





APPENDIX 2:

SOFTWARE DESIGN DOCUMENT (SDD)		
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LIST OF ABBREVIATIONS

Software Design Document	SSD
MySebenarnya System	MSS
Entity Relationship Diagram	ERD
Primary Key	PK
Foreign Key	FK

1. INTRODUCTION

1.1 *Purpose*

The purpose of the Software Design Document (SDD) is to offer a detailed design description of the MySebenarnya System, developed for the Malaysian Communications and Multimedia Commission (MCMC). This document outlines the architectural design, components, and processes required to build a functional and scalable system that supports public inquiry management.

The system aims to provide a centralized digital platform for managing user registration, inquiry submissions, agency assignment, and progress tracking. It is designed to enhance communication between the public and MCMC, streamline inquiry handling, and improve overall transparency and responsiveness.

This document supports developers, testers, and project stakeholders by presenting a common understanding of the system's functionality and expectations. It also serves as a reference point for future development, system upgrades, and maintenance activities by documenting all necessary design elements and logic.

The MySebenarnya System will enable modules for user management, submission of public inquiries, inquiry assignment to relevant agencies, and tracking of inquiry progress, thus ensuring efficient and traceable service delivery.

1.2 System Identification

This Software Design Document (SDD) is for the **MySebenarnya System**, developed for the **Malaysian Communications and Multimedia Commission (MCMC)**. The system provides a platform for users to submit inquiries, for agencies to manage and respond to those inquiries, and for MCMC to monitor the entire inquiry lifecycle. This system promotes transparency, efficient communication, and improved public service delivery through structured digital processes.

System Title	MySebenarnya System
System Abbreviation	MSS
Year of Development	2025
System Version	1.0 (V1.0)
System Document ID Format	<System abbreviation><Subsystem abbreviation><Year of development><System Version>
System Document ID	SDD-MSS-2025-V1.0
Subsystem Title	Project Inquiry Management System
Subsystem Abbreviation	PIMS
Subsystem Document ID	MSS-PIMS-2025-V1.0
Requirement ID Format	<Document System Abbreviation>-<Requirement abbreviation>-<Requirement number>
Requirement ID	SDD-REQ-001
Document System Name	Software Design Document
Document System Abbreviation	SDD

1.3 System Overview:

The MySebenarnya system is developed for the Malaysian Communications and Multimedia Commission. It is a web-based system that allows users to verify the authenticity of news and combat the spread of misinformation. This system needs to be developed to address critical challenges of the current system, such as lack of real-time updates for users, insufficient standardization in the categorization of reported issues, and inefficiencies related to manual reporting and tracking. Furthermore, the MySebenarnya system ensures that the verification processes are accurate, swift, and transparent.

Module 1.3.1:

The MySebenarnya system consists of four main modules, including the Profile Management module, which manages comprehensive profile data for three user roles: Public Users, Staff, and Agencies. Public Users are required to self-register, while Staff accounts are created by the system administrator, and Agency accounts are registered by MCMC Staff to ensure secure and controlled access. This module allows Public Users, Staff, and Agency users to view and update their profile information, including personal and contact details. Public Users can also change their passwords to enhance account security and better manage their interactions with the system. To ensure clarity and confirmation, all profile changes trigger pop-up notifications to inform users of successful updates.

Module 1.3.2:

The Manage Inquiry Form Submission module enables public users to submit detailed inquiries to MCMC, including supporting evidence such as documents, images, or links. MCMC staff are responsible for reviewing, validating, and categorizing each inquiry into predefined categories, ensuring appropriate processing. Users can track the status of their submitted inquiries, receive updates on progress, and access their submission history. The system ensures secure handling of data and facilitates efficient categorization, status updates, and storage. This module serves as the foundation for managing inquiries, which is further processed in later modules such as inquiry assignment and progress tracking.

Module 1.3.3:

The "Inquiry Assignment" module manages the process of forwarding verified public inquiries from MCMC staff to the appropriate government agencies for further action. MCMC staff review and validate each inquiry before selecting an agency from a predefined list and may include notes or comments during the assignment. The system allows public users to track which agency their inquiry has been forwarded to and when. Agencies receive full submission details, review jurisdiction relevance, and either proceed with verification or reject the assignment with justification. Additionally, MCMC staff can generate analytical reports on agency assignments, including trends and distributions, with download support in PDF and Excel formats.

