

# CS102A Introduction to Computer Programming

## Fall 2020

### Lab 9

## Objectives

1. Consolidate the concepts learned in previous lectures.
2. Learn how to read / write files in Java.
3. Learn more `String` operations.

## 1 Exercises

### 1.1 Exercise 1

Write a Java program that gets a list of all directory and file names on your Desktop. You may refer to the lecture notes if you do not know how to do this.

### 1.2 Exercise 2

Write a Java program that reads the contents of an input text file, converts all letters into uppercase, and writes the result to an output file. The output file should be placed at the same folder as the input file. The input file is assumed to contain only English letters, numbers, and punctuation marks.

### 1.3 Exercise 3

Kids always make mistakes in English writing. A common mistake is that they often forget to use capital letters at the beginning of a sentence. Write a Java program to help them correct such

mistakes.

Usually, the first word after a full stop (.) is regarded as the beginning of a new sentence. However, a full stop may also be used in abbreviations. When a word is abbreviated after the first few letters, the general rule is to put a full stop after the abbreviation: for example, “Dr.” and “Mr.” We can assume every abbreviation begins with a capital letter. This indicates whether the given full stop signifies the end of a sentence or an abbreviation.

Your Java program should first read the text from an input file, and then write the result to an output file.

Sample input and output:

```
today I borrowed a book from my neighbor. he will come and get it
back tomorrow.
Today I borrowed a book from my neighbor. He will come and get it
back tomorrow.
```

```
please get the report from BBC. news ASAP. as the boss wants to
read it now. he will not stay here until the evening.
Please get the report from BBC. news ASAP. as the boss wants to
read it now. He will not stay here until the evening.
```

## 1.4 Exercise 4

Write a Java program that plays an .mp3 music clip. Here is a simple example:

```
1 import java.io.File;
2 import javafx.scene.media.Media;
3 import javafx.scene.media.MediaPlayer;
4 import javafx.embed.swing.JFXPanel;
5
6 public class Playmp3 {
7     public static void main(String[] args) {
8         final JFXPanel fxPanel = new JFXPanel(); // to
            initialize JavaFx
9         File file = new File("C:\\Users\\todd\\Desktop\\a.mp3");
10        final Media media = new Media(file.toURI().toString());
```

```
11         final MediaPlayer mediaPlayer = new MediaPlayer(media);
12         mediaPlayer.play();
13     }
14 }
```

You may prepare an `.mp3` file to test the above code on your own. Now, can the same program play a `.wav` file?