1) Write a program to reverse a string without using the inbuilt method.

Ans:

```
public class Solution{
    public static void main(String[] args) {

        String originalString = "Hello";
        String reversedString = reverseString(originalString);

        System.out.println("Original String: " + originalString);
        System.out.println("Reversed String: " + reversedString);
    }

    public static String reverseString(String input) {
        char[] chars = input.toCharArray();
        int left = 0;
        int right = chars.length - 1;

        while (left < right) {
            char temp = chars[left];
            chars[left] = chars[right];
            chars[right] = temp;
            left++;
            right--;
        }

        return new String(chars);
    }
}
```

2) Write a Java program to know whether the given string is palindrome.

Ans:

```
public class PalindromeChecker {
    public static void main(String[] args) {
        String str = "nitin";
        boolean isPalindrome = checkPalindrome(str);
        System.out.println("Input string: " + str);
```

```
        System.out.println("Is Palindrome? " + isPalindrome);
    }

    public static boolean checkPalindrome(String str) {
        int left = 0;
        int right = str.length() - 1;

        while (left < right) {
            if (str.charAt(left) != str.charAt(right)) {
                return false;
            }
            left++;
            right--;
        }

        return true;
    }
}
```

3) Write a Java program to convert upper case to lower case and vice-versa.

Ans:

```
public class CaseConverter {
    public static void main(String[] args) {
        String input = "Hello, World";

        String convertedString = convertCase(input);

        System.out.println("Input string: " + input);
        System.out.println("Converted string: " + convertedString);
    }

    public static String convertCase(String input) {
        char[] chars = input.toCharArray();

        for (int i = 0; i < chars.length; i++) {
            if (Character.isUpperCase(chars[i])) {
                chars[i] = Character.toLowerCase(chars[i]);
            } else if (Character.isLowerCase(chars[i])) {
                chars[i] = Character.toUpperCase(chars[i]);
            }
```

```
        }

        return new String(chars);
    }
}
```

4) Write a Java program to remove a particular character from a string.

Ans:

```
public class CharacterRemover {
    public static void main(String[] args) {
        String input = "Hello, World!";

        char charToRemove = 'o';

        String result = removeCharacter(input, charToRemove);

        System.out.println("Input string: " + input);
        System.out.println("Character to remove: " + charToRemove);
        System.out.println("Result: " + result);
    }

    public static String removeCharacter(String input, char charToRemove) {
        StringBuilder builder = new StringBuilder();

        for (int i = 0; i < input.length(); i++) {
            char currentChar = input.charAt(i);

            if (currentChar != charToRemove) {
                builder.append(currentChar);
            }
        }

        return builder.toString();
    }
}
```

5) write a Java program to find the index of a substring.

Ans:

```
public class SubstringIndexFinder {
    public static void main(String[] args) {
        String mainString = "Hello, World!";
        String substring = "World";
        int index = findSubstringIndex(mainString, substring);
        System.out.println("Main String: " + mainString);
        System.out.println("Substring: " + substring);
        System.out.println("Substring Index: " + index);
    }

    public static int findSubstringIndex(String mainString, String substring) {
        int index = mainString.indexOf(substring);
        return index;
    }
}
```