

CSCI 1015 – Programming Assignment 8

Classes and Methods

Learning Outcomes

- Use an array to store data.
- Process the contents of an array to determine simple statistical properties.

Required Reading

Savitch - Sections 7.1-7.2, 7.4

Instructions

For this assignment you will be writing a program that calculates information about a sequence of tracks on an album.

Write a Java main class called `YourlastnameProgram8.java` (with your actual last name) that does the following:

- Displays a welcome message with your name in it.
- Prompts for and reads the lengths in minutes and seconds of 12 tracks of an album.
- Stores the length of each track in seconds in an array. (Note: total seconds can be computed by multiplying the minutes by 60 and adding the seconds.)
- Computes and displays the following:
 - The shortest track on the album and its length.
 - The longest track on the album and its length.
 - The total running time of the entire album.
 - The average length of a track on the album.
- In the output all times should be in the standard minutes and seconds format with a colon in between. This should be done by a private static void function in the main class with the following header:

```
private static void displayTime(int totalSeconds)
```

The number of minutes can be calculated using the / and % operators. Note that if the number of seconds is less than 10, this function must display an extra zero after the colon. For example, a track with a total length of 185 seconds should have its length displayed as 3:05.

Example Input and Output

Welcome to Nicholas Coleman's Album Length Calculator
Please enter all track lengths in minutes and seconds
separated by a space.

```
Track 1: 3 45
Track 2: 2 3
Track 3: 5 43
Track 4: 6 12
Track 5: 8 11
Track 6: 3 24
Track 7: 4 35
Track 8: 3 12
Track 9: 2 11
Track 10: 7 13
Track 11: 6 24
Track 12: 5 14
```

```
The shortest track is #2 at 2:03
The longest track is #5 at 8:11
The total length of the album is: 58:07
The average length of a track is: 4:50
```

Notes and Comments

Upload your Java source file to the dropbox named **Program 8**. The name of the source file for the main class must be your last name followed by Program8 with the extension .java. For example, mine would be ColemanProgram8.java.

Make sure to include comments with your name, a description of what the program does, the course (CSCI 1015), and the assignment name (Program 8) at the beginning of all of your source files. Also make sure to add comments at the beginning of each of the methods you write describing what they do.

Make sure you only hand in the source files for your assignment, not the class files, or any other files that NetBeans creates.

Your programs must compile without errors in order to be graded. Once your program compiles make sure to test it using **multiple test cases** to see if it meets the requirements of the assignment.