UNIVERSITI TEKNOLOGI MARA

FACULTY OF INFORMATION SCIENCE

COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS

Bachelor Of Information Science (Hons.) Information Systems Management

ADVANCED WEB DESIGN DEVELOPMENT AND CONTENT MANAGEMENT (IMS566)

UITM PUNCAK PERDANA LOST & FOUND SYSTEM

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1.0 INTRODUCTION

In this project, the design and development of a full-fledged web-based Lost and Find Management System in the UiTM Puncak Perdana campus is involved. The system converts the old system, which is paper-based, of reporting and reclaiming lost items into an efficient, secure and easy to use online platform. The main aim is to simplify the process of work of students, staff, and administrative staff due to the provision of a centralized platform on which the users can submit reports about lost items, enlist indexable found objects, seek matches and process claims using electronic tools. The application is developed based on the CakePHP framework and MySQL database, and it supports the full CRUD (Create, Read, Update, Delete) operations, user authentication, responsive design, and data export. By applying the principles of web development and database management to address a real problem in the administrative field, along with the focus on teamwork and systematic documentation and adherence to software engineering best practices, this project satisfies the academic requirements of the IMS566 course.

2.0 GITHUB REPOSITORY LINK

The entire code of this Lost and Found System is available in a publicly available GitHub repository. This is a repository that comprises all application files including CakePHP framework setup, database schema, controllers, views, models, assets and documentation. The codebase is structured, well-documented and best practices of version control, which enables transparency and collaborative development and can be deployed with ease.

- https://github.com/yasinazman/lfsuitmpp.git

3.0 ENTITY-RELATIONSHIP DIAGRAM (ERD)

test admins
- id : int
- username : varchar(50)
- password : varchar(255)
- full_name : varchar(100)
- created : datetime
- modified : datetime

test found_reports
- id : int
- item_name : varchar(100)
- category : varchar(50)
- description : text
- found_location : varchar(100)
- found_date : date
- finder_name : varchar(100)
- finder_contact : varchar(20)
- finder_matrix_id : varchar(20)
- image_file : varchar(255)
- status : varchar(20)
- claimer_name : varchar(255)
- claimer_matrix_id : varchar(50)
- claimer_contact : varchar(50)
- claimed_date : datetime
- created : datetime
- modified : datetime

test lost_reports
- id : int
- item_name : varchar(100)
- category : varchar(50)
- description : text
- last_seen_location : varchar(100)
- lost_date : date
- reporter_name : varchar(100)
- reporter_contact : varchar(20)
- reporter_matrix_id : varchar(20)
- image_file : varchar(255)
- status : varchar(20)
- claimer_name : varchar(255)
- claimer_matrix_id : varchar(50)
- claimer_contact : varchar(50)
- claimed_date : datetime
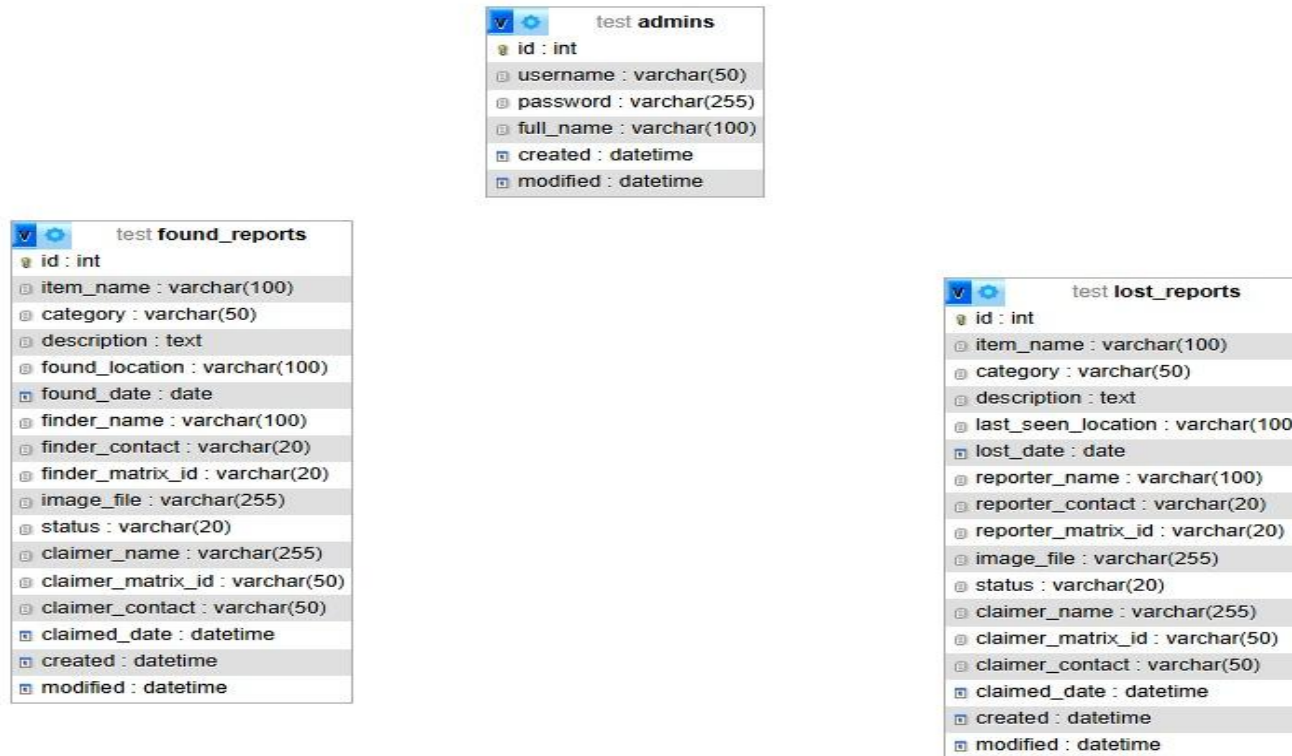- created : datetime
- modified : datetime

Figure 1: ERD of Lost & Found System Management

4.0 SYSTEM REQUIREMENTS

Software:

- **Operating System**: Windows 10/11, macOS 10.14+, or Linux
- **Web Server**: Apache 2.4+
- **PHP**: Version 8.1.0 or higher
- **Database**: MySQL 8.0.30+ or MariaDB 10.6+
- **Composer**: Version 2.5+
- **Git**: Version 2.35+

Version Compatibility:

Table 1: Version Compatibility

Component	Minimum version	Recommended version
PHP	8.1.0	8.4.16
MySQL	8.0.30	8.1.0
CakePHP	5.2.0	5.2.5
Apache	2.4.41	2.4.58
Composer	2.5.0	2.7.0

Browser Requirement:

- **Primary**: Google Chrome

- **Supported**: Firefox, Microsoft Edge, Safari

- **JavaScript**: Must be enabled

- **Cookies**: Must be enabled for session management

Device Compatibility:

- Desktop/Laptop
- Tablet
- Smartphone

5.0 USER INTERFACE OVERVIEW

Structure Layout:

A. Public User Interface:

- **Header**: Displays system title "UITM PUNCAK PERDANA Lost & Found" with branding

