1. **Reverse a word using loop:**

java

Copy code

```
import java.util.Scanner;

public class ReverseWord {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.print("String: ");
      String str = scanner.nextLine();
      String reversedStr = "";
      for (int i = str.length() - 1; i >= 0; i--) {
         reversedStr += str.charAt(i);
      }
      System.out.println("Reverse String: " + reversedStr);
   }
}
```

2. **Convert the given string to integer:**

java

Copy code

```
import java.util.Scanner;

public class StringToInt {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.print("String: ");
      String str = scanner.nextLine();
      int number = Integer.parseInt(str);
      System.out.println("Output String: " + number);
   }
}
```

3. **Check if entered username is valid or not:**

java

Copy code

```
import java.util.Scanner;

public class ValidateUsername {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter username: ");
        String username = scanner.nextLine();
        System.out.print("Re-enter username: ");
        String confirmUsername = scanner.nextLine();

        if (username.equals(confirmUsername)) {
            System.out.println("Username is valid.");
        } else {
            System.out.println("Username is invalid.");
        }
    }
}
```

4. **Sort a list of names in alphabetical order:**

java

Copy code

```
import java.util.Arrays;
import java.util.Scanner;

public class SortNames {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        String[] names = new String[5];
        for (int i = 0; i < names.length; i++) {
            names[i] = scanner.nextLine();
        }

        System.out.print("Order(A/D): ");
        char order = scanner.nextLine().charAt(0);

        Arrays.sort(names);

        if (order == 'D') {
            for (int i = names.length - 1; i >= 0; i--) {
                System.out.println(names[i]);
            }
        } else {
            for (String name : names) {
                System.out.println(name);
            }
        }
    }
}
```

5. **Print special characters separately and count them:**

java

Copy code

```
import java.util.Scanner;

public class SpecialCharacters {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a line: ");
        String line = scanner.nextLine();
        int specialCharCount = 0;
        for (char c : line.toCharArray()) {
            if (!Character.isLetterOrDigit(c) && !Character.isWhitespace(c)) {
                System.out.print(c + " ");
                specialCharCount++;
            }
        }
        System.out.println("\nNumber of Special characters: " + specialCharCount);
    }
}
```

6. **Print the number of vowels in the given statement:**

java

Copy code

```
import java.util.Scanner;

public class VowelCount {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a statement: ");
        String statement = scanner.nextLine();
        int vowelCount = 0;

        for (char c : statement.toLowerCase().toCharArray()) {
            if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u') {
                vowelCount++;
            }
        }
        System.out.println("Number of vowels = " + vowelCount);
    }
}
```

7. **Print consonants and vowels separately in the given word:**

java

Copy code

```
import java.util.Scanner;

public class SeparateConsonantsVowels {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Given Word: ");
        String word = scanner.nextLine();
        StringBuilder consonants = new StringBuilder();
        StringBuilder vowels = new StringBuilder();

        for (char c : word.toLowerCase().toCharArray()) {
            if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u') {
                vowels.append(c).append(" ");
            } else if (Character.isLetter(c)) {
                consonants.append(c).append(" ");
            }
        }
        System.out.println("Consonants: " + consonants);
        System.out.println("Vowels: " + vowels);
    }
}
```

8. **Find whether a given character is present in a string:**

java

Copy code

```
import java.util.Scanner;

public class CharacterSearch {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the string: ");
        String str = scanner.nextLine();
        System.out.print("Enter the character to be searched: ");
        char searchChar = scanner.nextLine().charAt(0);
        boolean found = false;

        for (int i = 0; i < str.length(); i++) {
            if (str.charAt(i) == searchChar) {
                System.out.println(searchChar + " is found in string at index: " + i);
                found = true;
                break;
            }
        }

        if (!found) {
            System.out.println(searchChar + " is not found in the string.");
        }
    }
}
```

9. **Arrange the letters of the word alphabetically in reverse order:**

java

Copy code

```
import java.util.Arrays;
import java.util.Scanner;

public class ReverseAlphabeticalOrder {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the word: ");
        String word = scanner.nextLine();
        char[] chars = word.toCharArray();
        Arrays.sort(chars);

        for (int i = chars.length - 1; i >= 0; i--) {
            System.out.print(chars[i] + " ");
        }
    }
}
```

