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Ixora Apartment Repair Management System

Ho Lai Ming, Mohd Zainuri Saringat*

Fakulti Sains Kompurer dan Teknologi Maklumat,
Universiti Tun Hussein Onn Malaysia, 86400, Parit Raja, Johor, MALAYSIA

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Abstract: The current repair request management of the Ixora Apartment managed by the administrator using the paper-based repair request form. This management is inconvenient for users and may result in data loss. For the above reasons, a web-based repair management system was proposed for Ixora Apartment to manage their repair management system. This proposed project implemented using the waterfall model. The waterfall model consists of six phases which are requirement analysis, system design, implementation, testing, deployment, and maintenance. In this project, four phases will use to implement the Ixora Apartment Repair Management System. The phases used in this project are the requirement analysis phase, system design phase, implementation phase, and testing phase. This project target to help the requesters and staffs create and manage the repair request conveniently and effectively. The requesters can create a repair request anytime and anywhere without any consideration. Besides, requesters able to get the latest status of the requested repair request and provide feedback easily. Additionally, the administrator can manage the repair request effectively by accept, reject, or update the repair request. The focus of the Ixora Apartment Repair Management System project is to develop a web-based repair management system for the requesters and staffs of the Ixora Apartment to manage the repair request and to convert the paper-based repair management system to an online repair management system. Thereby, minimize human factor and limitation problems, and maximize convenience and working efficiency. Testing has conducted and summarized after the implementation phase. The overall results of the test case are in the pass state. All modules have presented and function according to the expected outcomes.

Keywords: Repair Request Management, Waterfall Model, Web-based

1. Introduction

The importance of the Ixora Apartment Repair Management System is to manage the repair request using a computerized system. This system allows the requesters and the staffs of the Ixora Apartment to create and manage the repair request easily. The main modules of this system are requester create a repair request, and staffs manage the repair request.

The present system is a paper-based repair management system. The requesters have to go to the Ixora office during office hours to create a repair request. The requester fill-up the repair request form

*Corresponding author: zainuri@uthm.edu.my

and submit it to the administrator. Then, the administrator will decide to accept or reject the repair request. The inspector and worker assigned to the repair request once the repair request has accepted. After completing the repair request, the repair request form will keep in the documentation files.

From the observation, several problems have identified. The requesters need to head to the office during office hours is an inconvenience. This requirement is causing distress for the requesters, especially most of the requesters who have standard working hours, class schedule, and heavy schoolwork or workloads. Besides, the present system limited requesters from easily knowing the latest status of the repair request. The requesters require to go to the office to get more information. Moreover, the large amount of repair request paper form can be missing, rottenness or torn due to human factors.

To solve the identified problems, the Ixora Apartment Repair Management System has developed for Ixora Apartment. The system developed with the objectives to design an online repair management system to solve problems faced by requesters and staffs of Ixora Apartment, to develop an online repair management system for Ixora Apartment, and to implement testing for developed online repair management. The purpose of developing this system is to improve the convenience brings and the working efficiency.

2. Related Work

In this section, the study of the Computerized Maintenance Management System has described. Besides, the comparison between the existing system and the proposed system has summarized in section 2.2.

2.1 Study on Computerized Maintenance Management System

Maintenance management can be defined as managing the facility to maintain its original state and purpose. Based on the book "computerized maintenance management system made easy" by Kishan Bagadia, an excellent maintenance system can effectively reduce the time and frequency of downtime. It makes the facility available most of the time to perform its functions and services. A maintenance management system is composed of 10 basic steps. The steps are to request the repair request, approval, plan, schedule, perform work, record repair request data, cost accounting, develop management information, update equipment history, and provide management control reports [1]. A Computerized Maintenance Management System has designed to simplify the manual maintenance management system. The Computerized Maintenance Management System keeps maintenance information in the computer database, and it can generate a report to summarize the maintenance activities.

Work order management is one of the features of the Computerized Maintenance Management System. A work order is a work task created by the maintenance manager to the worker after a repair request from a requester has accepted. Work order management defines as process work orders in a correct and timely manner. It is one of the features of the Computerized Maintenance Management System. Work order management plays an important role in Computerized Maintenance Management System because it can schedule the work order to reduce the equipment downtime, provide clear instructions to the team, and reduce the number of incomplete tasks.

