1. Given an array . Create two arrays one for Odd Elements and other for Even Elements.

```java
import java.util.Scanner;

public class OddEvenArrays {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);

      System.out.print("Enter the number of elements: ");
      int size = scanner.nextInt();

      int[] inputArray = new int[size];

      System.out.println("Enter the elements:");

      for (int i = 0; i < size; i++) {
         System.out.print("Element " + (i + 1) + ": ");
         inputArray[i] = scanner.nextInt();
      }
      int evenCount = 0, oddCount = 0;
      for (int num : inputArray) {
         if (num % 2 == 0) {
            evenCount++;
         } else {
            oddCount++;
         }
      }

      int[] evenArray = new int[evenCount];
      int[] oddArray = new int[oddCount];

      int evenIndex = 0, oddIndex = 0;
      for (int num : inputArray) {
         if (num % 2 == 0) {
            evenArray[evenIndex++] = num;
         } else {
            oddArray[oddIndex++] = num;
         }
      }


      System.out.print("Even Array: ");
      for (int num : evenArray) {
         System.out.print(num + ",");
      } System.out.print("Odd Array: ");
      for (int num : oddArray) {
         System.out.print(num + ",");
      }
   }
}
```

2.Compression of String Input: AAABBC Output: A3B2C

```java
import java.util.Scanner;
public class StringCompression {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String userInput = scanner.nextLine();
        System.out.println("Input: " + userInput);
        System.out.println("Output: " + compressString(userInput));
        scanner.close();
    }   private static String compressString(String input) {
        StringBuilder compressed = new StringBuilder();
        int count = 1;
        for (int i = 0; i < input.length(); i++) {
            if (i < input.length() - 1 && input.charAt(i) == input.charAt(i + 1)) {
                count++;
            } else {
                compressed.append(input.charAt(i));
                if (count > 1) {
                    compressed.append(count);
                }   count = 1;
            } return compressed.toString();
        }
    }
}
```

3.Input : zohocorporationteam Output : z o h o c o r p o r a t i o n t e a m.

PROGRAM CODE:

```java
public class Demo {
   public static void main(String[] args) {
      String input = "zohocorporationteam";
      printZigZagPattern(input);
   }

   private static void printZigZagPattern(String input) {
      int n = input.length();
      int numRows = 7;

      char[][] matrix = new char[numRows][n];
      int row = 0, col = 0;
      boolean goingDown = false;

      for (char c : input.toCharArray()) {
         matrix[row][col] = c;

         if (row == 0 || row == numRows - 1) {
            goingDown = !goingDown;
         }

         row += goingDown ? 1 : -1;
         col++;
      }

      for (int i = 0; i < numRows; i++) {
         for (int j = 0; j < n; j++) {
            char currentChar = (matrix[i][j] == '\u0000') ? ' ' : matrix[i][j];
            System.out.print(currentChar + " ");
         }
         System.out.println();
      }
   }
}
```