

Course Management System Design Document

University of Western Ontario - CS 2212

Team 7

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Instructor

Kostas Kontogiannis

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1.0	7/4/2018	Maryam	more tables for class diagrams and class diagrams added

Document Sign-Off

Name (Position)	Signature	Date
Maryam Karimi	MK	8/4/2018
Fatima Hasan	FH	8/4/2018
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1 Introduction

1.1 Overview

This software design document covers the architecture of core components in the system showcasing project structure and flow.

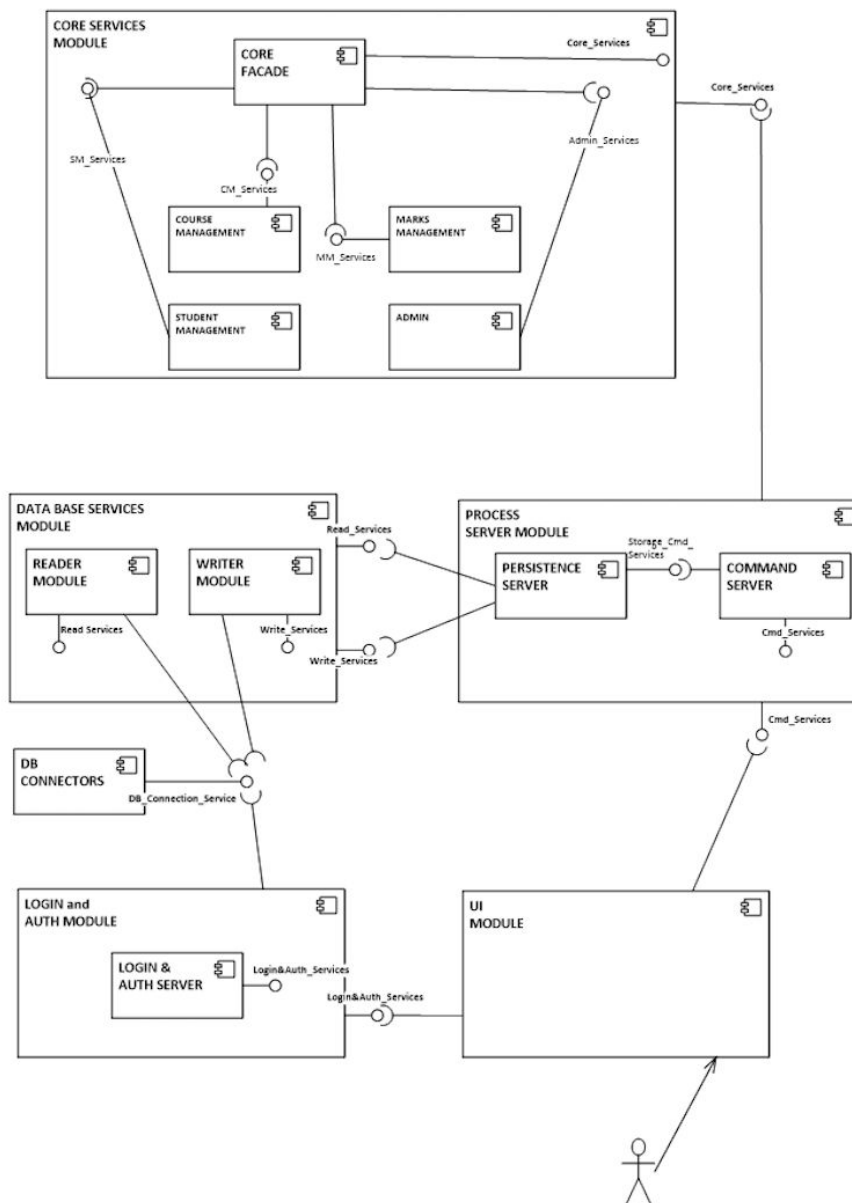
1.2 Resources - References

1. SRS for design decisions
2. Architecture Provided

2 Major Design Decisions

- Each user has his/her operations all in one class.

