STRINGS

1. Anagrams

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

public class anagrams {
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter 1st String: ");
        String str1 = sc.nextLine();
        System.out.print("Enter 2nd String: ");
        String str2 = sc.nextLine();
        str1 = str1.toLowerCase();
        str2 = str2.toLowerCase();
        if (str1.length() == str2.length()) {
            char[] str1charArray = str1.toCharArray();
            char[] str2charArray = str2.toCharArray();
            Arrays.sort(str1charArray);
            Arrays.sort(str2charArray);
            boolean result = Arrays.equals(str1charArray, str2charArray);
            if (result) {
                System.out.println(str1 + " & " + str2 + " are Anagrams of eachother.");
            } else {
                System.out.println(str1 + " & " + str2 + " are not Anagrams.");
            }
        }
    }
}
```

2. Check Palindrome

```java
import java.util.Scanner;

public class checkPalindrome {

    public static boolean isPalindrome (String str) {
        int n = str.length();
        for (int i = 0; i < n/2; i++) {
            if (str.charAt(i) != str.charAt(n-1-i)) {
                return false;
            }
        }
        return true;
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter any String: ");
        String str = sc.nextLine();
        System.out.print("Checking Palindrome (true/false): " + isPalindrome(str));
    }
}
```

3. Concatenation

```java
import java.util.Scanner;

public class concatenation {

    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter Ist String: ");
        String first = sc.nextLine();
        System.out.print("Enter IInd String: ");
        String second = sc.nextLine();
        String concate = first + " " + second;
        System.out.print("String Concatenation: " + concate);
    }
}
```

4. Creation of Strings

```java
import java.util.Scanner;
public class creationOfStrings {
    public static void main(String[] args) {

        // Declaration / Intialization of a String.
        char arr[] = {'a', 'b', 'c', 'd'};
        String str = "Anubhav";
        String str2 = new String("singh");

        // STRINGS ARE IMMUTABLE

        // Input / Output of a String.
        Scanner sc = new Scanner(System.in);
        String name;
        System.out.print("Input: ");
        name = sc.nextLine(); // WHOLE LINE
        // name = sc.next();  // ONLY A WORD
        System.out.print("Output: " +name);
    }
}
```

5. Largest Word

```java
public class largestString {
    public static void main(String[] args) {
        String fruits[] = {"apple", "mango", "banana"};
        String largest = fruits[0];
        for (int i = 1; i < fruits.length; i++) {
            if (largest.compareTo(fruits[i]) < 0) {
                largest = fruits[i];
            }
        }
        System.out.println(largest);
    }
}
```

6. First letter to Uppercase

```java
import java.util.Scanner;

public class firstLtoUppercase {

    public static String toUpppercase (String str) {
        StringBuilder sb = new StringBuilder("");
        char ch = Character.toUpperCase(str.charAt(0));
        sb.append(ch);
        for (int i = 1; i < str.length(); i++) {
            if (str.charAt(i) == ' ' && i < str.length()-1) {
                sb.append(str.charAt(i));
                i++;
                sb.append(Character.toUpperCase(str.charAt(i)));
            } else {
                sb.append(str.charAt(i));
            }
        }
        return sb.toString();
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        String str;
        System.out.print("Enter String: ");
        str = sc.nextLine();
        System.out.println("Changing First Letter to Uppercase:  " + toUpppercase(str));
        System.out.println();
    }
}
```

7. Length of a String

```java
import java.util.Scanner;
public class lengthOfString {
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter String: ");
        String name;
        name = sc.nextLine();
        // Counts SPACES also.
        System.out.println("Length of String: " +name.length());
    }
}
```

8. Question 2

```java
public class ques2 {
    public static void main(String[] args) {
        String str = "AnubhavSingh";
        String str1 = "OnePiece";
        String str2 = "AnubhavSingh";
        System.out.println(str.equals(str1) + " " + str.equals(str2));
    }
}
```

9. Get the Shortest path