- **Main Navigation**: Clear option selection between "I Lost Something" and "I Found Something"

- **Content Area**: Dynamic display of galleries, forms, or search results

- **Footer**: Copyright information and system details

B. Admin Interface:

- **Sidebar Navigation**: Persistent left-side menu with:

    - Dashboard overview
    - Lost Items management
    - Found Items management
    - Claimed Items history
    - Report Analysis (Monthly/Weekly stats)
    - Logout option

- **Main Dashboard**: Central panel showing statistics, charts, and pending actions

- **Header**: Welcome message with admin name and date
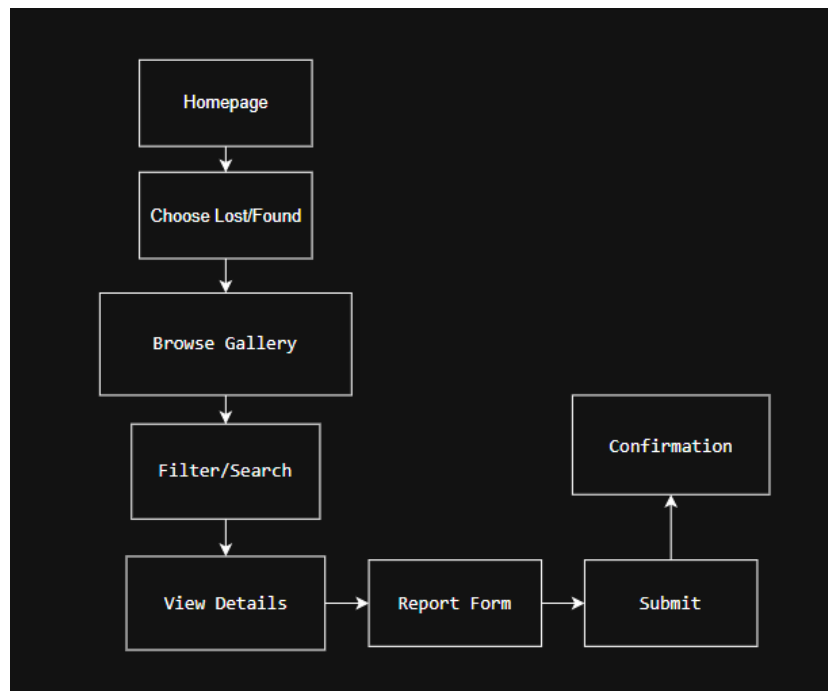
Navigation Flow:

A. User Navigation

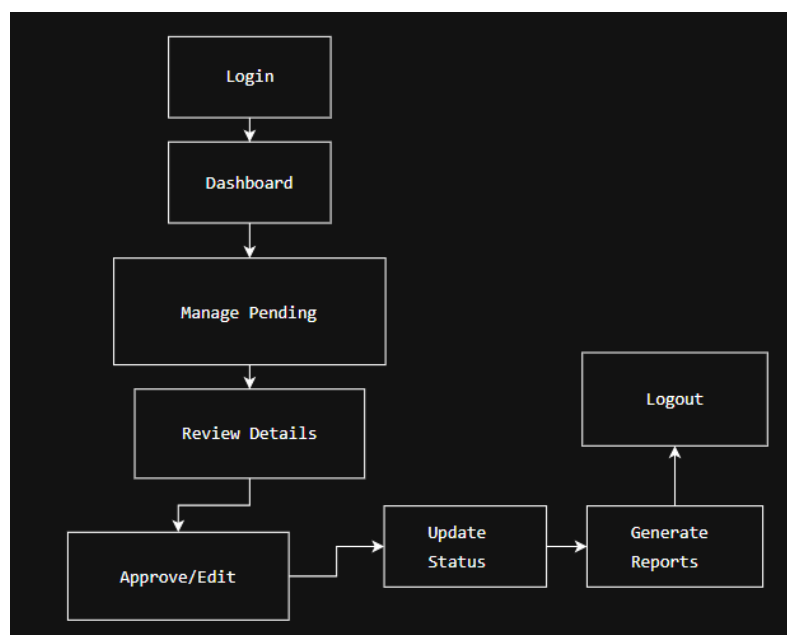*Figure 2 :User Journey*

B. Admin Navigation

Figure 3: Admin Journey

6.0 FEATURES & FUNCTIONALITIES

1. CORE FEATURES (PROJECT REQUIREMENTS)

A. Authentication System:

- **Admin Login/Logout**: Secure authentication using CakePHP's Authentication plugin

- **Password Security**: Hashed passwords (bcrypt) as shown in database dump

- **Session Management**: Protected admin routes and automatic session timeout

- **Public Access**: No login required for reporting/viewing items

B. Complete CRUD Operations:

- **Create**: Report lost/found items through user-friendly forms

- **Read**: Browse galleries, view detailed item information

- **Update**: Admin can edit item details and update status

- **Delete**: Remove resolved or duplicate reports (admin-only)

C. Search & Filter System:

- **Category Filtering**: Electronics, Personal, Wallet/Bag, Documents, Others

- **Location Filtering**: Library, Cafeteria, Sports Complex, etc.

- **Text Search**: Search by item name or description

- **Status Filtering**: Filter by Pending, Found, Lost, Claimed status

- **Date Range**: Filter by report date

D. Data Export Functionality:

- **PDF Generation**: Export item reports using DomPDF library

- **Complete Details**: Includes item info, photos, contact details

- **Timestamped**: Automatic generation date/time on PDFs

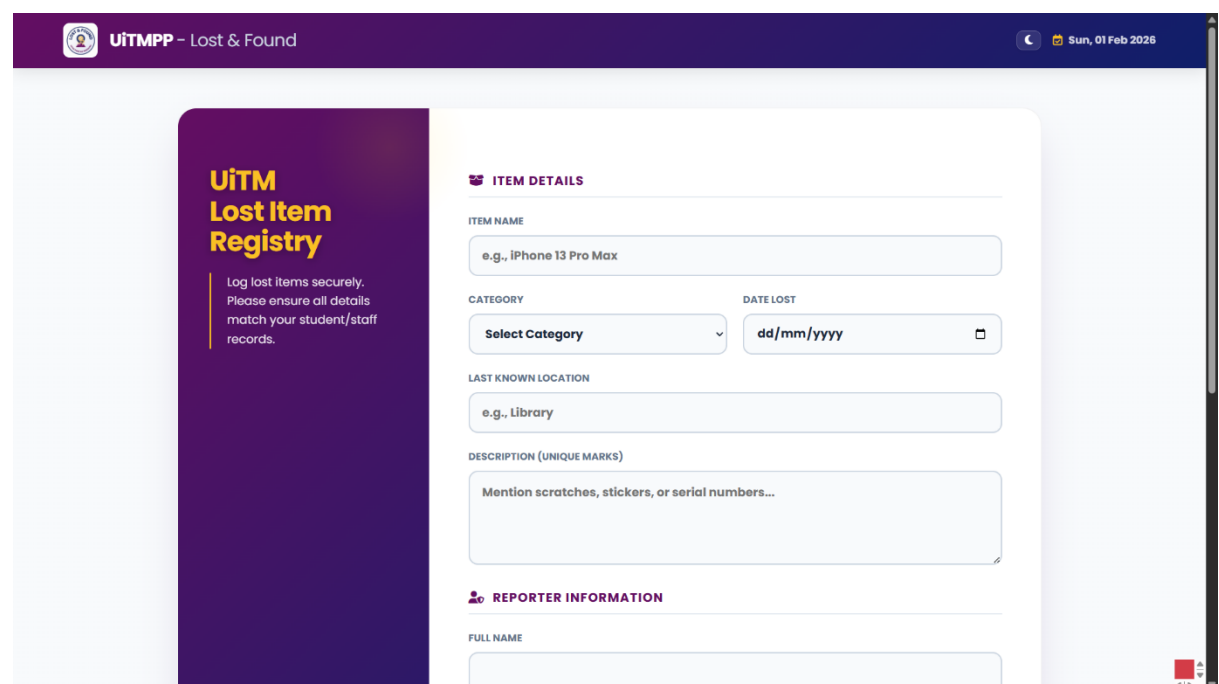- **Professional Format**: Institutional branding and layout

