElementDigitSum {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.print("Enter the number of elements in the array: ");
      int size = scanner.nextInt();
      if (size <= 0) {
         System.out.println("Array size must be greater than zero.");
         return;
      }
      int[] array = new int[size];
      System.out.println("Enter the elements of the array:");
      for (int i = 0; i < size; i++) {
         array[i] = scanner.nextInt();
      }
      int minElement = array[0];
      for (int i = 1; i < size; i++) {
         if (array[i] < minElement) {
            minElement = array[i];
         }
      }
      int sumOfDigits = 0;
      int number = minElement;
      while (number > 0) {
         sumOfDigits += number % 10;
         number /= 10;
      }
```

```
        System.out.println(sumOfDigits % 2 == 0 ? 1 : 0);
    }
}
```

Output:

```
Enter the number of elements in the array: 8
Enter the elements of the array:
34
23
1
24
75
33
54
8
0
```

```
Enter the number of elements in the array: 5
Enter the elements of the array:
99
77
33
66
55
1
```

2. Program:

```
import java.util.Scanner;
public class DigitSumCalculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter the number of elements in the array:");
        int n = scanner.nextInt();
        int[] input = new int[n];
        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < n; i++) {
            input[i] = scanner.nextInt();
        }
```

```
        int finalSum = calculateFinalSum(input);

        System.out.println("Final result = " + finalSum);
    }
    public static int calculateFinalSum(int[] input) {
        int finalSum = 0;
        for (int i = 0; i < input.length; i++) {
            int currentNumber = input[i];
            int digitPosition = i + 1;
            int digit = getDigitAtPosition(currentNumber, digitPosition);
            finalSum += digit * digit;
        }
        return finalSum;
    }
    public static int getDigitAtPosition(int number, int position) {
        String numberStr = Integer.toString(number);
        int length = numberStr.length();
        if (length < position) {
            return 0;
        }
        char digitChar = numberStr.charAt(length - position);
        return Character.getNumericValue(digitChar);
    }
}
```

Output:

```
Enter the number of elements in the array:
5
Enter the elements of the array:
1
5
423
310
61540
Final result = 53
```

3. Program:

```
import java.util.Arrays;
import java.util.Scanner;
public class SegmentSorter {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.println("Enter the values of N and K:");
      int N = scanner.nextInt();
      int K = scanner.nextInt();
      System.out.println("Enter the " + N + " elements:");
      int[] arr = new int[N];
      for (int i = 0; i < N; i++) {
         arr[i] = scanner.nextInt();
      }
      for (int i = 0; i < N; i += K) {
         int end = Math.min(i + K, N);
         Arrays.sort(arr, i, end);
         reverse(arr, i, end - 1);
      }
      for (int num : arr) {
         System.out.print(num + " ");
      }
   }
   public static void reverse(int[] arr, int start, int end) {
      while (start < end) {
         int temp = arr[start];
         arr[start] = arr[end];
         arr[end] = temp;
         start++;
         end--;
      }
   }
```

```
}
```

Output:

```
Enter the values of N and K:
7 3
Enter the 7 elements:
48
541
23
68
13
41
6
541 48 23 68 41 13 6
```