Module 1.3.4:

The "Inquiry Progress Tracking" manages the monitoring and updating of the status of public inquiries after they have been assigned to agencies. The agencies must change the status of each inquiry and provide supporting documentation or notes. If any case is not under the agency's jurisdiction, then the agency can reassign the cases with proper documentation. Public users can see the real-time status and view the full history of inquiries with timestamps in the user dashboard. MCMC staff can monitor and identify pending cases. Moreover, staff can create interactive charts and evaluate agency performance based on data-driven results. And the generated report will be available in several formats.

1.4 References

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2. DATA DESIGN

2.1 ENTITY RELATIONSHIP DIAGRAM (ERD)

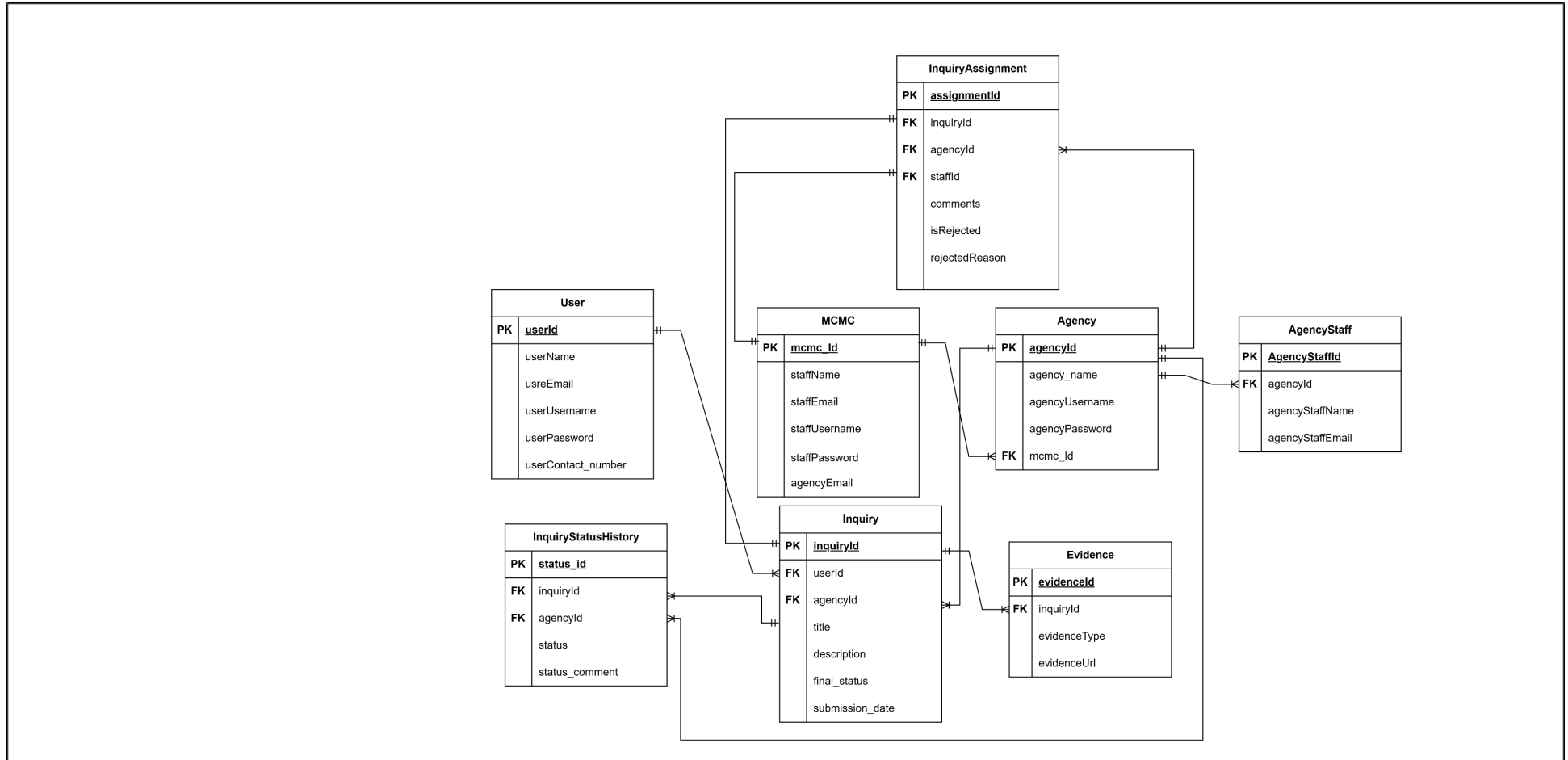


Figure 2.1 Entity Relationship Diagram (ERD) for MySebenarnya System.

2.2 DATA DICTIONARY

Field Name	Description	Data Type	Constraint
agencyId	Unique identifier for each agency	INT	Primary Key (PK)
agency_name	Name of the agency	VARCHAR2(255)	Not Null
agencyStaffEmail	Email of the agency	VARCHAR2(255)	Not Null
agencyUsername	Username for login	VARCHAR2(255)	Not Null, Unique
agencyPassword	Username for login	VARCHAR2(255)	Not Null
mcmId	FK to assigned agency staff	INT	Foreign Key(FK) Staff(staffId)

2.2.1 Agency Table

Field Name	Description	Data Type	Constraint
inquiryId	Unique identifier for each inquiry	INT	Primary Key (PK)
userId	FK to the user who submitted the inquiry	INT	Foreign Key (FK) → User(userId)
agencyId	FK to assigned agency	INT	Foreign Key (FK) → Agency(agencyId)
title	Title of the inquiry	VARCHAR	Not Null
description	Description of the inquiry	TEXT	Not Null
