FURTHER PROGRAMMING

Assignment 1: Console app

[DATE]

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Contents

Project Description 2

Technical Description 2

- Model 2
- Helper 2
- File Handler 2
- Enrolment Management 2
  - Student Enrolment Manager 2
  - Student Enrolment 2

Main method 2

- Add: 2
- Delete: 3
- Get one: 3
- Get all: 3
- Print all students from a course in a semester: 3
- Print all courses from a student in a semester: 3
- Print all courses in a semester: 3

Diagram 4

- Class Diagram: 4
- Use Case Diagram: 5

Appendix 5

Reference 5

Project Description

This project is a console app made using java programming language. Data are generate using the default.csv file. In this app, the user is allow to view all enrolment in the database and use the information to update enrolment. To make it clear, the user will have a selection of choice: add enrolment, delete enrolment, get one enrolment, get all enrolment, get all students in one course in a semester, get all courses of a student in a semester, and all courses in a semester. Moreover, the user are allow to save these result in the student and course file so that they can use the data later.

Technical Description

In the source code, there are four main packages to help deal with each mission.

Model

In this package, there are three classes, these are the main object to store student, course, and enrolment information. These classes also have toString() to override the original toString method and a toCsv so that it could get data and write it as csv format.

Helper

Helper package includes ReadCSV and Menu class. Read csv is a class which had a static method called readCSV, which use to read a csv file and convert each line into data that can be used to create the three main objects. Menu class is a class which validate input and execute all the main function of the program based on the user input. Menu also check with database if the user has entered the write data into the program.

File Handler

File handler include three classes which handle data from students, courses, and enrolments and use that data to write into a csv file to stored the information. These class have getter and setter which set an ArrayList of course, student, and enrollent, dumpToFile() is a method that helps put the arraylist to a csv file.

Enrolment Management

Student Enrolment Manager

This is the interface, and it contains four main method of the app, which are add, delete, get one, and get all enrolments.

Student Enrolment

This is the main processing class of the app. These app has all the data from the csv file from using populate data which read data from the csv. Moreover, this class implements the interface Student Enrolment Manager which implement add, delete, get one, and get all enrolments. In addition to that, it also implement get students from course and semester, get courses from student and semester, and get courses from semester as well.

Main method

Add:

This function accepts an enrolment as a parameter, which it will check if the enrolment is valid to be added. To be more precise, if the course is not in the semester, it will not added and return false, however, if the enrolment is already in the database, which mean the student has enrolled a course in that semester, the function will not add that enrolment and return false as well. But

if the enrolment is new and the course is available, the function will add the enrolment and return true.

Delete:

The function accepts an enrolment as parameter, which it will check if the enrolment is valid to be deleted. If the enrolment does not exist in the enrolment database, it will not delete that enrolment and return false. However, if the enrolment is already exist in the program, the function will delete that enrolment and return true.

Get one:

The function accepts three attributes: String studentID, String courseID, and String semester. After that, it will check the list of enrolment to see if there is a student with the id and course and semester that just like the parameter, if not, it will return null, else it will return an enrolment for the user.

Get all:

The function has no parameter, however, the function return an arraylist for enrolment from the database so the user can print it out.

Print all students from a course in a semester:

This function will get all the students by accepting the course id and semester, check if the course ID and semester in the enrolment has that student and print it out for the user. However, if there are no students, the function will print “There is no student”.

Print all courses from a student in a semester:

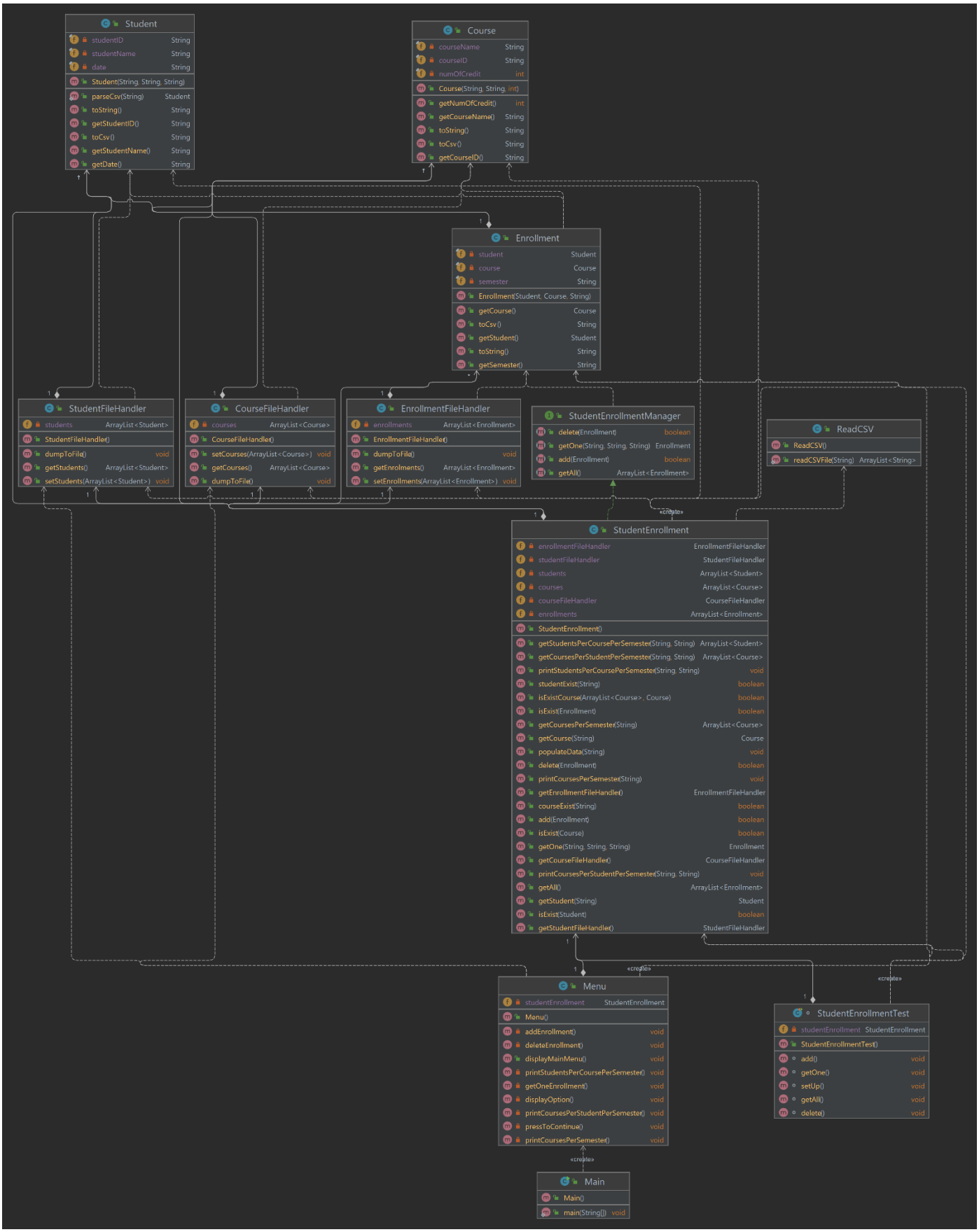
This function will get all courses which a student enrol to in a specific semester. The function will get courses from the student ID and semester in the enrolments and will print all courses. However, if there are no courses, the function will print “There is no course”.

