

PHP MYSQL PRACTICAL

Suppose you are building a web application for a to-do list that allows users to manage their tasks. The application must allow users to log in and track their tasks using sessions. The application must also allow users to perform CRUD (Create, Read, Update, Delete) operations on their tasks using a flat file database.

Write a PHP script that implements the following features:

1. **User Login:** Allow users to log in using a form that sends a POST request to the server. Store user information (such as username and password) in a flat file database and validate the user's credentials. If the user is authenticated, start a session and store the user ID in a session variable.
2. **Task Management:** Once a user is logged in, allow them to manage their tasks using CRUD operations. Store task data (such as task name, description, and due date) in database. Implement CRUD operations for adding, updating, and deleting tasks in the database.
3. **Task List:** Display a list of tasks for the logged-in user, including task name, description, due date, and completion status.
4. **Search:** Implement a search feature that allows users to search for tasks by name, description, or due date.
5. **Task Details:** When a user clicks on a task in the list, display the task details, including the task name, description, due date, and completion status. Allow users to mark tasks as completed or uncompleted.
6. **Logout:** Allow users to log out of the application, destroying their session.

Your PHP script should be well-documented and organized, with clear separation of concerns between different modules (such as authentication and task management).

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DATABASE SCHEMA:

```
CREATE TABLE `users` (  
  `id` int(11) NOT NULL AUTO_INCREMENT,  
  `username` varchar(255) NOT NULL,  
  `password` varchar(255) NOT NULL,  
  PRIMARY KEY (`id`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
CREATE TABLE `tasks` (  
  `id` int(11) NOT NULL AUTO_INCREMENT,  
  `user_id` int(11) NOT NULL,  
  `name` varchar(255) NOT NULL,  
  `description` text,  
  `due_date` date,  
  `completed` tinyint(1) NOT NULL DEFAULT '0',  
  PRIMARY KEY (`id`),  
  KEY `user_id` (`user_id`),  
  CONSTRAINT `tasks_ibfk_1` FOREIGN KEY (`user_id`) REFERENCES `users` (`id`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

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DESCRIPTION:

USER TABLE:

The users table stores user information, including an auto-incrementing ID, username, and password.

TASK TABLE:

The tasks table stores task information, including an auto-incrementing ID, user ID (which references the id column in the users table), task name, description, due date, and completion status. The completed column is a tinyint field that stores either 0 (for incomplete tasks) or 1 (for completed tasks).

Note: that the tasks table includes a foreign key constraint that references the id column in the users table. This ensures that tasks can only be associated with existing users in the users table.