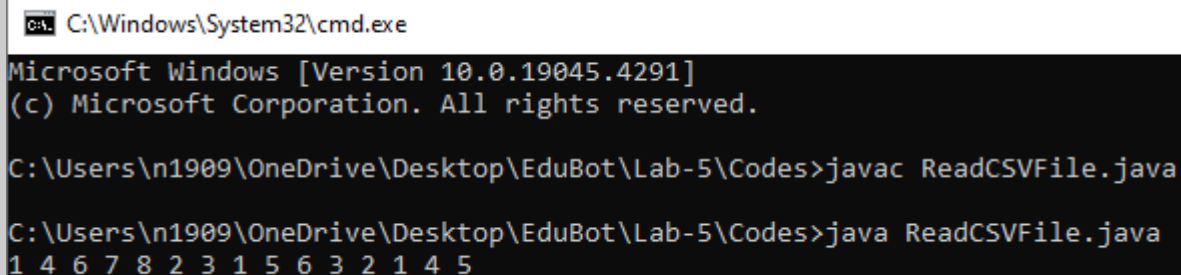# Programming Fundamentals
Lab #5

Exercise 1 (ReadCSVFile):

```java
import java.io.BufferedReader;
import java.io.FileReader;
import java.io.IOException;

public class ReadCSVFile {
    public static void main(String[] args) {
        String fileName = "input.csv";

        try (BufferedReader br = new BufferedReader(new
FileReader(fileName))) {
            String line;
            while ((line = br.readLine()) != null) {
                String[] numbers = line.split(",");
                for (String num : numbers) {
                    System.out.print(num + " ");
                }
                System.out.println("\n");
            }
        } catch (IOException e) {
            System.err.println("Error reading the file: " +
e.getMessage());
        }
    }
}
```

```
C:\Windows\System32\cmd.exe

Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\n1909\OneDrive\Desktop\EduBot\Lab-5\Codes>javac ReadCSVFile.java

C:\Users\n1909\OneDrive\Desktop\EduBot\Lab-5\Codes>java ReadCSVFile.java
1 4 6 7 8 2 3 1 5 6 3 2 1 4 5
```

Exercise 2 (UserStringWriter):

```java
import java.io.BufferedWriter;
import java.io.FileWriter;
import java.io.IOException;
import java.util.Scanner;
public class UserStringWriter {
    public static void main(String[] args) {
        writeStringsToFile("userStrings.txt");
    }

    public static void writeStringsToFile(String filename) {
        try (BufferedWriter writer = new BufferedWriter(new
FileWriter(filename))) {
            Scanner scanner = new Scanner(System.in);
            String userInput;
            while (true) {
                System.out.print("Enter a string (or 'DONE' to quit): ");
                userInput = scanner.nextLine();
                if (userInput.equals("DONE")) {
                    break;
                }
                writer.write(userInput + "\n");
            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

```
C:\Windows\System32\cmd.exe

Microsoft Windows [Version 10.0.19045.4291]
(c) Microsoft Corporation. All rights reserved.

C:\Users\n1909\OneDrive\Desktop\EduBot\Lab-5\Codes>javac WriteToFile.java

C:\Users\n1909\OneDrive\Desktop\EduBot\Lab-5\Codes>java WriteToFile.java
Enter strings (Enter 'DONE' to finish):
Ravikumar Naik
Sajida
Asha
Harinath
Mariya
Yashu
Done
DONE
Strings have been written to userStrings.txt.