2.2 System Comparison

Three existing systems on the market have studied and compared with the proposed Ixora Apartment Repair Management System. The modules of the system summarized and shown in **Table 1**.

Table 1: System comparison

Modules	FMX CMMS	Hippo CMMS	Innovative Maintenance Pro CMMS	Ixora Apartment Repair Management System
System type	Web-based	Web-based	Web-based	Web-based
Subscription Fee	Yes	Yes	Yes	No
Login and Reset Password Module	Yes	Yes	Yes	Yes
Repair Request Management	Yes	Yes	Yes	Yes
Export Repair Request Detail Module	Yes	Yes	Yes	Yes
Report Module	Yes	Yes	Yes	Yes
User Management	Yes	Yes	Yes	Yes
Feedback Module	No	No	No	Yes
Email Repair Request Status Module	Yes	No	No	Yes

According to Table 1, all existing system and proposed system are the same web-based system type. Besides, the existing system and proposed system have the basic modules of login and reset password module to authorize user access, repair request management to manage the work order, exportable repair request detail module, report module, and user management module to manage user account. However, the existing system required the administrator to manage the requester account using the user management module. This module is not applicable to Ixora apartments for most short-term tenants because it will increase the workload due to frequent update requester account.

On the other hands, three of the existing system are the subscription-based system that required a subscription fee. Free trial is available for limited modules, and it can last for 14 days only. Moreover, Hippo Computerized Maintenance Management System and Innovative Maintenance Pro Computerized Maintenance Management System does not send email to the requester to notify the status of the requested repair request. Furthermore, a special module for the proposed system is the feedback module compared with the three existing systems. Requesters allowed to provide feedback to the repair request requested by them. This module helps Ixora Apartment to improve its repair management system continuously.

3. Methodology/Framework

In this section, the methodology chose to implement Ixora Apartment Repair Management System will explain. The methodology of software development determines the process used to develop software. Besides, the system analysis and design described in section 3.2. System analysis and design is a structured process employed in developing quality information technology [2].

3.1 Methodology

Waterfall Model selected as the software process model of the Ixora Apartment Repair Management System methodology. As shown in Figure 1, the waterfall model consists of six phases which are requirement analysis, system design, implementation, testing, deployment, and maintenance [3]. In this project, four phases will use to implement the Ixora Apartment Repair Management System. The phases used in this project are the requirement analysis phase, system design phase, implementation phase, and testing phase. Each Waterfall Model phase will relate to the following phases because it has designed in an orderly phase. Hence, each current phase must be complete before proceeding to other phases.

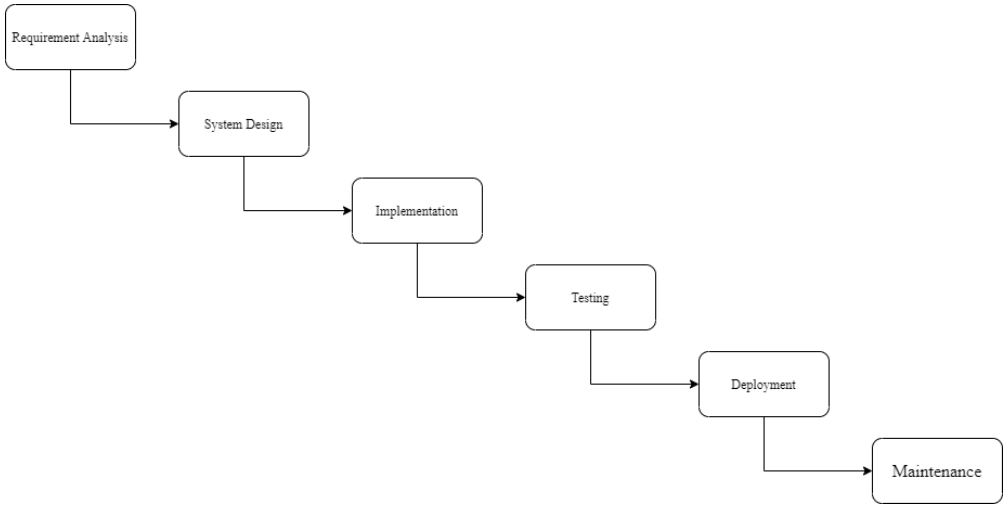


Figure 1: Phases of Waterfall Model

In the Requirement Analysis phase, the requirement of the project is gathered and analyzed [4]. The project background, the objective of the proposed system, problems of the existing system, the project scope, methodology used to develop the project, the expected result of the project, and the project planning to estimate the time in develop the project has documented in this phase. A proposal is written and submits to the supervisor for approval. Afterwards, the introduction chapter, literature review chapter, and methodology chapter will write and submit to the supervisor after passed the title defense presentation.