3 Architecture



CM_Services

Offering Factory

- Create Course Object
- Attach evaluation entities for course
- Attach evaluation strategies for course

Attach Instructor to Course

SM_Services

Enroll student in course

Print record for student

Select and change notification preference

Marks_Services

Add Mark

Final

Midtem

Assignments

Calculate Final Mark

Admin_Services

Start System

Stop System

Read course file

Login&Auth_Services

Login

Login Server

Data_Base_Services

Read from file

Write to file

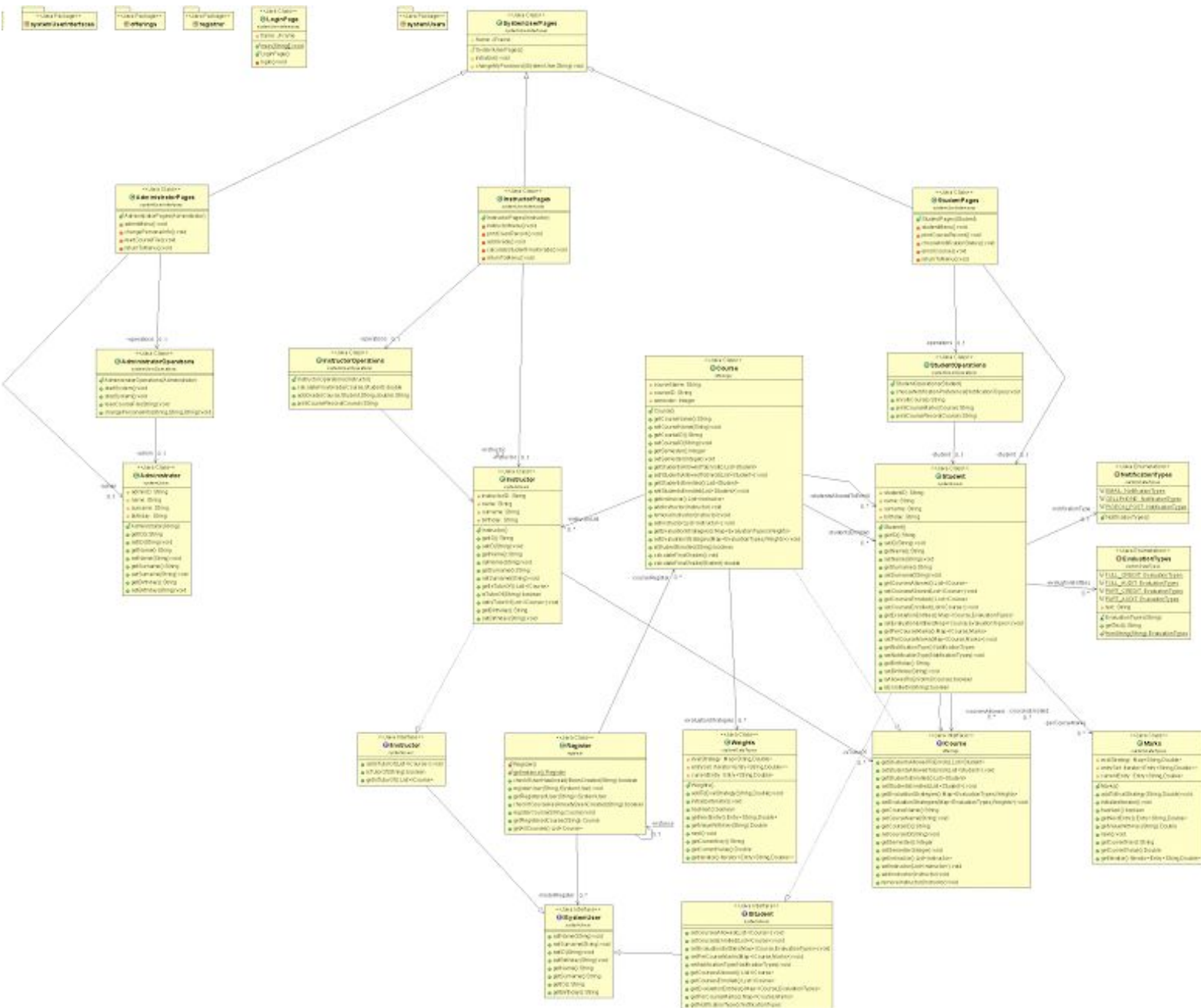
DB_Connection_Service

Read from File

Write to file

4 Detailed Class Diagrams

4.1 UML Class Diagrams



Class: System Status

get Instance	returns an instance of this class.
Start	This method moves the system into the “running” state so that users other than administrators (students and instructors) can access their operations.
Stop	This method moves the system into the “stopped” state and thus prevents users other than the admin from accessing their operations.
Is Started	Checks if the system is started or terminated.