C:\Users\n1909\OneDrive\Desktop\EduBot\Lab-5\Codes>
```
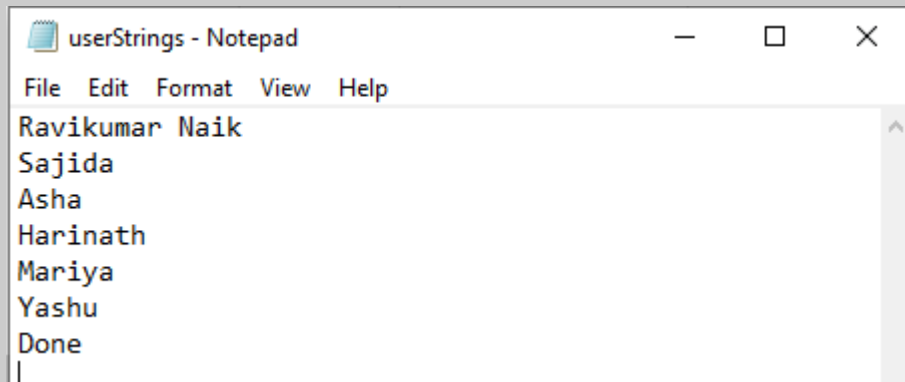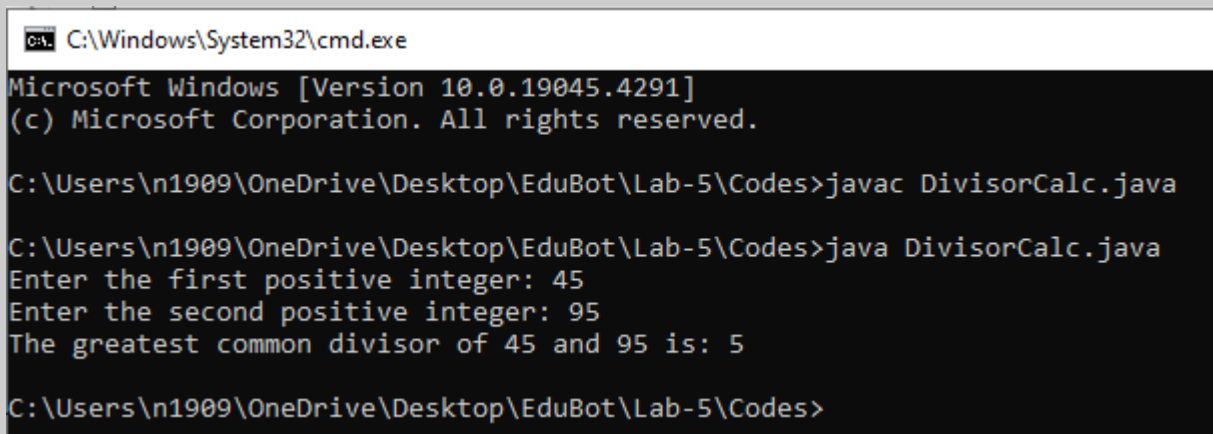
Exercise 3 (GreatestCommonDivisor):

```java
import java.util.Scanner;
public class GreatestCommonDivisor {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the first positive integer: ");
        int num1 = scanner.nextInt();
        System.out.print("Enter the second positive integer: ");
        int num2 = scanner.nextInt();
        System.out.println("The greatest common divisor of " + num1 + " and " +
num2 + " is: " + gcd(num1, num2));
        scanner.close();
    }

    public static int gcd(int num1, int num2) {
        if (num2 == 0) {
            return num1;
        } else {
            return gcd(num2, num1 % num2);
        }
    }
}
```
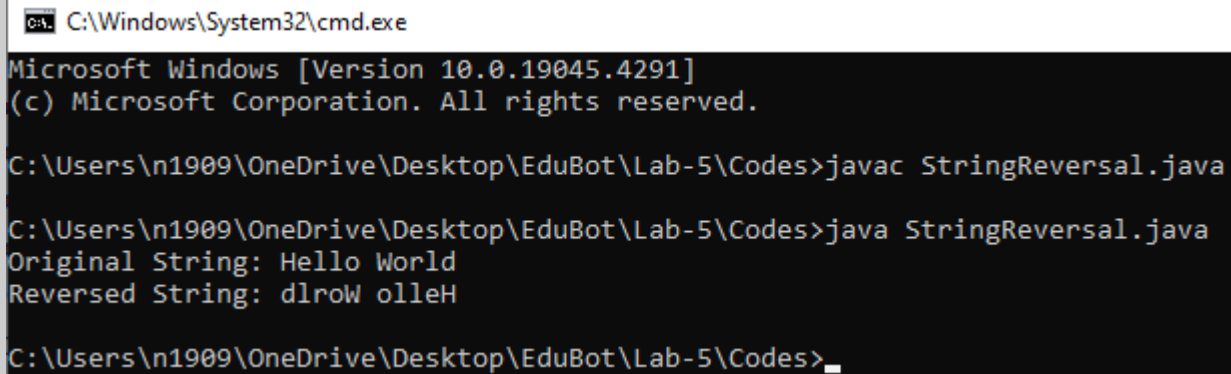
Exercise 4 (StringReversal):

```java
public class StringReversal {
    public static void main(String[] args) {
        String input = "Hello, world!";
        String reversed = reverseString(input);
        System.out.println("Original: " + input);
        System.out.println("Reversed: " + reversed);
    }

    public static String reverseString(String s) {
        if (s.isEmpty()) {
            return s;
        } else {
            return reverseString(s.substring(1)) + s.charAt(0);
        }
    }
}
```