final_status	Status of the inquiry	ENUM('Under Investigation', 'True', 'Fake', 'Rejected')	Not Null
submission_date	Date of inquiry submission	DATE	Not Null

2.2.2 Inquiry Table

Field Name	Description	Data Type	Constraint
evidenceId	Unique identifier for each evidence	INT	Primary Key (PK)
inquiryId	FK to related inquiry	INT	Foreign Key (FK) → Inquiry(inquiryId)
evidenceType	Type of the evidence	VARCHAR	Not Null
evidenceUrl	Title of the inquiry	VARCHAR	Not Null

2.2.3 Evidence Table

Field Name	Description	Data Type	Constraint
assignmentId	Unique identifier for assignment	INT	Primary Key (PK)
inquiryId	FK to inquiry	INT	Foreign Key (FK) → Inquiry(inquiryId)
agencyId	FK to agency	INT	Foreign Key (FK) → Agency(agencyId)
staffId	FK to staff who made the assignment	INT	Foreign Key (FK) → Staff(staffId)
comments	Comments about the assignment	TEXT	Optional
isRejected	Flag if rejected	BOOLEAN	Not Null
rejectedReason	Reason for rejection	TEXT	Optional

2.2.4 InquiryAssignment Table

Field Name	Description	Data Type	Constraint
status_id	Unique identifier for the status record	INT	Primary Key (PK)
inquiryId	FK to inquiry	INT	Foreign Key (FK) → Inquiry(inquiryId)
agencyId	FK to agency that updated the status	INT	Foreign Key (FK) → Agency(agencyId)
status	Status update	ENUM('Under Investigation', 'True', 'Fake', 'Rejected')	Not Null
status_comment	Comment about the status	TEXT	Optional

2.2.5 InquiryStatusHistory Table

Field Name	Description	Data Type	Constraint
agencyStaffId	Unique identifier for agency staff	INT	Primary Key (PK)
agencyId	FK to assigned agency	INT	Foreign Key (FK) → Agency(agencyId)
agencyStaffName	Name of the agency staff	VARCHAR(255)	Not Null
agencyStaffEmail	Email of the agency staff	VARCHAR(255)	Not Null
agencyStaffUsername	Username for login	VARCHAR(255)	Not Null
agencyStaffPassword	password for login	VARCHAR(255)	Not Null