E. Responsive Design:

- **Mobile-First Approach**: Works on smartphones, tablets, desktops

- **CSS Framework**: Bootstrap/Tailwind implementation

- **Adaptive Layout**: Different views for different screen sizes

- **Touch Optimization**: Mobile-friendly buttons and forms

2. PUBLIC USER FUNCTIONALITIES

A. Lost Item Reporting:

- **Form Interface**:

Figure 4: Report lost item form

- **Required Fields**: Item name, category, last seen location, date

- **Optional Details**: Description, unique marks, serial numbers

- **Photo Upload**: Evidence photo attachment

- **Reporter Info**: Name, Matrix ID, contact number

- **CAPTCHA Protection**: Security verification on submission

- **Confirmation**: Success message after submission

B. Found Item Reporting:

- **Similar Structure**: Parallel to lost item reporting

- **Finder Information**: Name, ID, contact details

- **Found Details**: Location, date, description

- **Image Upload**: Photo of found item

- **Security**: CAPTCHA-protected submission
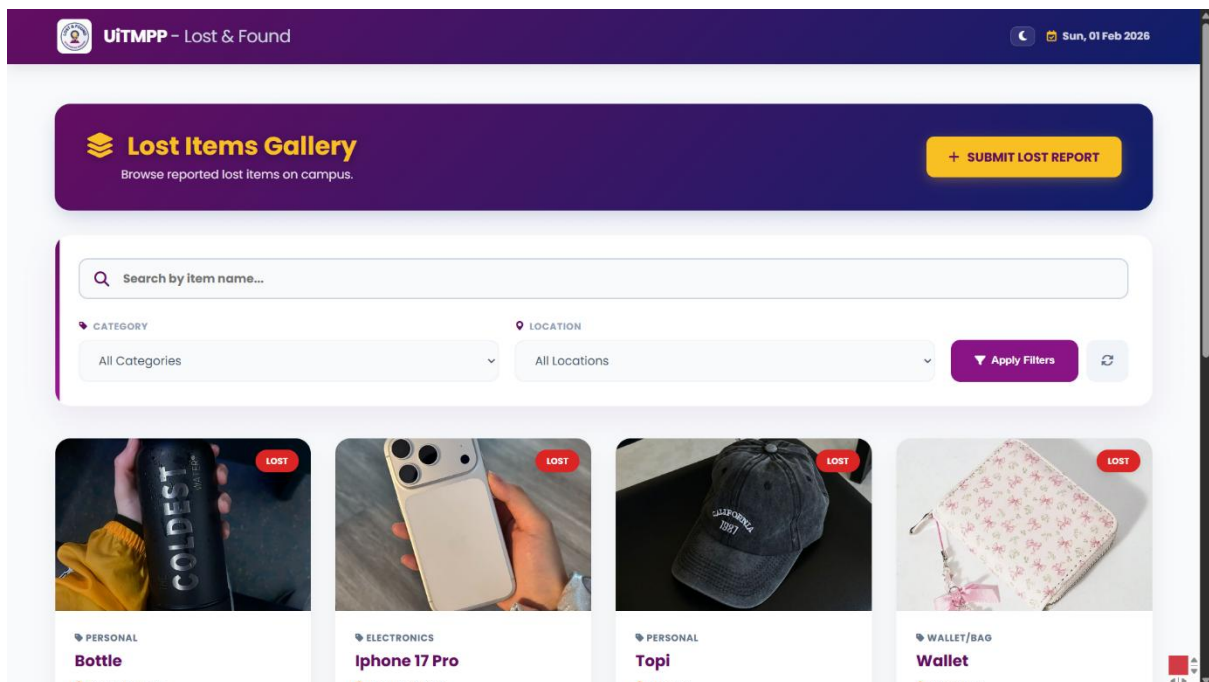
C. Item Galleries:

- **Lost Items Gallery**:
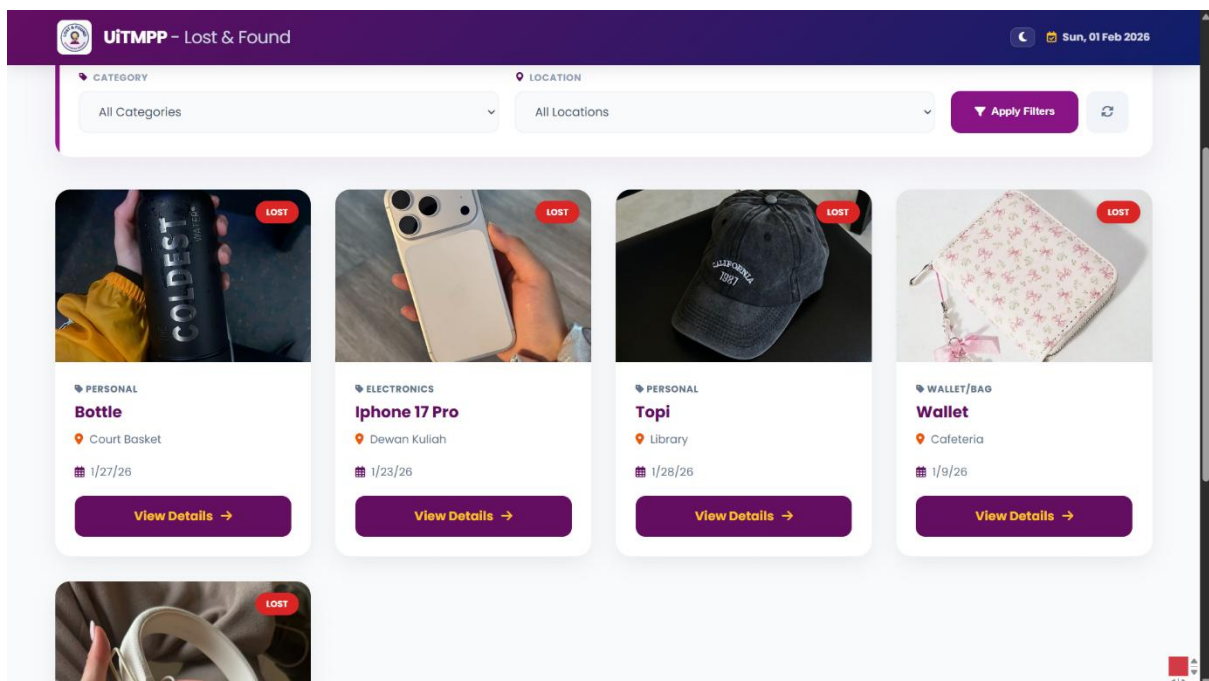

Figure 5: Figure 5: Dashboard

Figure 6: Detail item report
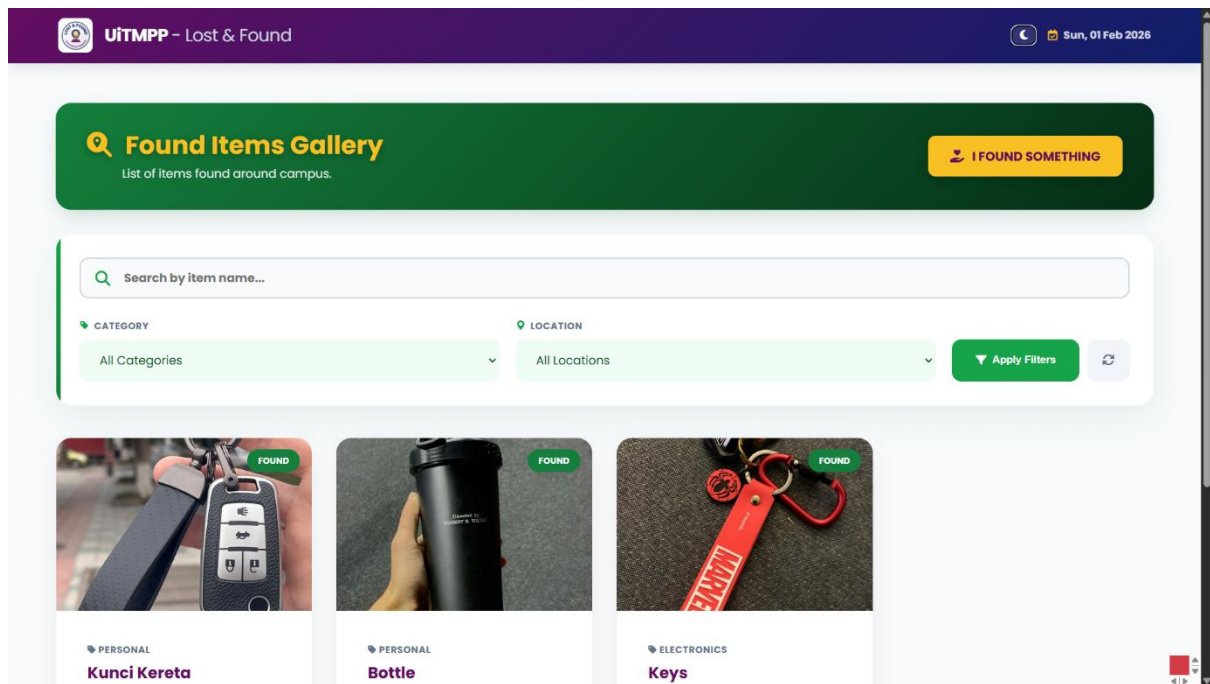
- **Found Items Gallery**:

Figure 7: Found item dashboard

- **Card Display**: Visual presentation with images

- **Quick View**: Essential details at a glance

- **Detailed View**: Click through for complete information

- **Pagination**: Navigation for multiple pages of results

D. Search & Discovery:
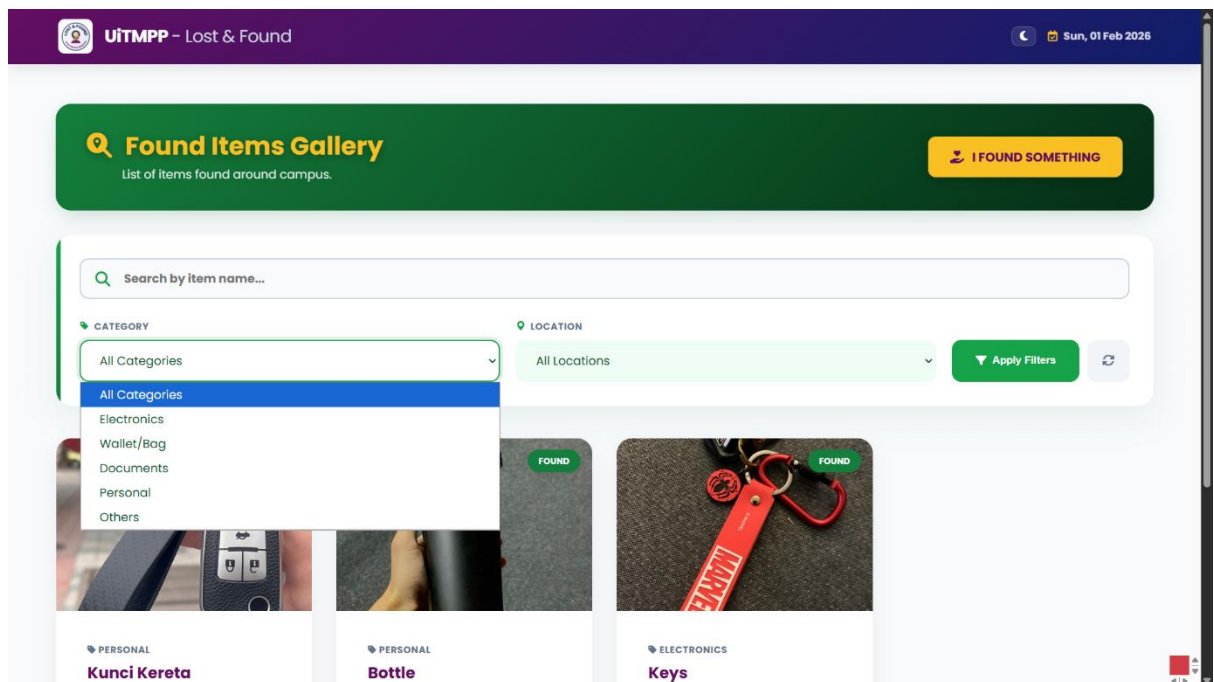
- **Advanced Filters**:

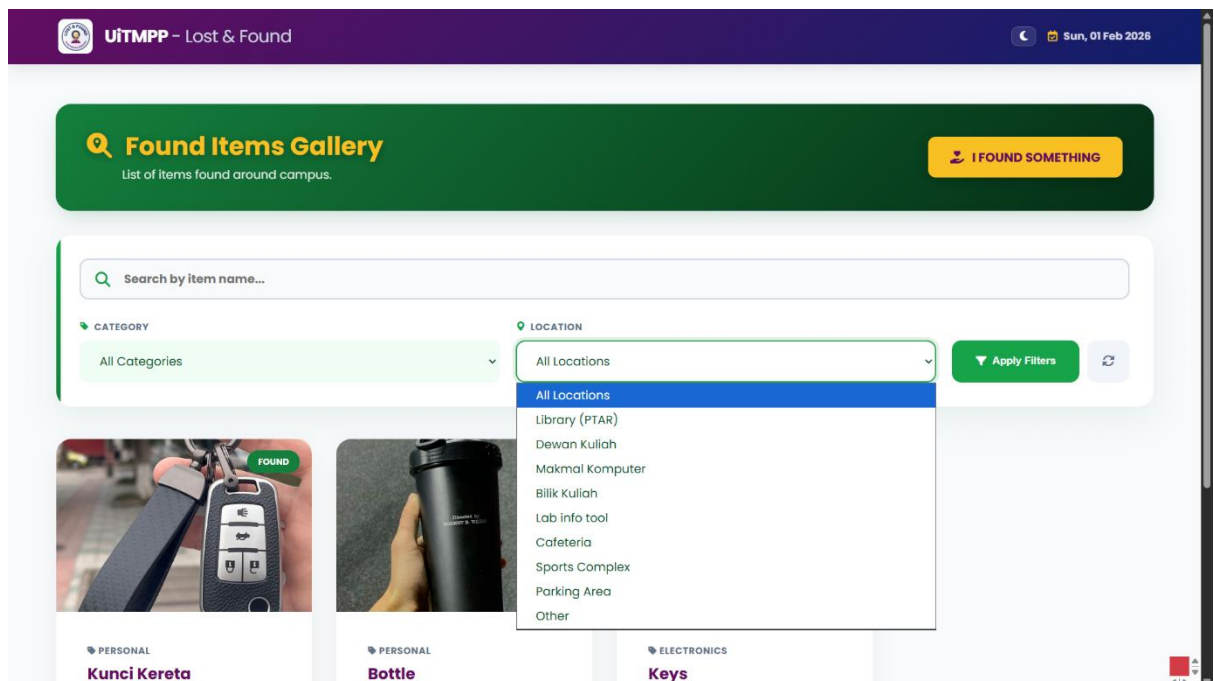*Figure 8: Search by category feature*

Figure 9: Search by location feature

- **Real-time Results**: Dynamic filtering without page reload

- **Combined Filters**: Multiple filter criteria simultaneously

- **Clear Navigation**: Easy reset and back options

E. Item Details View:
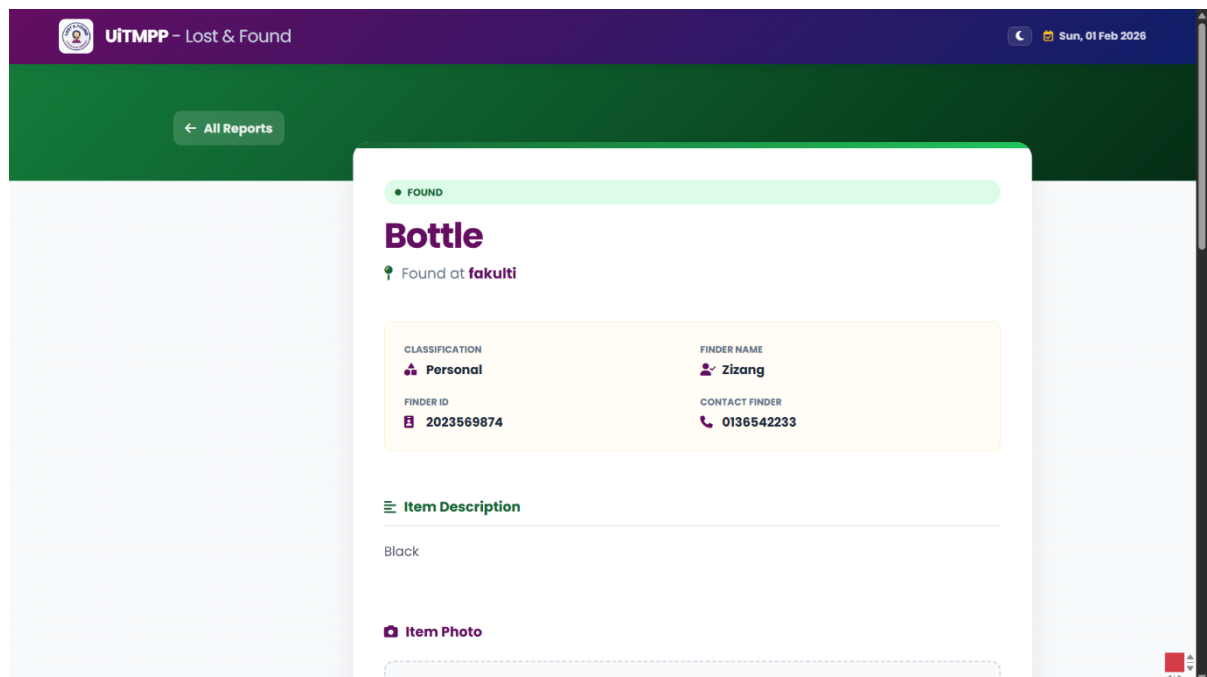
- **Comprehensive Display**:

Figure 10: View item report

- **All Information**: Complete item details and photos

- **Contact Protection**: Limited contact info for privacy

- **Status Indication**: Clear visual status indicators

- **Related Items**: Suggestions for similar items

A. Dashboard Overview:
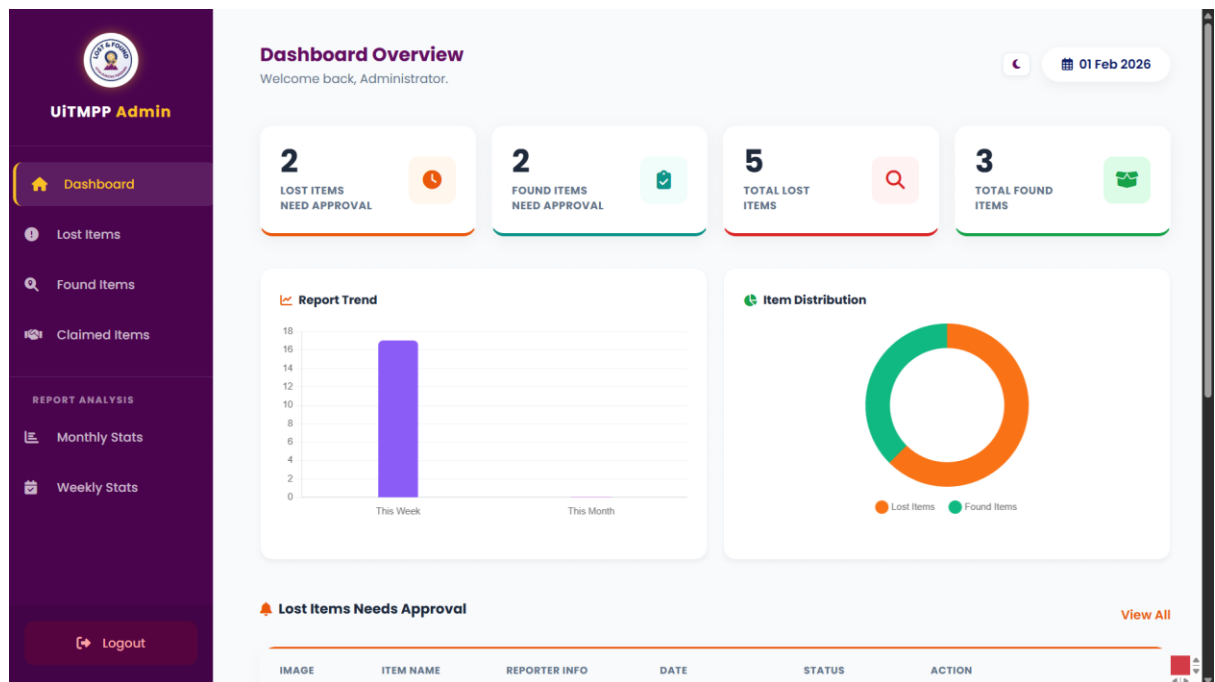
- **Welcome Interface**:

Figure 11: Admin dashboard

- **Quick Statistics**: Pending approvals, total counts

- **Visual Analytics**: Charts and graphs for trends

- **Dark Mode**: Optional dark theme

Figure 12: Admin dashboard in Dark Mode

- **Recent Activity**: Latest reports and claims

B. Lost Items Management:
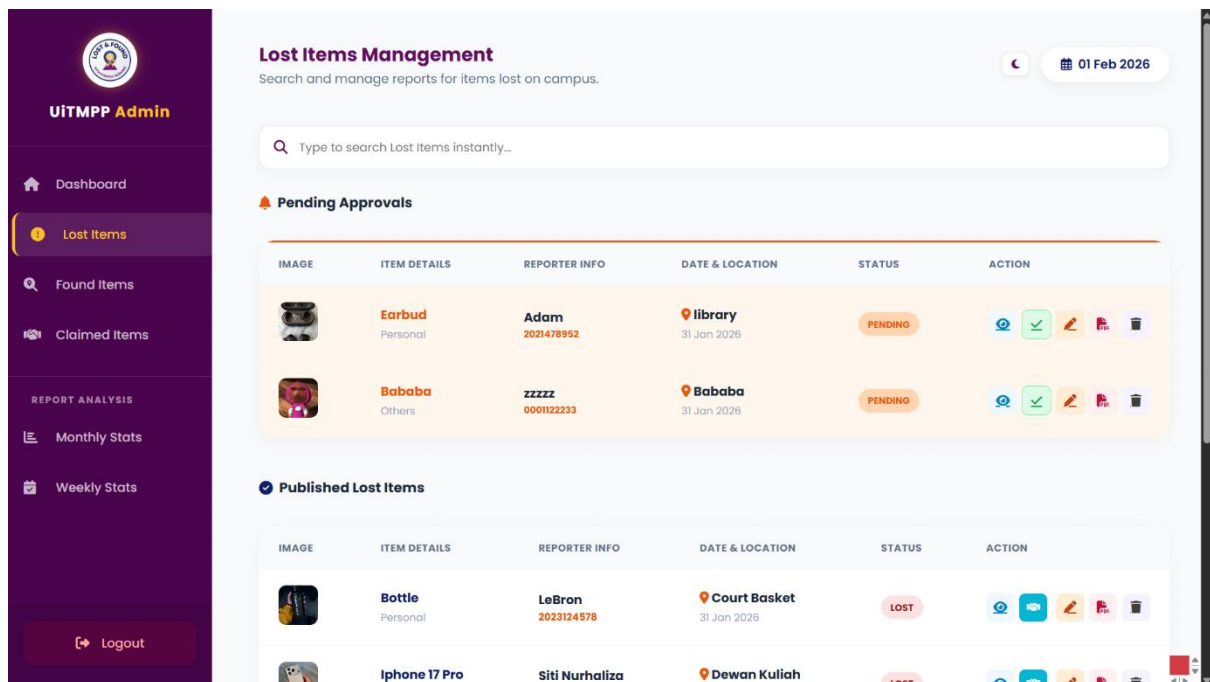
- **Admin View**:

Figure 13: Lost item management page

- **Pending Approvals**: List awaiting admin action

- **Published Items**: Approved items visible to public

- **Action Controls**: Edit, delete, change status

- **Bulk Operations**: Multiple item processing

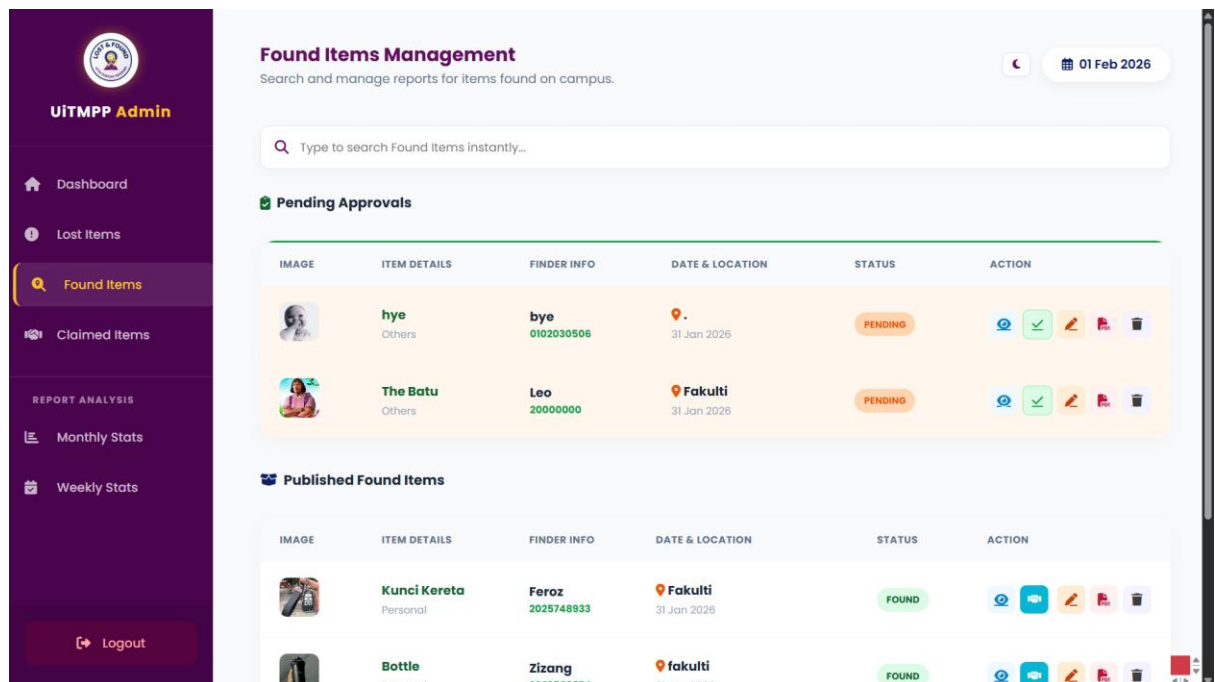**C. Found Items Management:**

- **Parallel Interface**:

Figure 14: Found item management page

- **Verification Queue**: New found items for review

- **Status Updates**: Change from Pending to Found/Claimed

- **Claim Management**: Process item claims

D. Claimed Items History:

- **Complete Record**:

Figure 15: Claim item history page

- **Transaction Log**: All successful claims

- **Separate Sections**: Lost vs Found claims

- **Claimer Details**: Who claimed what and when

- **Audit Trail**: Complete history for reference

E. Editing & Updates:

- **Edit Interface**:

Figure 16: edit report page

- **Full Modification**: All fields editable

- **Status Management**: Change item status

- **Claim Processing**: Add claimant information

- **Save Controls**: Confirm/cancel changes

4. REPORTING & ANALYTICS

A. Weekly Statistics:

- **7-Day Overview**:
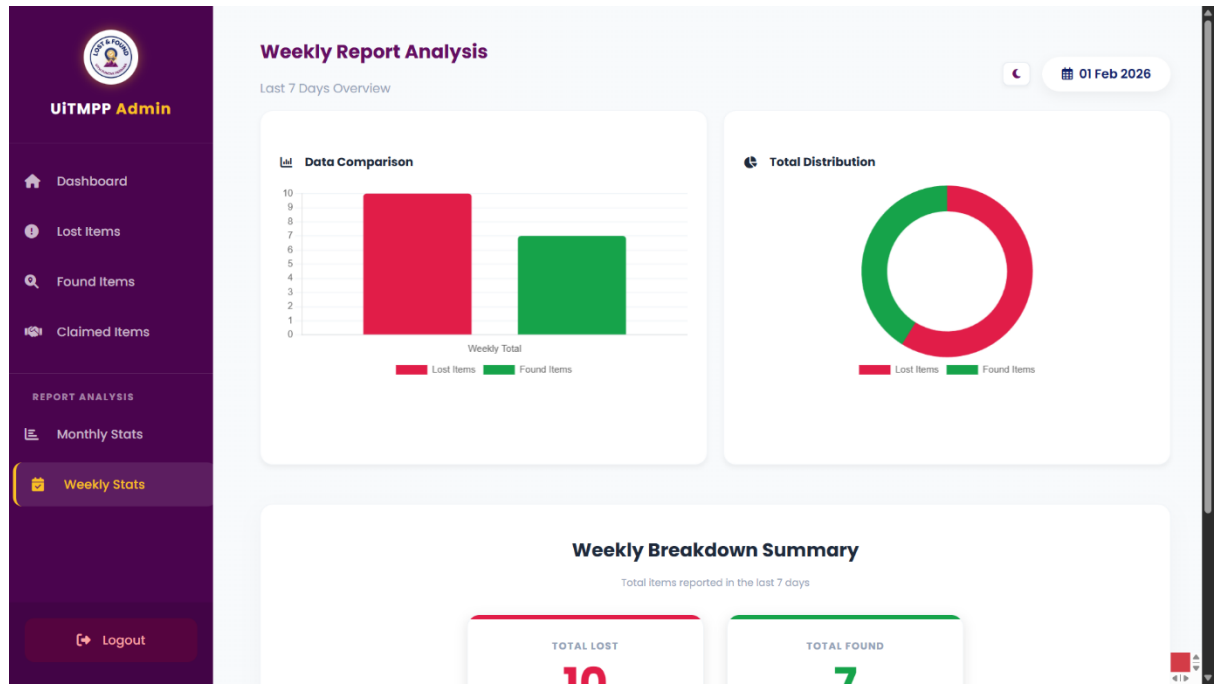
Figure 17: Weekly report analysis

- **Trend Analysis**: Lost vs Found comparison

- **Visual Charts**: Graphical representation

- **Summary Data**: Quick overview of activity

B. Monthly Statistics:

- **Yearly View**:
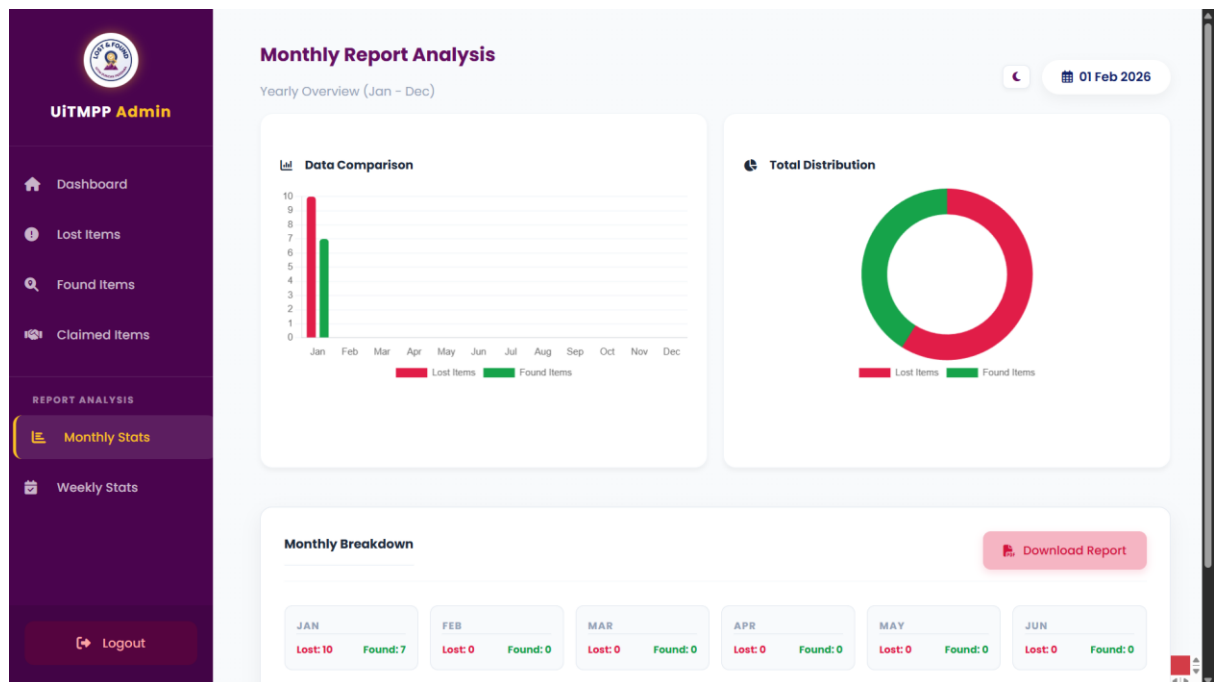
Figure 18: Monthly report analysis

- **Monthly Breakdown**: January through December

- **Comparative Analysis**: Side-by-side monthly comparison

- **Download Option**: Export complete monthly report

- **Pie Charts**: Visual distribution analysis

C. PDF Report Generation:

- **Professional Output**:

