OOP Lab: Experiment 8

Submitted By: Aryan Saxena
Batch: B1
SAP Id: 500082431
Roll No.: R214220274

Exercise 1: Write a program for searching strings for the first occurrence of a character or substring and for the last occurrence of a character or substring.

Code:

```
import java.util.*;
public class Occurance
{
    int nonRepeat(String s)
    {
        int index = -1;
        char arr[] = new char[256];
        for(int i = 0; i < s.length(); i++)
        {
            arr[s.charAt(i)]++;
        }

        for(int i = 0; i < s.length(); i++)
        {
            if(arr[s.charAt(i)] == 1)
            {
                index = i;
                break;
            }
        }

        return index;
    }

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        Occurance obj = new Occurance();
        String s;
        System.out.print("Enter String: ");
        s = sc.nextLine();
        int index = obj.nonRepeat(s);
        if(index == -1)
            System.out.println("No Repeating Character!");
        else
        {
            System.out.println("1st Repeated Character is: " +
s.charAt(index));

        }
```

```
    }

}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP> cd "f:\UPES\Academi
f ($?) { javac Occurance.java } ; if ($?) { java Occurance }
Enter String: AryanSaxena
1st Repeated Character is: A
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```

Exercise 2: Write a program that converts all characters of a string in capital letters. (Use StringBuffer to store a string). Don't use inbuilt function.

Code:

```
import java.util.*;

public class CapitalBuffer
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        StringBuffer str = new StringBuffer();
        System.out.println("Enter a String: ");
        String s = sc.nextLine();
        str.append(s);
        for(int i = 0; i < str.length(); i++) {
            if(str.charAt(i) >= 'a' && str.charAt(i) <= 'z') {
                char c = str.charAt(i);
                c = (char)((int)c - 32);
                str.setCharAt(i, c);
            }
        }
        System.out.println("Capital Converted: " + str);
        sc.close();
    }
}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP> cd "f:\UPES\Academi
em3-Java-OOP\LAB\Experiment 8\" ; if ($?) { javac CapitalBuffer.java } ; if ($?) { java C
Enter a String:
bAnana
Capital Converted: BANANA
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```

Exercise 3: Write a program in Java to read a statement from console, convert it into upper case and again print on console. (Don't use inbuilt function)

Code:

```
public class ConsoleCase
{
    public static void main(String[] args) {
        StringBuffer str = new StringBuffer();
        str.append(args[0]);
        for(int i = 0; i < str.length(); i++) {
            if(str.charAt(i) >= 'a' && str.charAt(i) <= 'z') {
                char c = str.charAt(i);
                c = (char)((int)c - 32);
                str.setCharAt(i, c);
            }
        }
        System.out.println("Capital Converted: " + str);
    }

}
```

Output:

```
        at ConsoleCase.main(ConsoleCase.java:5)
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8> javac ConsoleCase.java
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8> java ConsoleCase Aryan
Capital Converted: ARYAN
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```

Exercise 4: Write a program in Java to create a String object. Initialize this object with your name. Find the length of your name using the appropriate String method. Find whether the character 'a' is in your name or not; if yes find the number of times 'a' appears in your name. Print locations of occurrences of 'a' .Try the same for different String objects.

Code:

```
import java.util.*;

public class Atimes
{
    public static void main(String[] args)
    {
        int Ticker = 0;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter String: ");
        String s = sc.nextLine();
        String str = new String(s);
        StringBuilder result = new StringBuilder();
        for(int i = 0; i < str.length(); i++) {
            if(str.charAt(i) == 'a') {
                Ticker++;
                result.append(i + " ");
            }
        }
        if(Ticker != 0) {
            System.out.println("Number of occurences: " + Ticker);
            System.out.println("The index of occurences: " + result);
        }
        else {
            System.out.println("Character not present");
        }
    }


}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP> cd "f:\UPES\Academi
em3-Java-OOP\LAB\Experiment 8\" ; if ($?) { javac Atimes.java } ; if ($?) { java Atimes }
Enter String:
banana
Number of occurences: 3
The index of occurences: 1 3 5
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8> cd
ter\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8\" ; if ($?) { javac Atimes.java } ; if ($?
Enter String:
bnn
Character not present
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```

Exercise 5: Write a Java code that converts int to Integer, converts Integer to String, converts String to int, converts int to String, converts String to Integer converts Integer to int.

Code:

```
public class ConversionGames
{
    public static void main(String[] args)
      {
        int a = 99;
        System.out.println("The int value is: " + a);
        Integer inta = Integer.valueOf(a);
        System.out.println("int to Integer: " + inta);
        String s = Integer.toString(inta);
        System.out.println("Integer to String: " + s);
        int Int2Str = Integer.parseInt(s);
        System.out.println("String to int: " + Int2Str);
        String Str2Int = String.valueOf(Int2Str);
        System.out.println("int to String: " + Str2Int);
        Integer Str22Int = Integer.valueOf(Str2Int);
        System.out.println("String to Integer: " + Str22Int);
        int IntFinal = Str22Int.intValue();
        System.out.println("Integer to int: " + IntFinal);
    }

}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP> cd "f:\UPES\Academi
em3-Java-OOP\LAB\Experiment 8\" ; if ($?) { javac ConversionGames.java } ; if ($?) { java
The int value is: 99
int to Integer: 99
Integer to String: 99
String to int: 99
int to String: 99
String to Integer: 99
Integer to int: 99
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```

Exercise 6: Write a Java code that converts float to Float converts Float to String converts String to float converts float to String converts String to Float converts Float to float.

Code:

```java
public class ConverstionGamesFloat
{
    public static void main(String[] args) {
        float f = 99f;
        Float V1 = Float.valueOf(f);
        System.out.println("float to Float: " + V1);
        String Str = String.valueOf(V1);
        System.out.println("Float to String: " + Str);
        float V2 = Float.parseFloat(Str);
        System.out.println("String to float: " + V2);
        String Str2 = String.valueOf(V2);
        System.out.println("float to String: " + Str2);
        Float V3 = Float.valueOf(Str2);
        System.out.println("String to Float: " + V3);
        float V4 = V3.floatValue();
        System.out.println("Float to float: " + V4);
    }

}
```

Output:

```
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP> cd "f:\UPES\Academi
em3-Java-OOP\LAB\Experiment 8\" ; if ($?) { javac ConverstionGamesFloat.java } ; if ($?)
float to Float: 99.0
Float to String: 99.0
String to float: 99.0
float to String: 99.0
String to Float: 99.0
Float to float: 99.0
PS F:\UPES\Academics\2nd Year\3rd Semester\OOPs Theory\sem3-Java-OOP\LAB\Experiment 8>
```