



Ramon Magsaysay Memorial College

LABORATORY EXERCISE
2ND SEMESTER: AY: 2024 – 2025



Name: Jela Jeminez, Leo Alberca, Mia Esyong Schedule: 10:00 am - 1:00 pm Score: _____
Subject: IPT 101 Instructor: Sir Jim Jamero Date: 3/5/2025

LABORATORY EXERCISE 3

SYSTEM DEVELOPMENT BASED ON PROTOTYPE – LOGIN AND DASHBOARD IMPLEMENTATION

Learning Objectives

By the end of this laboratory exercise, students should be able to:

- Implement a login system based on the approved prototype and system design.
- Develop a dashboard interface that meets functional and user experience requirements.
- Integrate user authentication and session management into the system.
- Apply basic security measures such as input validation and password hashing.
- Conduct testing and debugging to refine system functionality.
- Present and document the developed system with supporting screenshots and explanations.

Prerequisite student experiences and knowledge

Students should have a foundational knowledge of System prototyping and workflow design. Database design and entity-relationship diagrams (ERD). Programming fundamentals in PHP, Laravel, Python, or other programming languages, as well as session management and user authentication principles.

Background

A functional system prototype is a crucial step in system development, allowing developers to test and refine key functionalities. The login system and dashboard serve as users' entry points and control centers, requiring proper authentication and navigation design. Adequate security measures must be implemented to protect user credentials and data integrity.

Materials/Resources

- PC/Internet
- PC with an Internet connection
- Development environment (XAMPP, WAMP, Laravel Homestead, or equivalent)
- Code editor (VS Code, Sublime Text, PHPStorm, or others)
- Database system (MySQL, PostgreSQL)
- Wireframing tool (Figma, Balsamiq, Lucidchart, or others)

Laboratory Activity

1. Review of Prototype and System Design

- ✓ Open and review your approved system prototype from previous exercises.
- ✓ Identify the login system workflow and dashboard structure.



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- ✓ Ensure that the database schema supports user authentication and role-based access.

2. Prototyping Phase

✓ Wireframe and UI Design

- Create a low-fidelity wireframe of the login page and dashboard using:
- Figma, Balsamiq, Lucidchart, or hand-drawn sketches or other tools.
- Define the user flow and navigation between components.

✓ Database Schema Setup

- Create a user table with the following fields: **user_id**, **username**, **email**, **password**, **role**, **created_at**
- Insert sample users:

```
INSERT INTO users (username, email,
password_hash, role) VALUES
('admin', 'admin@example.com', SHA2
('password123', 256), 'admin'),
('user1', 'user1@example.com', SHA2('userpass',
256), 'user');
```

3. System Implementation

a) Login System Implementation

- ✓ Create a login form
- ✓ Handle login logic

b) Dashboard Implementation

- ✓ Create a **dashboard page** with dynamic content based on user roles

4. Testing and Debugging

- ✓ Conduct unit testing for login validation, session management, and redirections
- ✓ Test invalid inputs (e.g., Invalid Username/Password, empty fields).
- ✓ Verify database interactions and ensure the password is hashed and stored correctly.

5. Documentation and Submission

- ✓ Prepare a **report** including the following:
 - Screenshots of the login and dashboard of your group works
 - Database schema diagram
 - Code snippets for authentication and session management.
 - Challenges encountered and solutions applied.

6. Submission Guidelines

- ✓ Submit
 - The source code must be in GitHub with a movement of version controls and include the following:
 1. Database dump (.sql file)
 2. Prototype screenshots



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3. Documentation report (PDF format).

Results/Output (At least two samples)

SAMPLES

The screenshot shows the phpMyAdmin web interface. The browser address bar indicates the URL: localhost/phpmyadmin/index.php?route=/sql&pos=0&db=fms&table=users. The interface displays the 'users' table structure and data. The table has the following columns: user_id, username, email, password_hash, role, and created_at. Two rows of data are shown: an 'admin' user with email 'admin@example.com' and password 'password123', and a 'user' with email 'user@example.com' and password 'userpass'. The interface also includes a sidebar with a database tree, a top navigation bar with various tools like Browse, Structure, SQL, Search, Insert, Export, Import, Privileges, Operations, and Triggers, and a bottom console area.

user_id	username	email	password_hash	role	created_at
admin	admin	admin@example.com	password123	admin	
user	user	user@example.com	userpass	user	



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FITNESS

STUDIO

Ramon Magsaysay Memorial Colleges

General Santos City



Username/Email

Password

☒ Show Password

Login

[Forget Password](#)

[Register](#)



FITNESS

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Invalid username or password.

Username/Email

Password

☐ Show Password

Login

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Browser tabs: (15) [playlist] A... Lab 3: SYSTEM DEVE... LABORATORY EXERC... DeepSeek - Into the... localhost / 127.0.0.1... FITNESS-MANAGEM... Login

Address bar: localhost/FMS/index1(login.php)




FITNESS

STUDIO

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General Santos City



Invalid username or password.

