

## LAB 10 – File Input and Output

### Objectives

At the end of this lab, the students are able to

- i. To write a Java program that capable to obtain file properties and manipulating file
- ii. To write a Java program that capable to obtain input using Scanner class and File class
- iii. To write a Java program that capable to print out the output in file.

### 10.1 Activity 1

#### 10.1.1 Objective

Writing a Java program using File class and explore its properties.

#### 10.1.2 Problem Description

Write a Java program that should be able to read a file, “input.txt”. The content of “input.txt” file is shown in Figure 10.1. Explore and manipulates File properties by using the following methods:

- i. exists()
- ii. length()
- iii. canRead()
- iv. canWrite()
- v. isDirectory()
- vi. isFile();
- vii. isAbsolute()
- viii. isHidden()
- ix. getAbsolutePath()
- x. lastModified()
- xi. renameTo()

```
128 3.141 Kitties!  
Line2 This is Line2. 100002 This is still Line2.  
Line3  
Line4 444 BlueBumper 90 120
```

Figure 10.1: input.txt

[Estimated Time: 20 minutes]

## **10.2 Activity 2**

### **10.2.1 Objective**

Write a Java program to read all the string data using Scanner and File class.

### **10.2.2 Problem Description**

Write a Java program that should be able to read input.txt file as created in Figure 10.1 line by line and display out the whole content.

[Estimate 20 minutes]

## **10.3 Activity 3**

### **10.3.1 Objective**

Write a Java program to read all the string data using Scanner and File class.

### **10.3.2 Problem Description**

Assume you have the same input.txt file as depicted in Figure 10.1. Write a Java program that should be able to read input.txt file as created in Figure 10.1 word by word and display out the whole content.

[Estimated Time: 20 minutes]

## 10.4 Activity 4

### 10.4.1 Objective

Write a Java program to read all the data according to its specific type using Scanner and File class.

### 10.4.2 Problem Description

Assume you have a file (student.txt) that contains students' data as shown in Figure 10.2. The file consists of 10 rows with each row contains student' name, marks and grades accordingly. Write a Java program that should be able to:

- i. declare one dimensional arrays
- ii. read the data one by one and assign to the specific arrays that have been declared
- iii. sort the students according to their mark in descending order
- iv. calculate total marks and its average
- v. display out the sorted list of students (name, marks & grade), total mark and average

```
Badli 86.00 A
Tarmizi 80.00 A
Faisal 85.00 A
Maryam 94.00 A
Fatimah 64.00 C
Humayraa 85.00 A
Abdullah 63.00 C
Luqman 60.00 C
Zahraa 72.00 B
Abdurrahman 75.00 B
```

Figure 10.2: student.txt

[Estimated Time: 30 minutes]

## **10.5 Activity 5**

### **10.5.1 Objective**

Write a Java program to print into file using PrintWriter.

### **10.5.2 Problem Description**

Modify your program as in Activity 4 by printing out the sorted list, total and average in an output file. Name the output file as result.txt.

[Estimated Time: 30 minutes]