2.2.6 AgencyStaff Table

Field Name	Description	Data Type	Constraint
mcmcId	Unique identifier for MCMC staff	INT	Primary Key (PK)
staffName	Name of the MCMC staff	VARCHAR(255)	Not Null
staffEmail	Email of the MCMC staff	VARCHAR(255)	Not Null
staffUsername	Username for login	VARCHAR(255)	Not Null
staffPassword	Password for login	VARCHAR(255)	Not Null
agencyEmail	Email address of the agency staff	VARCHAR(255)	Not Null

2.2.7 MCMC Table

Field Name	Description	Data Type	Constraint
userId	Unique identifier for each user	INT	Primary Key (PK)
userName	Full name of the user	VARCHAR(255)	Not Null
userEmail	Email address of the user	VARCHAR(255)	Not Null
userUsername	Username for login	VARCHAR(255)	Not Null
userPassword	Encrypted password for the user	VARCHAR(255)	Not Null
userContact_number	Contact number of the user	VARCHAR(15)	Optional

2.2.8 User Table

3. GENERAL ARCHITECTURE

3.1 Architecture pattern: MVC

The Model-View-Controller (MVC) design pattern is used by the system. Three different layers represent this system's architecture, and they are as follows:

- 1) Model: Describes the application's business logic and data handling.
- 2) View: Manages the user interface and shows model data.
- 3) Controller: Manages user input and application logic, working as a link between the View and Model.

The flexible structure of the MVC pattern makes the system very flexible and manageable. Adjustments in one element, such as changing the model's database schema or the view's design, can be made without having a major impact on the others. Additionally, because each component may make use of encapsulation, inheritance, and polymorphism to ensure code reuse and simplify functionality, the pattern is especially well-suited for object-oriented programming. Because of this, MVC is the perfect option for the "MySebenarnya" system, where several user roles and modules need to work together effectively and properly.

3.2 Component Overview

Using an adaptable architecture, the "MySebenarnyag" system separates its overall functionality into separate, independent modules. Every module focuses on a distinct component of the system, ensuring independent operation and smooth communication with other modules. The created independent components are Manage User Module, Manage Inquiry Form Submission Module, Inquiry Assignment Module and Inquiry Progress Tracking Module.