Print all courses in a semester:

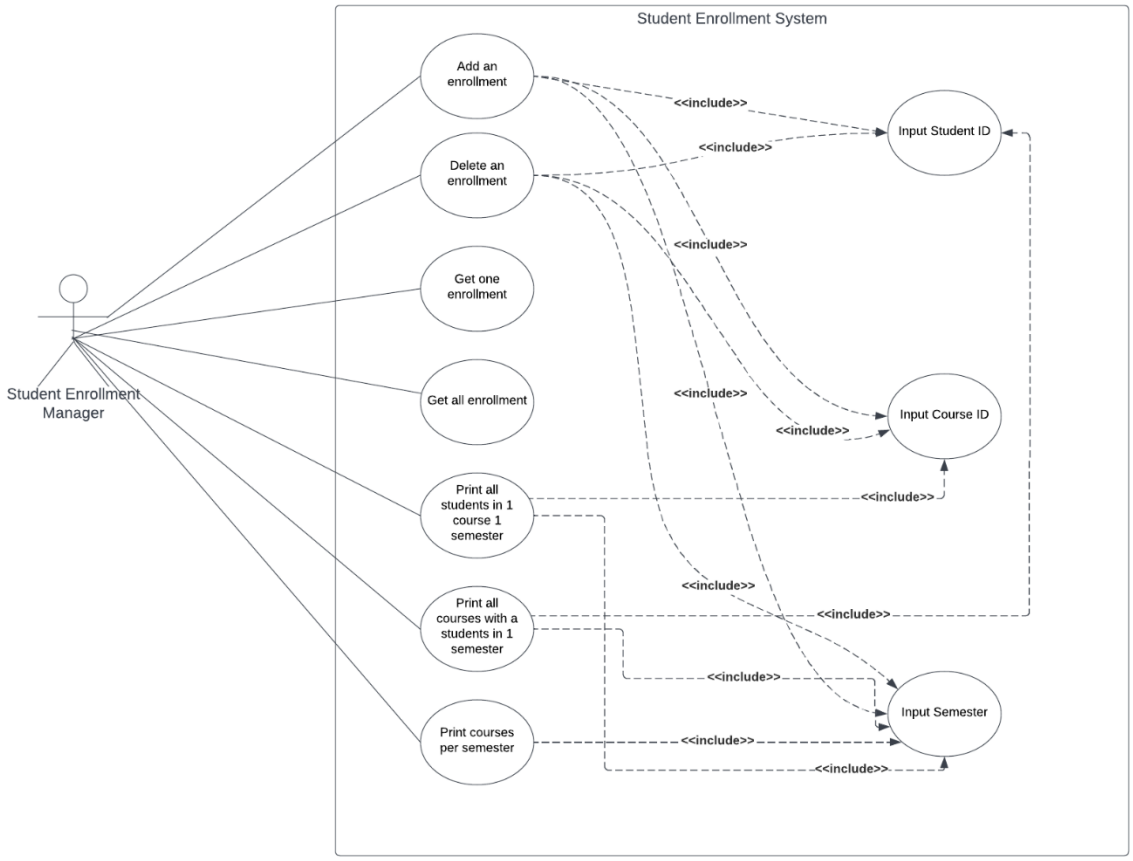
This function use the get course from semester which accepts the semester input. After that, the function will get that courses which available in the semester and return an arraylist of course, then it will print all of the course in the arraylist for the user, if there are no courses, it will print out “There is no course”.

Diagram

Class Diagram:



Use Case Diagram:



Appendix

Github repo link: https://github.com/s3878694/further_programming_asm1

Reference