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Data Design Document

Submitted to:

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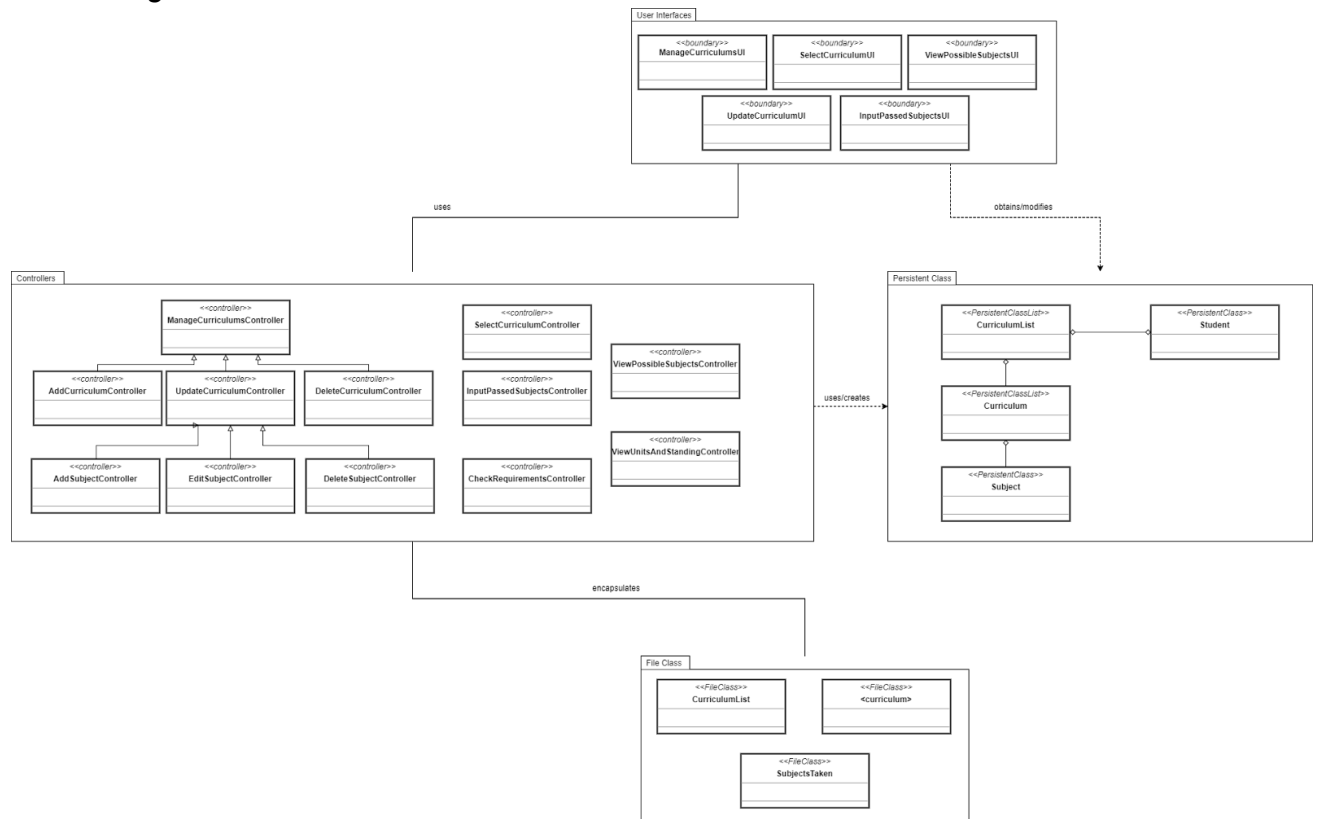
In partial fulfillment of Academic Requirements
for the course
CS 191 Software Engineering I
of the
1st Semester, AY 2017-2018

Revision Control

History Revision:

<i>Revision Date</i>	<i>Person Responsible</i>	<i>Version Number</i>	<i>Modification</i>
11/09/17	James Abaja	1.0	Initial Document; Added List of Data Sources
11/09/17	Ciana Lim	2.0	Added the Data Design Model
11/15/17	James Abaja	2.1	Edited List of Data Sources
11/17/17	Rayven Cruz	3.0	Added DAO and Transfer Object definitions
11/17/17	Ciana Lim	4.0	Edited <curriculum>.csv file format to include extra parameters.