In the System Design phase, the system architecture of the proposed system will design based on the documentation in the requirement analysis phase. The system architecture of the Ixora Apartment Repair Management System will present using the Unified Modelling Language (UML) diagram. The UML diagrams are the Use Case Diagram, Sequence Diagram, Activity Diagram, and Class Diagram. Furthermore, the system interface of the proposed system will design to have a better user interface and user experience for the users. The analysis and design chapter will produce with the designed diagram and submit to the supervisor.

The Implementation phase is a coding phase [4]. The Ixora Apartment Repair Management System code has started to write based on the documentation from previous chapters. The code will implement in a small unit and integrated at the end of the phase. Unit testing will carry out in this phase as well before the code has integrated. Then, the proposed system will test in overall after the Implementation phase to disclose the errors or bugs on the system. This phase is the last phase of this project, named the Testing phase. The Testing phase is compulsory as it tests the whole proposed system to ensure the features are functioning well and deliverables before the proposed system deployed.

Table 2 summarized the proposed system development workflow. In this Ixora Apartment Repair Management System project, the Deployment phase and Maintenance phase will not include because the Ixora Apartment Repair Management System will not release for business use.

Table 2: Proposed System Development Workflow.

Phase	Activity
Requirement Analysis	Gather and analyze the information and requirement to develop the proposed system. Research and study the existing system on the market to look for improvement needed. Determine the hardware and software required to develop the proposed system.
System Design	Design the system architecture and system interface of the proposed system based on the analyzed requirement.

Table 2: cont.

Phase	Activity
Implementation	Code Ixora Apartment Repair Management System in small unit and integrate at the end of this phase. Unit testing is carried out in this phase as well.
Testing	Test the entire system to ensure all modules or features are functioning, deliverable, and meets the requirements.

3.2 System Analysis and Design

The requirement analysis, Requirement Traceability Matrix (RTM), system design, and database design have described in this section.

Requirement analysis is the process of determining user expectation for the system that to be developed. The requirement analysis process applied to analyze, document, validate and manage the system requirements of the proposed system based on the identified user requirements [5]. The system requirements analysis classified into two, which is the functional requirement and the non-functional requirement.

The functional requirement is the declaration of services provided by the proposed system, for instance, the responses of the proposed system after user input or the operation of the proposed system under a condition [6]. Table 3 show the functional requirements in Ixora Apartment Repair Management System.

Table 3: Functional Requirements of Ixora Apartment Repair Management System

No.	Modules	Functional Requirements
1	Login Module	- The proposed system shall allow the administrator, inspector, and worker to login into the system using a valid email and password. - The proposed system shall display an error message to the administrator, inspector, or worker for any invalid input. - The proposed system should redirect the administrator, inspector, and worker to the main repair request page once login successfully.
2	Reset Password Module	- The proposed system shall allow the administrator, inspector, and worker to reset the password. - The proposed system should redirect the administrator, inspector, and worker to the login page once reset password successfully.
3	Repair Request Management	- The proposed system shall allow the user to accept and reject new incoming repair request. - The proposed system shall allow the administrator to add inspector and worker once a facility repair request is accepted. - The proposed system shall allow the administrator to add inspector, worker, and booking date once an accommodation repair request is accepted. - The proposed system shall allow the administrator to add rejected reason once the repair request rejected. - The proposed system shall allow the administrator to edit the detail of the repair request. - The proposed system shall allow the administrator and inspector to update the status of the repair request. - The proposed system shall allow the inspector and worker to read the assigned repair request.

Table 3: (cont.)

