Assignment 2

User Authentication Mechanism (15%)

DUE DATE

Session 9

OBJECTIVE

- Develop a small PHP application
- Follow an application design concept
- Develop an ER diagram
- Develop a data flow diagram
- Design web pages
- Implement secure authentication
- Write an installation routine
- Create a database using PHP
- Create tables and populate tables using PHP
- Create queries to search in the database using PHP
- Display query results using PHP

DESCRIPTION

User authentication is very common in modern web application. It is a security mechanism that is used to restrict unauthorized access to member- only areas and tools on a site.

INSTRUCTIONS

In this assignment, you will create a simple registration and login system using the PHP and MySQL. You will create a login form, for the users to enter their username and password, which will be matched with the saved ones in the database and will display a welcome message if the user wrote the right credentials.

If the login fails, give an option to Register. You will design and implement the registration process through a registration form. It is recommended that you follow a Role-Based Access Control model to design and implement this authentication mechanism.

1. Entity Relation Diagram

Your implementation must be based on your ERD design document. Identify all necessary tables, fields, and their relationship using a data dictionary and an ER Diagram. Your entity relation documentation will have to be submitted as part of the assignment submission

2. Data Flow Diagram

Capture the flow of the Registrations and authentication process in a data flow diagram. Each line of process in the diagram should come with a paragraph describing the process along with the input and out of the process. Your data control flow documentation will have to be submitted as part of the final assignment submission.

3. Implementation

In your implementation you must follow the following programming principles.

Object Oriented Design

You must design your project using objects. For every entity in your ER diagram, you must create a class along with appropriate properties. Your classes must have constructor and destructor methods. Your class design must include setter and getter methods for each property. For all of the operations and controls in your data control flow diagram, you must create appropriate methods or classes to facilitate the transactions.

Model-View-Control (MVC) design

You must separate your data model object from the view object and control objects and facilitate a communication mechanism between all of them. All of the design documents for your MVC principle must be submitted as part of the assignment submission.

Data model

You must implement your data model for MySQL database system. You should also implement the database construction, table definition, view definitions, and stored procedures from scratch using the classes during the installation process. For initial installation purposes, you will have to use a text file called “settings.config”. use this file to capture the required information to connect to the MySQL database. You must assume that the installation is done on a MySQL database.

Additionally, all database transactions must be performed by classes in the data model.

View

Rendering of all forms, web pages, and message dialogues must be implemented using classes in the view model of the application.

Control

All application transaction associated with buttons, menus, hyperlinks, and actions must be

captured by classes in the control model of your application.

SUBMISSION INSTRUCTIONS

Your submission must include:

1. Word/PDF Documents explaining different steps of your design and implementation.
2. The source code of your program.
3. One index.php file capturing the application description and design. This page will also include 2 buttons linked to Registration form and login form. You must also include an "install.php" file to perform the creating of the database and transferring the application file structure to the local machine.
4. To receive a mark, the application must install and work properly.
5. Place the entire directory structure in a single folder.
6. Zip the folder and submit a single zip file with all your work in the submission page for this assignment.

Work must be submitted in the correct file type and be properly labelled as per the College naming convention:
NAME_COURSE_ASSIGNMENT. E.g. XuXiaLing_FM50D_A01.

GRADING CRITERIA

Assignment Value: **15%**

Grading Criteria	Grading
ERD document	/10
Data Flow Diagram document	/10
OOP Implementation documents	/15
Implementation – Model class documents	/20
Implementation – View class documents	/20
Implementation – Control class documents	/20
Installation Process works	/5
Registration Process works	/5
Login Process works	/5
TOTAL	**/100**