Data Design:



Data Access Object (DAO) Classes:

Class Name	Description
ManageCurriculumsController	This is the umbrella controller for functionalities that involve adding, updating, or deleting a curriculum from the system.
AddCurriculumController	This controller is in charge of adding a new curriculum to the system, where the curriculum has its name, the number of units for each year, and a list of subjects under it.
UpdateCurriculumController	This is the umbrella controller for functionalities that involve adding, updating, or deleting a subject from the system, particularly from the curriculum. This controller is also in charge of updating the name and the number of units for each year of the curriculum.
AddSubjectController	This controller adds the subject inside the selected curriculum along with its subject code, description, units, year to be taken, and other requirements such as prerequisites and corequisites.
EditSubjectController	This controller updates all the necessary attributes of the subject that needs to be updated.
DeleteSubjectController	This controller deletes the particular subject from the system.
DeleteCurriculumController	This controller is in charge of deleting a curriculum from the system.
SelectCurriculumController	This controller is in charge of setting the curriculum that the Student user will follow.
InputPassedSubjectsController	This controller is in charge of marking the subjects that the Student user input.
CheckRequirementsController	This controller is in charge of checking which subjects the Student user can take given his/her passed subjects and updating the list of subjects that the Student user can take.
ViewPossibleSubjectsController	This controller is in charge of displaying the list of subjects that the Student user can take.
ViewUnitsAndStandingController	This controller is in charge of displaying the total number of units and the standing of the Student user.

TransferObject Classes:

Class Name	Description
Curriculum	This transfer object represents the curriculum. The Curriculum is a group of subjects for a given program. It can be identified by its name, which in this case is the year it was modified/created, and the course. It also has the number of units for each year in that curriculum, For this project, only the curriculums for the BS Computer Science program are included. A Curriculum can be added, edited, or deleted from the system.
CurriculumList	This transfer object contains all the Curricula in the system.
Subject	This transfer object represents a subject inside a particular curriculum. It has a subject code, short description, the year taken, prerequisites, corequisites, and its corresponding units. Like the Curriculum class, this can also be added, edited, and deleted.
Student	This transfer object represents a user using the system which is not the admin, i.e. the student. It has the student's selected curriculum, the total units obtained by the student from the subjects they have entered, his/her passed subjects, and the subjects that he/she can take.

List of Data Source:

Data Source Name: CurriculumList.txt

Description: CurriculumList.txt is a text file containing all curriculum names inside the system, which references to an individual csv file containing the list of subjects under that curriculum. This file can be read, written, and accessed only by the admin module.

Format: [<curriculumName>\n]*

Sample Source File:

bscs2012

bscs2014

bscs2016

Data Source Name: <curriculum>.csv

Description: <curriculum>.csv is a csv file containing the number of units for each year under that curriculum, and the list of subjects under the curriculum with <curriculum> as its name. The identifier <curriculum> is obtained from the text file CurriculumsList.txt, as discussed earlier. With regards to the subjects' prerequisites and corequisites, they are inserted at the end of the line after the integer <year>, where prerequisites are identified after commas, while corequisites are identified after colons. This file can be read, written, and accessed only by the admin module.

Format:

<units>[,<units>]*

<subjectName>,<subjectDesc>,<units>,<isJS>,<isSS>,<year>[,<prereq>]*[:<coreq>]*

Sample Source File:

34,37,40,35

CS 11,Intro to Computer Programming I,3,0,0,1:Math 17

Math 17,Algebra and Trigonometry,5,0,0,1

Math 53,Elementary Analysis I,5,0,0,1,Math 17

Math 54,Elementary Analysis II,5,0,0,2,Math 53

CS 12,Intro to Computer Programming II,3,0,0,1,CS 11

CS 21,Comp Org & Assembly Programming,4,0,0,2,CS 12

CS 30,Discrete Math for CS,3,0,0,1,Math 17

CS 32,Data Structures,3,0,0,2,CS 12

CS 135,Algo Design and Analysis,3,0,0,2,CS 30,CS 32

CS 145,Computer Networks,3,0,0,3,CS 140:CS 153

CS 191,Software Engineering I,3,1,0,3,CS 32

Data Source Name: SubjectsTaken.txt

Description: SubjectsTaken.txt is a txt file containing the subjects taken by the user, the curriculum being used, and the number of units currently passed. The main purpose of this file is for data persistency and volatility, including, but not limited to, an unexpected termination while the app is in use.

Format:

<curriculum name>

<number of units passed>

[<subjectName>\n]*

Sample Source File:

bscs2017

34

CS 11

Math 17

CS 30

CS 12

CS 21

CS 32

Math 53

Math 54

Math 55