Class: Student Operation

Enroll	This method allows a logged in student to add a class to their record (enroll in a class), only if the student is allowed to enroll in that class.
Print course marks	This method lets a logged in student print the course marks when provided with a course id.
Print course record	This method lets a logged in student to choose between one of the courses he/she is enrolled in and print its record.
Choose Notification Preference	This method allows a logged in student choose their desired notification preference.

Class: Login Server

Add user	This method adds a user to the system database (userpass.txt file and hashtables). After being added to the system, the user can login and perform operations based on his/her user type (student/ administrator/ instructor).
Encrypt	This method is used so that when the students are being added to the system or when they are logging into the system, their passwords are encrypted.
Is Valid	This method takes an ID and a password as input and checks to see if they match. It returns “dontExist” if ID is not recognized and “dontMatch” if ID and password do not match. If the ID and password match, it returns either “a”, “s”, or “i” representing the type of user that signed in.
Get Instance	This method simply returns an instance of the class login server.

Class: Administrator Operation

Change personal info	This method when invoked by the administrator allows the admin to change his/her name, surname, and date of birth.
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Start system	This method allows the administrator to start the system so that other user can use it
Stop system	This method allows the administrator to stop the system, and thus prevents anyone else from using the system
Read course file	This method allows an admin to read a course file which when a course file is read adds them to the system so that they are able to login to the system.

Class: Instructor Operation

Add Grade	This method allows an instructor to add a grade for a student when provided with a student id, course, evaluation entity, and a mark.
Calculate Final grade	This method allows an instructor to calculate the final grade for a student when provided with a course and a student.
Print Course Record	This method allows an instructor to view any course record he/she is teaching when provided with a course ID.

Class: Login Page (class for UI)

Login	This method allows any user to login to the system if they are allowed to.
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Class: Administrator Pages (class for UI)

Admin menu	This method when invoked displays the operations that an admin can perform.
Change personal info	This method when invoked calls the change personal info method in the administrator operation class
Read course file	This method when invoked calls the read course file method in the administrator operation class.
Return to menu	This method displays the operations that an admin can perform again.

Class: Student Pages (class for UI)

Student menu	This method when invoked displays the operations that a student can perform.
Print course record	The print course record method when chosen by the student calls the print course record in the student operation class.

Choose notification status	The choose notification status method calls the choose notification preference in the student operation class to allow the student choose a notification preference.
Enroll course	The enroll course method calls the enroll method in the student operation class to allow the student logged in to enroll in a course if he/she is eligible to do so.
Return to menu	This method displays the operations that a student can perform again.

Class: Instructor Pages (class for UI)

Instructor menu	This method when invoked displays the operations that an instructor can perform.
Print class record	The print class record when invoked calls the print class record method in the instructor operation class to display the record of class he/she is teaching
Add grade	The add grade method when invoked calls the add grade method in the instructor operation class to let the instructor add a grade for a student.
Modify grade	This method when invoked checks first if there is a grade added under the entity chosen by the instructor, and if there isn't it doesn't allow the instructor to modify a grade that doesn't exist, otherwise it lets the instructor modify the grade for a chosen entity and student.
Calculate student final grade	The calculate student final grade method calls the calculate final grade in the instructor operation class to let the instructor calculate the final grade if all the entities have submitted grades.
Return to menu	This method displays the operations that an instructor can perform again.

Class: System User Pages (Instructor Pages, Administrator Pages, and Student Pages extend this class)

Initialize	This method creates the frame of fixed size
Change my password	This method is the method that allows students, instructor or administrators to change their password through an interface

Class: Register (this is the same class as the one provided, but some return type names have been changed for the purposes of this project)
