SOEN 387: WebBased Enterprise Applications Design

Assignment 1

Due Date: Tuesday October 11, 2022 by 23:59

Introduction

The main objective of this assignment is to implement a web application with the three layers as follows:

- Presentation Layer (or client tier): is the application's user interface. In response to user actions, the client tier interacts with the middle tier to make requests and to retrieve data . The client tier then displays the data retrieved for the user.

- Business logic layer: enforces business rules and ensures that data is reliable before the server application updates the database or presents the data to users. Business rules dictate how clients can and cannot access application data, and how applications process data.

- Data source logic (or data tier) that maintains the application's data.

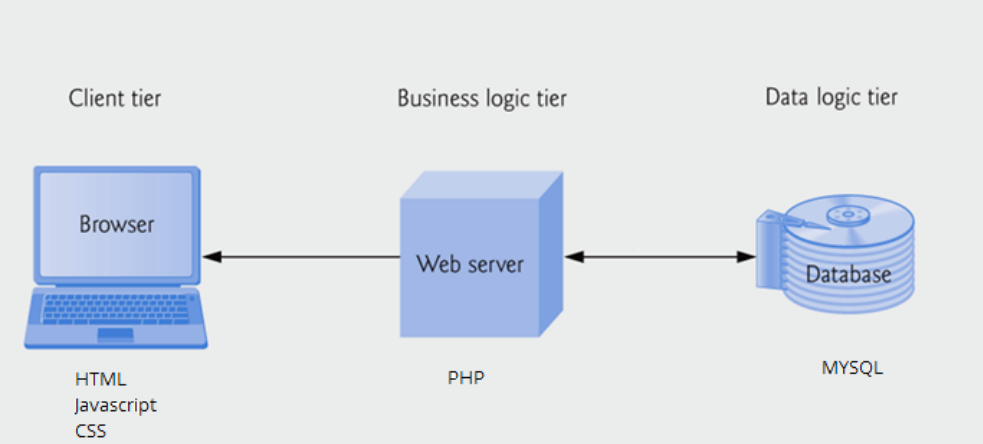

Figure 1: The general architecture of the web application

Assignment Description

In this assignment, you are required to design a web application for a local school to help students register courses online. The web application has two types of users: ***Student*** and ***Administrator***.

A ***Student*** is described by the attributes *ID, First name, Last name, Address, Email, Phone number* and *Date of Birth*. The ***Administrator*** has the attributes *Employment ID*, *First name*, *Last name*, *Address*, *Email*, *Phone number* and *Date of Birth*.

Requirements

In your assignment you must implement the web application as follows:

- In the presentation layer you implement the user interface with HTML 5 and JavaScript. The JavaScript code must check if the input is valid before sending a **POST** request to the server.
- The Business logic must be implemented in PHP and is designed as follows:
  - The student ID must be unique for each student.
  - A student may register in up to 5 courses per semester. The course has the following attributes: *Course code, title, semester, days, time, instructor, room,* and *start* and *end date*.
  - A student can add a course up to one week after the start of the semester and can drop a course any time before the end of the semester.
  - The *Employment ID* must be unique for each administrator
  - The administrator must be able to create a course
  - The administrator needs two reports. The first report is a list of students in a certain course and the second report is list of courses taken by a certain student.
- Data Logic Layer: In this layer you must design the Database tables using MYSQL. Details on how to create tables will be provided in the tutorial session. The tables must be well designed to:
  - Reduce redundancy of data
  - Ensure the accuracy and integrity of your data.
  - Accommodate the application needs to generate all required queries.

Each team may use GitHub or an alternative source control during development phase. Using a source control software is mandatory.

Assignment Submission

You are allowed to work on a team of 4 students at most (including yourself). Each team should designate a leader who will submit the assignment electronically on Moodle. ONLY one copy of the assignment is to be submitted by the team leader. Upon submission, you must book an appointment with the marker team and demo the assignment. All members of the team must be present during the demo to receive the credit. Failure to do so may result in zero credit.

This is an assessment exercise. You may not seek any assistance from others while expecting to receive credit. You must work strictly within your team). Failure to do so will result in penalties or no credit.

Grading Scheme

The assignment is graded based on the following rubric:

CATEGORY	very Poor(1)	Poor(2)	Good(3)	Very Good(4)	Exceptional(5)
Presentation Layer(**client side**)	User interface does not work	User interface is poorly formatted and/or Javascript code is poorly design	User interface is formatted and the Javscript is designed but improvements are needed	User interface is well formatted and the Javscript is well designed	Exceptional clinet side
Business Logic (***Student***)	None of the business logic requirements related to the user ***Student*** are implemented	Implemented but with major improvements needed	Implemented but with minor improvements needed .	Implemented as per the requirements	Exceptional Business logic design
Business Logic (***Administrator***)	None of the business logic requirements related to the user ***Administrator*** are implemented	Implemented but with major improvements needed	Implemented but with minor improvements needed .	Implemented as per the requirements	Exceptional Business logic design
Data Logic (**Tables**)	No Database	Database tables are poorly designed	Database tables are designed but improvements are needed	Database tables are well designed	Exceptional design
Data logic (**SQL**)	No SQL queries	Majority of the SQL queries donot work	SQL queries work but improvements are needed	SQL quaries work as per the requirements	Exceptional SQL code

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