10. **Remove vowels from a string:**

java

Copy code

```
import java.util.Scanner;

public class RemoveVowels {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String str = scanner.nextLine();
        StringBuilder result = new StringBuilder();

        for (char c : str.toCharArray()) {
            if (c != 'a' && c != 'e' && c != 'i' && c != 'o' && c != 'u' &&
                c != 'A' && c != 'E' && c != 'I' && c != 'O' && c != 'U') {
                result.append(c);
            }
        }
        System.out.println("The string without vowels is: " + result);
    }
}
```

11. **Matrix multiplication:**

java

Copy code

```
import java.util.Scanner;

public class MatrixMultiplication {
    public static void main(String[] args) {
        int[][] mat1 = {{1, 2}, {5, 3}};
        int[][] mat2 = {{2, 3}, {4, 1}};
        int[][] result = new int[2][2];

        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                for (int k = 0; k < 2; k++) {
                    result[i][j] += mat1[i][k] * mat2[k][j];
                }
            }
        }

        System.out.println("Mat Sum = ");
        for (int[] row : result) {
            for (int element : row) {
                System.out.print(element + " ");
            }
            System.out.println();
        }
    }
}
```

12. **Matrix addition:**

java

Copy code

```
import java.util.Scanner;

public class MatrixAddition {
    public static void main(String[] args) {
        int[][] mat1 = {{1, 2}, {5, 3}};
        int[][] mat2 = {{2, 3}, {4, 1}};
        int[][] result = new int[2][2];

        for (int i = 0; i < 2; i++) {
            for (int j = 0; j < 2; j++) {
                result[i][j] = mat1[i][j] + mat2[i][j];
            }
        }

        System.out.println("Mat Sum = ");
        for (int[] row : result) {
            for (int element : row) {
                System.out.print(element + " ");
            }
            System.out.println();
        }
    }
}
```

13. **Merge two sorted arrays:**

java

Copy code

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

public class MergeSortedArrays {
    public static void main(String[] args) {
        int[] arr1 = {1, 3, 4, 5};
        int[] arr2 = {2, 4, 6, 8};
        ArrayList<Integer> mergedList = new ArrayList<>();
        int i = 0, j = 0;
        while (i < arr1.length && j < arr2.length) {
            if (arr1[i] < arr2[j]) {
                mergedList.add(arr1[i++]);
            } else {
                mergedList.add(arr2[j++]);
            }
        }

        while (i < arr1.length) {
            mergedList.add(arr1[i++]);
        }
        while (j < arr2.length) {
            mergedList.add(arr2[j++]);
        }

        System.out.println("Merged Array: " + mergedList);
    }
}
```

14. **Find the Mean, Median, Mode of an array of numbers:**

java

Copy code

```
import java.util.Arrays;
import java.util.HashMap;
import java.util.Map;

public class MeanMedianMode {
    public static void main(String[] args) {
        int[] array = {16, 18, 27, 16, 23, 21, 19};
        System.out.println("Mean = " + mean(array));
        System.out.println("Median = " + median(array));
        System.out.println("Mode = " + mode(array));
    }

    public static double mean(int[] array) {
        double sum = 0;
        for (int num : array) {
            sum += num;
        }
        return sum / array.length;
    }

    public static double median(int[] array) {
        Arrays.sort(array);
        if (array.length % 2 == 0) {
            return (array[array.length / 2 - 1] + array[array.length / 2]) / 2.0;
        } else {
            return array[array.length / 2];
        }
    }

    public static int mode(int[] array) {
        Map<Integer, Integer> countMap = new HashMap<>();
        for (int num : array) {
            countMap.put(num, countMap.getOrDefault(num, 0) + 1);
        }

        int mode = array[0];
        int maxCount = 0;
        for (Map.Entry<Integer, Integer> entry : countMap.entrySet()) {
            if (entry.getValue() > maxCount) {
                maxCount = entry.getValue();
                mode = entry.getKey();
            }
        }
        return mode;
    }
}
```

15. **Find the number of composite numbers in an array of elements:**

java

Copy code

```
import java.util.Scanner;

public class CompositeNumbers {
    public static void main(String[] args) {
        int[] array = {16, 18, 27, 16, 23, 21, 19};
        System.out.println("Number of Composite Numbers = " + countComposites(array));
    }

    public static boolean isComposite(int num) {
        if (num <= 1) {
            return false;
        }
        for (int i = 2; i <= Math.sqrt(num); i++) {
            if (num % i == 0) {
                return true;
            }
        }
        return false;
    }

    public static int countComposites(int[] array) {
        int count = 0;
        for (int num : array) {
            if (isComposite(num)) {
                count++;
            }
        }
        return count;
    }
}
```