

## Assignment 07 – File Access

Download *grades.csv* and *enrollment.csv* from D2L. These files are required to complete the following programming exercises.

### 1. Course Grades

You are to develop a menu driven grade program that has the below capabilities.

**Note:** You should use methods to improve readability and maintainability of your codebase. I suggest having a method for the first four items listed below.

- **(D)ELETE** - Given a first and last name provided by the user delete the corresponding record in *grades.csv*, if one exists. If two students happen to have the same first and last name, delete the record the appears **FIRST** in the file.
- **(I)NSERT** – Given a first and last name of a student as well as an integer value representing the students final grade in the course insert a new record into the *grades.csv*

**IMPORTANT:** *grades.csv* is sorted by last name of student. Also, a user may enter a decimal grade; however, it should be rounded to the **nearest** integer before storing it in the file.

- **(F)IND** – Given a first and last name of a student find the corresponding record for that student. If more than one student happen to have the same first and last name, display **ALL** matching records.
- **(S)TATISTICS** – Display the 1) class average, 2) maximum grade, 3) minimum grade, and 4) number of students in A, B, C, D, and F categories from the *grades.csv* file.

**HINT:** Have a counter for each grade category

Category/Classification	Grade Range
A	80-100
B	70-79
C	60-69
D	50-59
F	0-49

- **(E)XIT** – Terminates program execution.

**Note:** If the user specifies an invalid menu choice. Display the message “ERROR: Invalid menu selection. Please try again!” and prompt the user to make another menu choice

**Sample Output: (Make sure to place your name in the output where indicated)**

Welcome to *YourName's* grade application!

\*\*\*\*\*

MENU:

- (D)eleate a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: S

AVG: 72.3%

MAX: 97%

MIN: 38%

A grades: 10

B grades: 8

C grades: 7

D grades: 3

F grades: 2

\*\*\*\*\*

MENU:

- (D)eleate a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: I

Please enter student first name: Aaron

Please enter student last name: Sarson

Please enter student grade: 84.5

Record successfully inserted: Sarson,Aaron,85

\*\*\*\*\*

MENU:

- (D)eleate a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: D

Please enter student first name: Darcey

Please enter student last name: Fernandez

Successfully deleted record, if one existed!

\*\*\*\*\*

MENU:

- (D)delete a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: F

Please enter student first name: Aaron

Please enter student last name: Sarson

Matching record(s):

Sarson,Aaron,85

\*\*\*\*\*

MENU:

- (D)delete a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: Z

ERROR: Invalid menu selection. Please try again!

\*\*\*\*\*

MENU:

- (D)delete a record
- (I)nsert a record
- (F)ind matching records
- (S)tatistical Data
- (E)xit program

\*\*\*\*\*

Please enter your choice: E

Thank-you for using *YourName's* grade application!

## 2. Enrollment Numbers

In this question you will develop a program that produces an enrollment summary document, *output.txt*, given the input file *enrollment.csv*. Records in *enrollment.csv* follow the format:

**Student First, Student Last, Student ID, Department, Program, Year of Study**

**IMPORTANT:** Records in the *enrollment.csv* are sorted by Department, Program, then Year of Study. This is an assumption which must hold true to complete this question.

The enrollment document should match that shown in **sample output**. The document displays total enrollment by year of study for each program, department, and college wide enrollment.

In the final output use the following table to display the correct text for each year of study.

**IMPORTANT:** Not all programs are the same number of years.

Year of Study	Description/Text
1	Freshman
2	Sophomore
3	Junior

<Sample output is on the following page>

**Sample Output: (output.txt file)**

STUDENT COUNT BY DEPARTMENT

School of Business

Business

Freshman: ###  
Sophomore: ###  
###

Business TOTAL

Business Management – Accounting

Freshman: ###  
Sophomore: ###  
Junior: ###

Business Management – Accounting TOTAL

###

Business Analysis & Improvement

Freshman: ###  
###

Business Analysis & Improvement TOTAL

School of Business Total

###

School of Information Technology

Computer Programmer

Freshman: ###  
Sophomore: ###  
###

Computer Programmer TOTAL

Computer Software & Database Development

Freshman: ###  
Sophomore: ###  
###

Computer Software & Database Development TOTAL

Information Technology Professional

Freshman: ###  
###

Information Technology Professional TOTAL

Cyber Infrastructure Specialist

Freshman: ###  
Sophomore: ###  
###

Cyber Infrastructure Specialist TOTAL

School of Nursing

Practical Nursing

Freshman: ###  
Sophomore: ###  
###

Practical Nursing TOTAL

COLLEGE WIDE TOTAL

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