```java
import java.util.Scanner;

public class getShortestpath {

    public static float displacement (String path) {

        int x = 0, y = 0;
        for (int i = 0; i < path.length(); i++) {
            char direction = path.charAt(i);

            // SOUTH
            if (direction == 'S') {
                y--;
            }
            // NORTH
            else if (direction == 'N') {
                y++;
            }
            // WEST
            else if (direction == 'W') {
                x--;
            }
            // EAST
            else {
                x++;
            }
        }
        int x2 = x * x;
        int y2 = y * y;
        return (float)Math.sqrt(x2 + y2);
    }

        public static void main(String[] args) {

            Scanner sc = new Scanner (System.in);
            System.out.print("Enter Directions (N/S/E/W): ");
            String dir = sc.nextLine();
            System.out.print("Shortest Path is: " + displacement(dir));
        }
}
```

10. Question 3

```java
public class ques3 {
    public static void main(String[] args) {
        String str = "ApnaCollege".replace("l", " ");
        System.out.println(str);
    }
}
```

11. String Builder

```java
public class stringBuilder {
    public static void main(String[] args) {
        StringBuilder sb = new StringBuilder("");
        for (char ch = 'a'; ch <= 'z'; ch++) {
            sb.append(ch);
        }
        // O(26)
        System.out.println(sb);
        System.out.println(sb.length());
    }
}
```

12. Characters of a String

```java
import java.util.Scanner;

public class singleLetters {

    public static void print_letters(String str) {
        for (int i = 0; i < str.length(); i++) {
            System.out.print(str.charAt(i) + ", ");
        }
        System.out.println();
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter any String: ");
        String str = sc.nextLine();
        System.out.println("String is: " + str);
        System.out.println("Characters of String are: ");
        print_letters(str);
    }
}
```

13. String Compression

```java
import java.util.Scanner;

public class stringCompression {

    public static String compression (String str) {
        StringBuilder sb = new StringBuilder("");
        for (int i = 0; i < str.length(); i++) {
            Integer count = 1;
            while (i < str.length()-1 && str.charAt(i) == str.charAt(i+1)) {
                count++;
                i++;
            }
            sb.append(str.charAt(i));
            if (count > 1) {
                sb.append(count.toString());
            }
        }
        return sb.toString();
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        String str;
        System.out.print("Enter String: ");
        str = sc.nextLine();
        System.out.println("After String Compression: " + compression(str));
    }
}
```

14. String Comparison

```java
import java.util.Scanner;

public class stringsComparision {

    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter String s1: ");
        String s1 = new String();
        s1 = sc.nextLine();
        System.out.print("Enter String s2: ");
        String s2 = new String();
        s2 = sc.nextLine();

        if (s1.equals(s2)) {
            System.out.println("Strings are Equal.");
        } else {
            System.out.println("Strings are not Equal");
        }
    }
}
```

15. Substring

```java
import java.util.Scanner;

public class Substring {

    public static String sub_string (String str, int si, int ei) {
        String substr = "";
        for (int i = si; i <= ei; i++) {
            substr += str.charAt(i);
        }
        return substr;
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter any String: ");
        String str = sc.nextLine();
        System.out.print("Enter Starting Index: ");
        int si = sc.nextInt();
        System.out.print("Enter Ending Index: ");
        int ei = sc.nextInt();
        System.out.println("Subtring is: " + sub_string(str, si, ei));
    }
}
```

16. Checking Vowels

```java
import java.util.Scanner;

public class Substring {

    public static String sub_string (String str, int si, int ei) {
        String substr = "";
        for (int i = si; i <= ei; i++) {
            substr += str.charAt(i);
        }
        return substr;
    }
    public static void main(String[] args) {
        Scanner sc = new Scanner (System.in);
        System.out.print("Enter any String: ");
        String str = sc.nextLine();
        System.out.print("Enter Starting Index: ");
        int si = sc.nextInt();
        System.out.print("Enter Ending Index: ");
        int ei = sc.nextInt();
        System.out.println("Subtring is: " + sub_string(str, si, ei));
    }
}
```