Username/Email

Password

☒ Show Password


Login

[Forget Password](#)
[Register](#)

Taskbar: Search, File Explorer, Edge, Word, PowerPoint, Teams, OneDrive, Outlook, Chrome, Firefox, VLC, Audacity, Zoom, Discord, Slack, WhatsApp, Telegram, Signal, Messenger, Email, Calendar, Photos, Music, Settings, System Tray: ENG US, 10:14 PM 5/17/2025

Browser tabs: Login

Address bar: localhost/FMS/index1(login.php)



FITNESS

STUDIO

Ramon Magsaysay Memorial Colleges

General Santos City



Login successful! Redirecting...

Username/Email

Password

☐ Show Password

Login

[Forget Password](#)
[Register](#)

Taskbar: Search, File Explorer, Edge, Word, PowerPoint, Teams, OneDrive, Outlook, Chrome, Firefox, VLC, Audacity, Zoom, Discord, Slack, WhatsApp, Telegram, Signal, Messenger, Email, Calendar, Photos, Music, Settings, System Tray: ENG US, 10:15 PM 5/17/2025

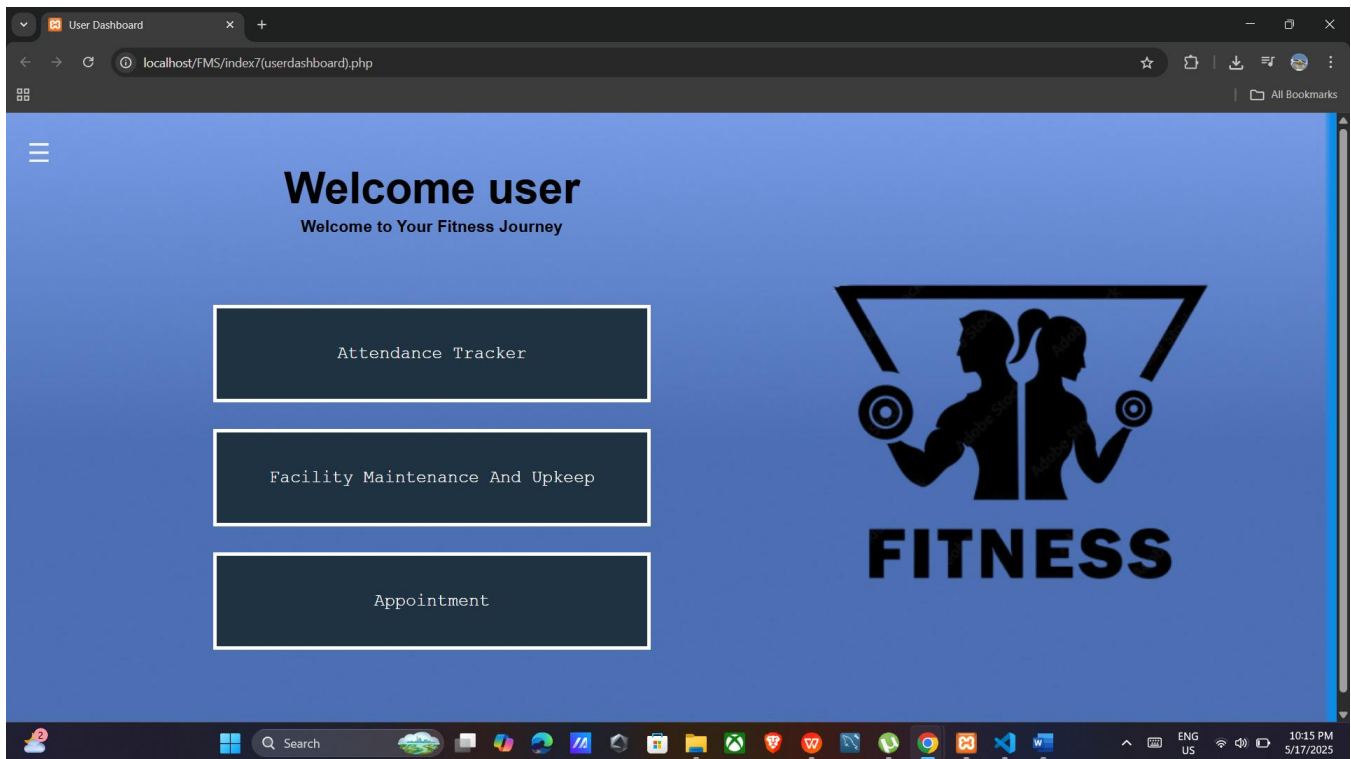


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Conclusion

In this activity, we created a login system and a dashboard based on our prototype. The login system allows users to sign in securely, and the dashboard changes based on user roles. We learned how to set up the email authentication process and differentiate user types such as students, teachers/instructors, and staff/others. Each user role has specific functionalities, such as attendance tracking, facility maintenance requests, and appointment scheduling.

Through this process, we encountered challenges, such as defining our target users and ensuring that all features function properly. To address these, we refined our ideas and carefully structured the system to enhance usability and efficiency.