3.2.1. Module 1: Manage User Module

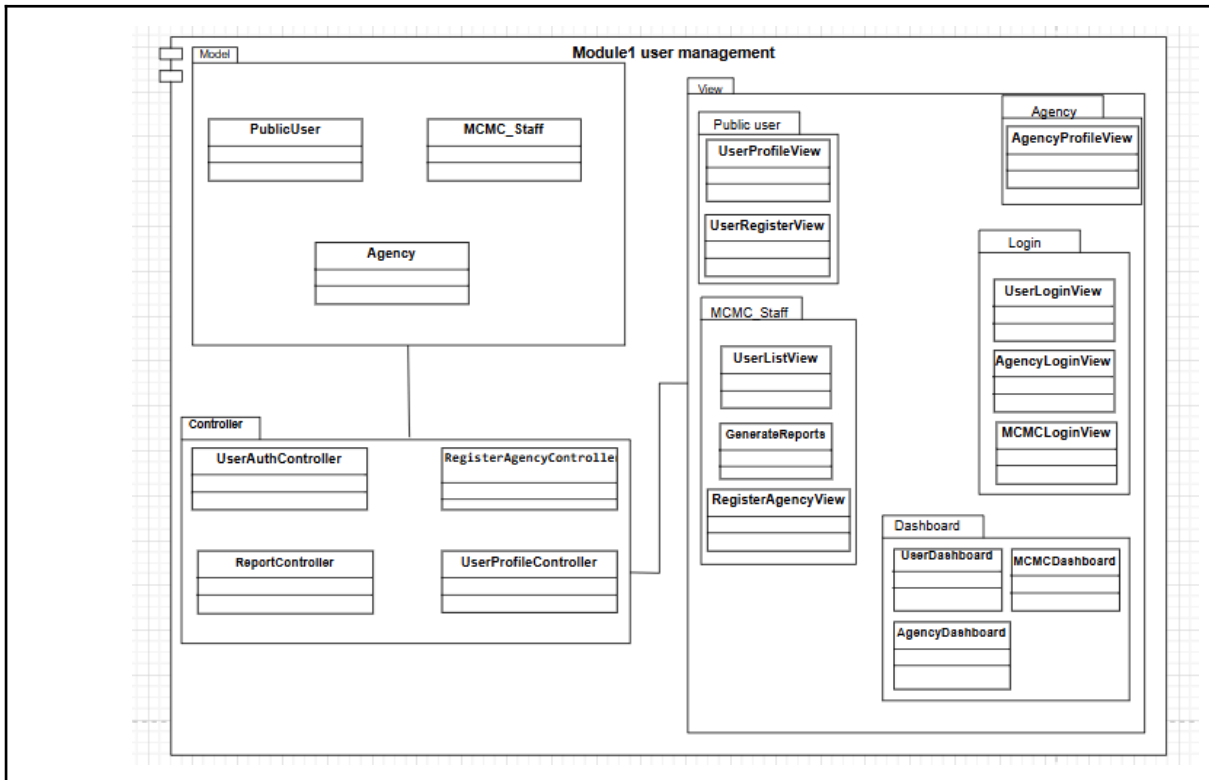


Figure 3.2.1 : Component Module 1: Manage user

View Package

Class Name	Description
User Login View	A class where Public user can log in to their account in MySebenarnyag system using email and password
MCMC Login View	A class that allows MCMC staff to log in to their account using a password and a username provided by the administrator.
AgencyLoginView	A class that enables Agency to login to the system
User Register View	A class that allows public users to create account in the MySebenarnyag system
User Profile View	A class that allows public users to edit their profiles like profile pictures, email, password, etc.
Agency Profile View	A class that allows agencies to edit their profile info.
User List View	A class that Allows MCMC Staff to view a real-time list of all users in the system (Public and Agency).
Register agency View	A class that allows MCMC Staff too register agencies to system
generate report	A class that Allows MCMC Staff to generate formal reports about users, often for exporting (PDF, Excel, etc.).

Table 3.2.1.1

Model Package

Class Name	Description
MCMC_Staff	A model storing information about MCMC_staff Registered by admin, including MCMCID, staffName, StaffUsername, staff Password, and agency Email.
Agency	A model storing information about registered agencies, including agency ID, agency name, agency username, agency password, and connection to MCMC.
User	A model storing public user information, including user ID, name, email, username, password, and contact information.

Table 3.2.1.2

Controller Package

Class Name	Description
User auth controller	A controller class that manages user authentication tasks such as login, registration, and logout for Public Users, MCMC Staff, and Agency Staff. Ensures secure access based on user roles.
Register agency controller	A controller class that allows MCMC staff to register agencies and provide agencies with access to the system.
ReportController	A controller class that Handles report generation and analytics for registered users. It retrieves user data and generates downloadable reports in formats such as Excel and PDF, and prepares data for visualizations like charts and graphs to support administrative analysis.
User Profile controller	A controller class that allows users to adjust their profiles data.