No.	Modules	Functional Requirements
4	Report Module	- The proposed system shall allow the administrator to read the report based on the selected status. - The proposed system shall allow the administrator to export the report based on the selected status.
5	User Management	- The proposed system shall allow the administrator to add a new user to the proposed system. - The proposed system shall allow the administrator to edit the existing user in the proposed system. - The proposed system shall allow the administrator to delete the existing user from the proposed system.
6	Create Repair Request Module	- The proposed system shall allow the requesters to create a new repair request on the repair request form in the proposed system. - The proposed system shall send a confirmation email to the requesters to confirm the creation of a new repair request on the repair request form in the proposed system.
7	Feedback Module	- The proposed system shall allow the requesters to submit feedback on the feedback form in the proposed system.
8	Email Repair Request Status Module	- The proposed system shall send an email to the requester once the status of the requested repair request updated.

The non-functional requirement is the limitation of the services provided by the proposed system. Examples of the limitation include the response time limitation, restrictions on the development process, or restrictions imposed by standards [6]. It applied to the entire proposed system to guarantee the quality of the proposed system. The non-functional requirements of the Ixora Apartment Repair Management System shown in Table 4.

Table 4: Non-Functional Requirements of Ixora Apartment Repair Management System.

No.	Non-Functional Requirements	
1	Performance	- The proposed system must be accessible at any time.
2	Security	- User email and password protect authorized user account. - Only administrator can access the user management and report page.
3	Operational	- The proposed system should be work in any browser. - The proposed system should be user friendly.
4	Cultural and Political	- The language of the proposed system should be in English to understand by various type of user.

Use Case diagram represents the behavior of the system and how the proposed system interacts with the users. Eight modules included in the Ixora Apartment Repair Management System. Appendix A show the use case of the Ixora Apartment Repair Management System. While, Appendix B show the Activity Diagrams and Sequence Diagrams of the Ixora Apartment Repair Management System.

For Login Use Case, the staffs of Ixora Apartment use the login use case to access the proposed system by entering their email and password. The staffs redirected to the repair request main page once the login process is successful. In contrast, the proposed system will display an error message if the login process is unsuccessful. Besides, for Manage Repair Request Use Case, the administrator allowed to manage the repair requests. The administrator can accept, reject, and edit the repair request saved in the database.

For Update Status of Repair Request Use Case, the administrator and inspector allowed to update the status of the repair requests to pending, to inspect, complete and incomplete. An email will send to the requester every time after the status updated to notify the requester. Meanwhile, for Manage User Use Case, the administrator is responsible in manage user management. The administrator can add a new user to the system by entering the user information. The user information includes `userId`, `userName`, `userEmail`, `userPhoneNo`, and `userPosition`. Besides, the administrator allowed to edit user information and delete user on the system.

Requirement traceability matrix (RTM) is a list of user requirement and system requirement to check and ensure the satisfaction of the requirement on the proposed system [7]. Appendix C listed the requirement traceability matrix of the Ixora Apartment Repair Management System.

The system design defines the architecture, interfaces, and data for the proposed system to fulfil specific requirements. The importance of system design is to ensure the proposed system has built according to the requirements and is satisfied by users.

The flowchart is a graphical diagram used to illustrate the logic and interaction of the process of the proposed system. The flowchart is conducted with standard symbols and connected with arrows to demonstrate the working flow of the proposed system. In this proposed system, four flowcharts have drawn to visualize the workflow of four different users, as shown in Appendix D. The administrator can perform login, reset password, repair request management, user management, and report. The inspector and worker can perform login, reset password, and repair request management. Besides, the requester can perform create repair request, feedback, and receive email status.

Database design is a group of detailed data entered based on a database model to determine the required data and the relationship between each element. Besides, a good database design maintains data consistency while implementing a quality database system.

Based on Appendix E, there are four classes in the Ixora Apartment Repair Management System class diagram, which is `staff`, `requester`, `repair_request`, and `status_information` class. Each class created with attributes and connected with another class. The requester can create repair requests and provide feedback to the repair request. The administrator can manage the repair request and staff on the system. Besides, the inspector can update the repair request data, such as the status and remark of the repair request.

The Ixora Apartment Repair Management System use five tables to construct the database. The tables are `Staff`, `Requester`, `Repair_Request` and `Status_Information`.

Based on Table 5, the attributes of staff table are `staffId`, `staffName`, `staffPassword`, `staffPhone`, `staffEmail`, `staffPosition`, `staffProfession`, `staffCreatedDate`, and `staffModifiedDate`. The `staffId` is the primary key of `staff` table.

