

Intern Software Engineer - Task Sheet (CodeIgniter 3 & MySQL)

Objective:

Evaluate the intern's understanding of **CodeIgniter 3 (PHP framework)** and **MySQL** by completing the following tasks. The intern should demonstrate proficiency in MVC architecture, database operations, form validation, and basic security practices.

Task 1: Environment Setup & Basic Configuration (1 hour)

Requirements:

- Set up a fresh **CodeIgniter 3** project.
- Configure application/config/database.php for MySQL connection.
- Create a MySQL database named intern_eval_db.

Expected Deliverables:

- A working CodeIgniter 3 installation.
- A configured database.php file with correct MySQL settings.
- A MySQL database ready for use.

Task 2: Create a Simple CRUD Application (3-4 hours)

Requirements:

- Create a "**Books**" module with:
 - **Model:** Book_model.php (with get_books(), insert_book(), update_book(), delete_book() methods).
 - **Controller:** Books.php (with index(), add(), edit(), delete() methods).
 - **Views:**
 - books_list.php (Display all books in a table with edit/delete options).
 - book_form.php (Add/Edit book form).
- Database table books structure:

sql

```
CREATE TABLE `books` (
```

```

`id` INT AUTO_INCREMENT PRIMARY KEY,
`title` VARCHAR(100) NOT NULL,
`author` VARCHAR(100) NOT NULL,
`published_date` DATE,
`isbn` VARCHAR(20),
`created_at` TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);

```

- Implement **form validation** (using CodeIgniter's form_validation library).
- Add **pagination** to the book listing.

Expected Deliverables:

- A fully functional **CRUD** for books.
- Proper server-side validation.
- Pagination in the listing page.

Task 3: Implement User Authentication (2-3 hours)

Requirements:

- Create a **User** model (User_model.php) with:
 - get_user(), insert_user(), verify_login() methods.
- Database table users structure:

```
sql
```

```

CREATE TABLE `users` (
`id` INT AUTO_INCREMENT PRIMARY KEY,
`username` VARCHAR(50) NOT NULL UNIQUE,
`email` VARCHAR(100) NOT NULL UNIQUE,
`password` VARCHAR(255) NOT NULL, -- Store hashed passwords
`created_at` TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);

```
- Implement:
 - **Registration** (with password hashing using password_hash()).
 - **Login** (with session management).
 - **Logout** functionality.
- Secure pages so that only logged-in users can access the **Books** module.

Expected Deliverables:

- A working **login/registration** system.
- Session-based access control.
- Password hashing for security.

Evaluation Criteria:

- ✓ **Code Structure** (MVC separation, clean code)
- ✓ **Functionality** (CRUD, validation, security)
- ✓ **Database Skills** (Proper queries, table structure)
- ✓ **Error Handling** (Form validation, SQL errors)

Notes for the Intern:

- Use **CodeIgniter 3 Documentation** for reference.
- Follow best practices (e.g., **prepared statements** for SQL queries).
- Comment your code where necessary.

Time Given: ~6-8 hours.