Table 3.2.1.3

3.2.2. Module 2: Manage Inquiry Form Submission Module

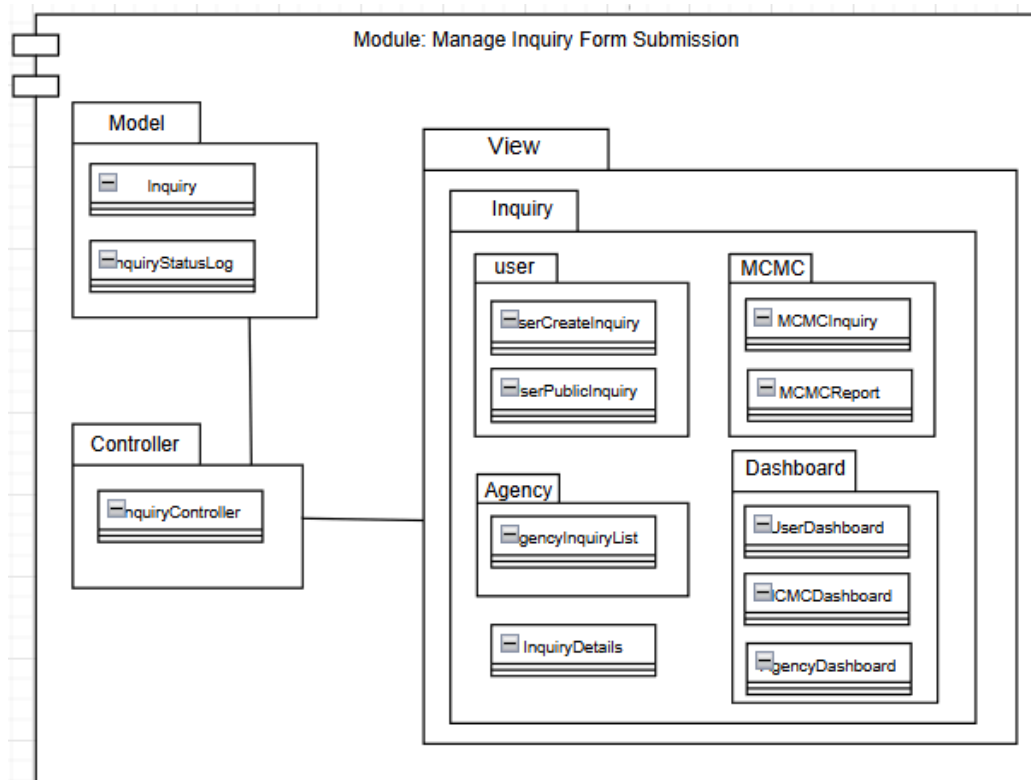


Figure 3.2.2 : Component Module 2: Manage Inquiry Form Submission

View Package

Class Name	Description
UserDashboard	A class that manages the user view displaying all inquiries and their current statuses. Allows users to see which agency their inquiry has been forwarded to.
UserCreateInquiry	A class that displays the form for creating a new inquiry and submitting it.
UserPublicInquiry	A class that displays a list of all inquiries submitted by other users, ensuring that no personal information is disclosed.
MCMCDashboard	A class that displays an overview of all pending and assigned inquiries, along with analytical data on agency performance.
MCMCInquiry	A class that allows MCMC staff to review and assign inquiries to the relevant agency.
MCMCReport	A class that generates reports on the total number of inquiries, including trend analysis and inquiry status distribution.
AgencyInquiryList	A class that displays inquiries assigned to agencies for review and action.
InquiryDetails	A class that allows MCMC and agency staff to view full inquiry details, including status updates, timestamps, and any review notes.

Table 3.2.2.1
Model Package

Class Name	Description
Inquiry	A model that handles all business logic related to inquiries, including submission, viewing, filtering, reporting, and role-based access control for public users, MCMC staff, and agencies.
InquiryStatusLog	A model that records the history of status changes made by MCMC staff for each inquiry.

Table 3.2.2.2

Controller Package

Class Name	Description
InquiryController	A Controller that handles all business logic related to inquiries, including submission, viewing, filtering, reporting, and role-based access control for public users, MCMC staff, and agencies

