

Faculty of Science

Course: CSCI 2020U: Software Systems Development and Integration

Lab: #8

Topic: Loading and saving files

Overview

In this lab, you'll adapt a previous lab (**lab 05**: with a table user interface that shows student marks), adding the ability to load and save the records from the table. It is recommended, but not required, that you use IntelliJ for this lab.

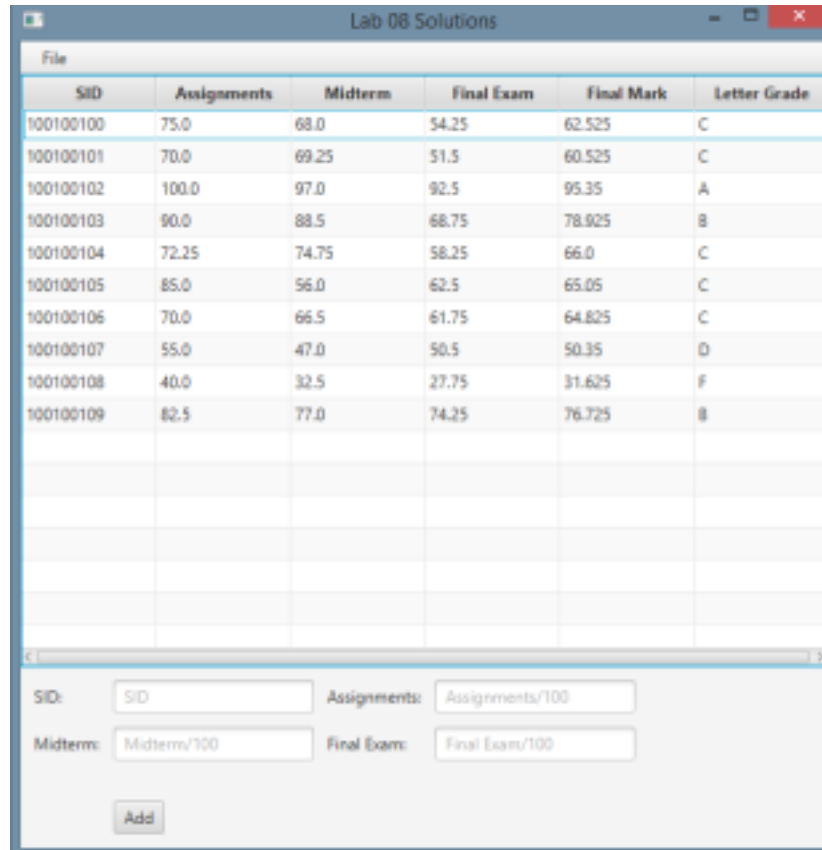
Instructions

You can use any operating system or environment for this laboratory assignment.

You will create a new directory (or IntelliJ IDEA project) called `lab08`. Lab 05 should be your starting point, and will focus on the file operations only. Add the following capabilities to the lab:

1. Ensure that the following menu items are added to the 'File' menu:
 - New
 - Open
 - Save
 - Save As
 - Exit
2. Create an instance variable called `currentFilename`, which stores the currently viewed file's filename
3. Write a function `save()` that will pull all data from the TableView's data structure, and save it to the current filename as a CSV file. This function will save only the following fields:
 - SID
 - Assignments
 - Midterm
 - Final Exam
4. Write a function `load()` that will load the CSV data (as above) from the current filename, and populate the TableView
5. When the 'New' menu item is clicked, you will clear all items from the TableView
6. When the 'Open' menu item is clicked, you will show a file chooser, which will do the following when used:
 - Update the `currentFilename` variable to the user-selected file's filename
 - Call `load()`
7. When the 'Save As' menu item is clicked, you will show a file chooser (<https://docs.oracle.com/javase/8/javafx/api/javafx/stage/FileChooser.html>), which will do the following when used:
 - Update the `currentFilename` variable to the user-selected file's filename
 - Call `save()`
8. When the 'Save' menu item is clicked, you will call `save()`

9. When the 'Exit' menu item is clicked, you will exit the application



The screenshot shows a Java application window titled "Lab 08 Solutions". It contains a table with student scores and a form at the bottom for adding new entries.

SID	Assignments	Midterm	Final Exam	Final Mark	Letter Grade
100100100	75.0	68.0	54.25	62.525	C
100100101	70.0	69.25	51.5	60.525	C
100100102	100.0	97.0	92.5	95.35	A
100100103	90.0	88.5	68.75	78.925	B
100100104	72.25	74.75	58.25	66.0	C
100100105	85.0	56.0	62.5	65.05	C
100100106	70.0	66.5	61.75	64.825	C
100100107	55.0	47.0	50.5	50.35	D
100100108	40.0	32.5	27.75	31.625	F
100100109	82.5	77.0	74.25	76.725	B

Below the table is a form with the following fields and buttons:

- SID:
- Assignments:
- Midterm:
- Final Exam:
-

Figure 1: The application's sample output

How to Submit

In session (*Preferably*)

- Show your running application to the TA to prove that you have finished this lab.
 - This can happen by your sharing your screen to the TA or direct messaging them with screenshots.
 - If your TA is too busy while helping other students in-session, you may follow the "after lab hours" submission instructions below instead.

After lab hours (*1 week to submit - before your next lab session*)

In one PDF documents attach the following:

- Screenshot of your local directory "lab08" showing the appropriate .java/.fxml files.
- Screenshot of your running application (UI) including the expected output.
- Link of your GitHub repository (if it is a public repository) -- this contains your full source code.
 - Alternatively, attach your project as a .zip along with the PDF file.

The TA can provide oral feedback if you do not receive full marks for any lab assignment, but it is most appropriate to ask the TA for this feedback in a timely fashion (i.e. ask now, not at the end of the term).