Figure 19: PDF report generate

- **Complete Details**: All relevant information included

- **Institutional Format**: UITM branding and layout

- **Timestamped**: Automatic date/time stamp

- **Printable**: Optimized for printing

5. ADVANCED FEATURES

A. Image Management:

- **Upload System**: File upload with preview

- **Storage**: Local or server-based storage

- **Format Support**: JPG, PNG, GIF formats

- **Size Optimization**: Automatic resizing if needed

- **Thumbnail Generation**: For gallery views

B. Security Features:

- **Form Protection**: CAPTCHA on public forms

- **Input Validation**: Server-side and client-side validation

- **SQL Injection Prevention**: Prepared statements

- **XSS Protection**: Output encoding

- **Session Security**: Secure session handling

C. User Experience Enhancements:

- **Real-time Updates**: Status changes visible immediately

- **Email Notifications**: Optional notification system

- **Auto-suggest**: Category/location suggestions

- **Keyboard Shortcuts**: Admin panel efficiency

- **Breadcrumb Navigation**: Path tracking

D. Administrative Tools:

- **Bulk Actions**: Process multiple items simultaneously

- **Data Import/Export**: CSV import/export capability

- **User Management**: Admin account management

- **System Logs**: Activity tracking and audit trails

- **Backup Options**: Database backup functionality

7.0 WORKFLOW OF FORM
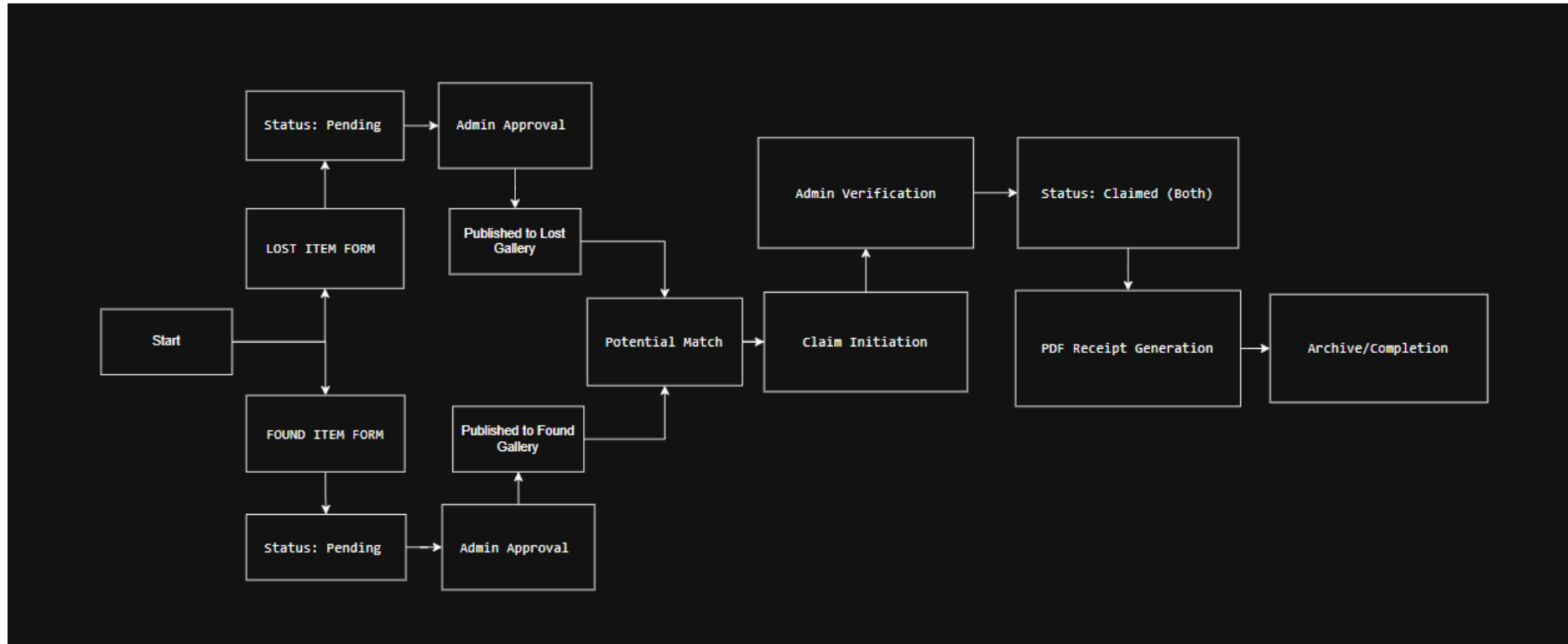
Figure 20: CRUD Cycle Diagram

CRUD Operation:

- **Create**: Form submissions (both paths)

- **Read**: Gallery publications

- **Update**: Status changes, claim processing

- **Delete**: Archive/completion phase

8.0 TEAM ROLES & CONTRIBUTIONS

Table 2: Team Roles & Contributions

Member	Role	Contribution
Yasin	Database Lead	• Database design • Combine all works • Configure database connections in CakePHP • Database scheme documentations • Manage CAPTCHA configuration • Check all section • Manage GitHub Repositories
Adib	Admin System Manager	• Developed complete admin authentication system • Create admin feature such as dashboard • Build PDF export functionality
Adi	Lost Items Manager	• Developed complete lost item reporting system • Create lost item gallery with filtering

		- Implement lost item search functionality - Build lost item form with validation
Zuhair	Found Items Manager	- Developed complete found item reporting system - Create found item gallery with filtering - Implement found item search functionality - Build found form with validation
Ryan	Documentation Lead	- Prepared complete project documentation - Create user manual with screenshots - Be system Testing

9.0 CONTACT INFORMATION (SUPPORT)

1. **Email Support:**

    *   **General Inquiries:** yasinazman1001@gmail.com
    *   **Technical Issues:** yasinazman1001@gmail.com
    *   **User Support:** ryaniskandarshah77@gmail.com

2. **GitHub Repository:**

    *   **URL:** https://github.com/yasinazman/lfsuitmpp.git
    *   **Issue Tracker:** For bug reports and feature requests

3. **Emergency Contact:**

    *   **Hotline:** [+60 13-224 3221] (Project Lead)
    *   **Response Time:** Within 2 hours for critical system issues

10.0 CONCLUSION & REFLECTION

UITM Puncak Perdana Lost and Found System is a web application that has been successfully developed as a functional and comprehensive one. The main goal of this project has been met: the digitalization of a real-life administrative process and lost-and-found at the campus is transformed into an online platform that will be secure, efficient, and easy to use. All the technical considerations of the IMS566 project requirements were met by creating a system that has sound user authentication, complete CRUD (Create, Read, Update, Delete) functionality, complex search and filtering, generated PDF report export, and a user-friendly interface developed on a modern CSS platform.

Our scholarly understanding of system architecture, database design and web development was used to develop a viable solution using the CakePHP framework and MySQL database. The system automates the whole life cycle of any item lost starting with the initial report and approval by the administrator until the item is listed publicly, claim is made, and finally documented. It is also a good way to bridge the communication barrier between the finders and the owners and thus a traditionally broken, paper-based process is turned into a centralized, transparent, and accessible digital service to the whole campus community.

All project objectives have been met, including:

1. **Digital Transformation:** Successfully converted real-world lost/found forms into an online system

2. **Technical Implementation:** Applied authentication, CRUD operations, search, and data export

3. **UI/UX Design:** Created responsive, user-friendly interfaces using CSS frameworks

4. **Documentation:** Produced comprehensive system documentation and user manual

5. **Team Collaboration:** Demonstrated effective teamwork throughout development

The system stands as a testament to the practical application of theoretical knowledge gained in web design, content management, and system development courses.

11.0 REFERENCES

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