Table 3.2.2.3

3.2.3. Module 3: Inquiry Assignment Module

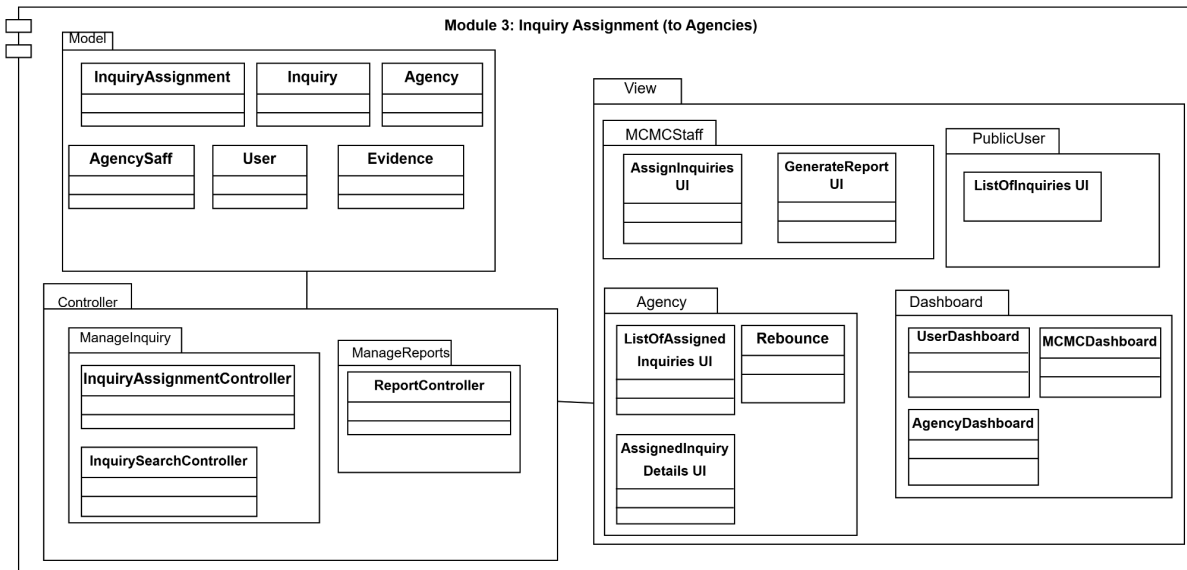


Figure 3.2.3: Component Module 3: Inquiry Assignment

View Package

Class Name	Description
Userdashboard	A class that manages the user view of displaying all inquiries with their current statuses. Allows public users to see which agency their inquiry has been forwarded to for verification.
AssignInquiries UI	A class that allows MCMC staff to review public user inquiries and assign them to the relevant agency for verification, with functionality to add comments before forwarding.
GenerateReport UI	A class that enables MCMC staff to generate reports on the number of inquiries assigned to each agency, with filtering options by date range and agency name.
Rebound	A class that allows MCMC employees to monitor the status of agency assigned queries. It displays status changes in real time, including Rejected, Verified as True, Under Investigation, and Identified as Fake.
AssignedInquiryDetials UI	A class that allows MCMC employees to review all status updates, timestamps, and review notes by selecting any case.
AgencyDashboard	A class that allows agencies to view all inquiries assigned to them and update the status of each inquiry as Rejected, Verified as True, Identified as Fake, or Under Investigation. Each status change is recorded with an exact timestamp.
MCMCDashboard	A class that provides MCMC staff with an overview of all pending and assigned inquiries, along with analytical data about agency performance and inquiry distributions.

Table 3.2.3.1

Model Package

Class Name	Description
InquiryAssignment	A model representing the assignment of inquiries to agencies, storing assignment ID, inquiry ID, agency ID, staff ID, comments, rejection status, and rejection reason.
Inquiry	A model representing user inquiries with attributes including inquiry ID, user ID, agency ID, title, description, final status, and submission date.
Agency	A model storing information about verification agencies, including agency ID, agency name, agency username, agency password, and connection to MCMC.
User	A model storing public user information including user ID, name, email, username, password, and contact information.

Table 3.2.3.2

Controller Package

Class Name	Description
InquirySearchController	A controller that manages search functionality across inquiries, allowing users to find inquiries by various parameters including keywords, date range, status, and assigned agency.
ReportController	A controller responsible for generating comprehensive reports on inquiry assignments and statistics, including filtering functionality and export options to PDF and Excel formats.
InquiryAssignmentController	A controller that handles the assignment of inquiries to appropriate agencies, manages the list of registered agencies, and processes assignment rejections and reassignments.

Table 3.2.3.3

3.2.4. Module 4: Inquiry Progress Tracking Module

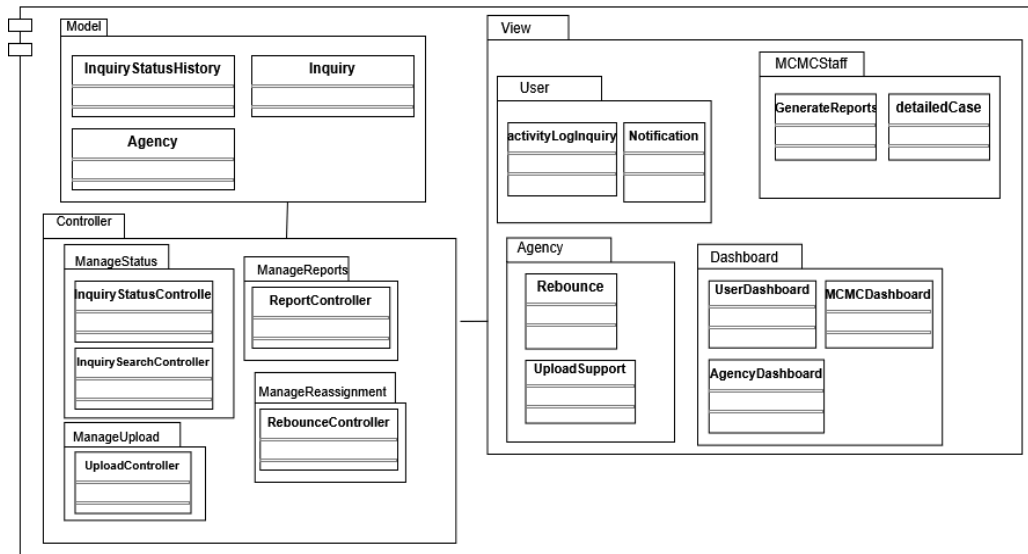


Figure 3.2.4 : Component Module 4: Inquiry Progress Tracking Module

View Package

Class Name	Description
Userdashboard	A class that manages the user view of displaying all inquiries with their current statuses, and allows users to filter and search their past inquiries.
LogActivityHistory	A class that allows users to examine the whole history of status changes and the timestamps related to them by choosing any case.
Notification	A class that notifies users when there is a change in their inquiry's status.
MCMCDashboard	A class that allows MCMC employees to monitor the status of agency assigned queries. It displays status changes in real time, including Rejected, Verified as True, Under Investigation, and Identified as Fake.
detailedCase	A class that allows MCMC employees to review all status updates, timestamps, and review notes by selecting any case.
AgencyDashboard	A class that allows agencies to update the status of each inquiry assigned by MCMC. Depending on the findings, agencies will assign the status as Rejected, Verified as True, Identified as Fake, or Under Investigation. And each change will be recorded with an exact timestamp.
UploadSupport	Allow agencies to share investigation notes, supporting documentation, and justifications for their findings about a case.
Rebounce	Allows agencies to request reassignment of an inquiry if it falls outside their jurisdiction or authority.

Table 3.2.4.1

Model Package

Class Name	Description
InquiryStatusHistory	The model class that manages connection from the InquiryStatusHistory table from the database to the system.
Inquiry	The model class that manages connection from the Inquiry table from the database to the system.
Agency	The model class that manages connection from the Agency table from the database to the system.

Table 3.2.4.2

Controller Package

Class Name	Description
InquiryStatusController	A controller class handles status updates made by agencies. Requests to modify the status of an inquiry are processed, agency permissions are verified, and the system is updated appropriately..
InquirySearchController	A controller class responsible for retrieval of inquiries based on search criteria or filters such as case ID, status, date, or assigned agency.
ReportController	A controller class responsible for client requests related to report generation and analytics. In order to help with performance analysis, it organizes data retrieval, produces reports in Excel or PDF, and gets data ready for visualization elements like graphs and charts.
UploadController	A controller class responsible for processes agency upload requests about investigative details. It manages notes, supporting documentation, and explanations, verifies the information, and sends the data to the relevant system or service for storage and connection to the relevant query.
RebounceController	A controller class that deals with requests from agencies to reassign inquiries that are outside of their area of authority. In order to execute these requests, the controller confirms the agency's authorization, determines if the query is within the agency's jurisdiction, and updates the system appropriately.

Table 3.2.4.3

3.4 PACKAGE RELATIONSHIP