Table 5: Staff Table

Attribute	Date Type	Size	Key	Description
staffId	int	4	Primary	ID for staff.
staffName	nvarchar	400		Name of staff.
staffPassword	nvarchar	400		Password for staff to login.
staffPhone	varchar	20		Phone number of staff.
staffEmail	varchar	150		Email of staff.
staffPosition	varchar	15		Position of staff.
staffProfession	nvarchar	510		Profession of staff.
staffCreatedDate	datetime	-		Created date of staff.
staffModifiedDate	datetime	-		Modified date of staff.

Table 6 show the requester table which contains `requesterId`, `requesterName`, `requesterPhone`, `requesterEmail`, `requesterRoomNo` and `createdDate`. The `requesterId` on `requester` table is the primary key.

Table 6: Requester Table

Attribute	Date Type	Size	Key	Description
requesterId	int	4	Primary	ID for requester.
requesterName	nvarchar	200		Name of requester.
requesterPhone	varchar	20		Phone number of requester.
requesterEmail	varchar	150		Email of requester.
requesterRoomNo	varchar	10		Room number of requester.
createdDate	datetime	-		Current date of requester creates repair request.

Table 7 show the `repair_request` table that contains `repairId`, `requesterId`, `staffId`, `statusId`, `repairCategory`, `repairType`, `repairLocation`, `repairPriority`, `repairDescription`, `repairPhoto`, `repairReason`, `repairRemark`, `repairFeedback`, `repairBookingDate`, `repairStartTime`, `repairEndTime`, `repairDuration`, `repairModifiedDate`, `repairModifiedBy`, `repairIsConfirm` and `repairConfirmationDate`. The `repairId` is the primary key while the `requesterId`, `staffId` and `statusId` are the foreign key of `repair_request` table.

Table 7: Repair_Request Table

Attribute	Date Type	Size	Key	Description
repairId	int	4	Primary	ID for repair request.
requesterId	int	4	Foreign	ID of requester.
staffId	int	4	Foreign	ID of staff.
statusId	int	4	Foreign	ID of status information.
repairCategory	varchar	20		Category of repair request.
repairType	varchar	20		Type of repair request.
repairLocation	varchar	200		Location of repair request.
repairPriority	varchar	8		Priority of repair request.
repairDescription	nvarchar	500		Description of repair request.
repairPhoto	nvarchar	500		Photo of repair request.
repairReason	nvarchar	1000		Reason of repair request.
repairRemark	nvarchar	400		Remark of repair request.
repairFeedback	nvarchar	1000		Feedback of repair request.
repairBookingDate	datetime	-		Booking date of repair request with requester.
repairStartTime	datetime	-		Repair start time of repair request.
repairEndTime	datetime	-		Repair end time of repair request.
repairDuration	nvarchar	400		Repair duration of repair request.
repairModifiedDate	datetime	-		Modified date of repair request.
repairModifiedBy	nvarchar	200		Person who modified the repair request.
repairIsConfirm	bool	1		Validate repair request is confirmed.
repairConfirmationDate	datetime	-		The date when the requester confirmed the repair request.

Based on Table 8, the attributes of status_information table are statusId, statusName, and statusValue. The staffId is the primary key of status_information table.

Table 8: Status_Information Table

Attribute	Date Type	Size	Key	Description
statusId	int	4	Primary	ID for status.
statusName	nvarchar	24		Name of status.
statusValue	int	4		Value of status.

4. Results and Discussion

In this section, the testing has conducted, and the test case has summarized.

4.1 Testing

The testing phase is an important phase that performs after the implementation phase. Testing is compulsory to ensure the requirement has fulfilled and make sure the system modules are functional and well perform [8].

User interface design usually refers to the visual layout of the element that the system interacts with the user. The user interface design has to attractive and well functional to the user. An interface design must be listed for the user to find elements in a logical place to achieve the high usability of the system. The interfaces of the Ixora Apartment Repair Management System have tested, as shown in Appendix F.

The modules of the Ixora Apartment Repair Management System have tested. A test case has summarized based on the modules of the Ixora Apartment Repair Management System in Appendix G. Based on Appendix G, the overall results of the test case are in the pass state. The modules have presented and function according to the expected outcomes.

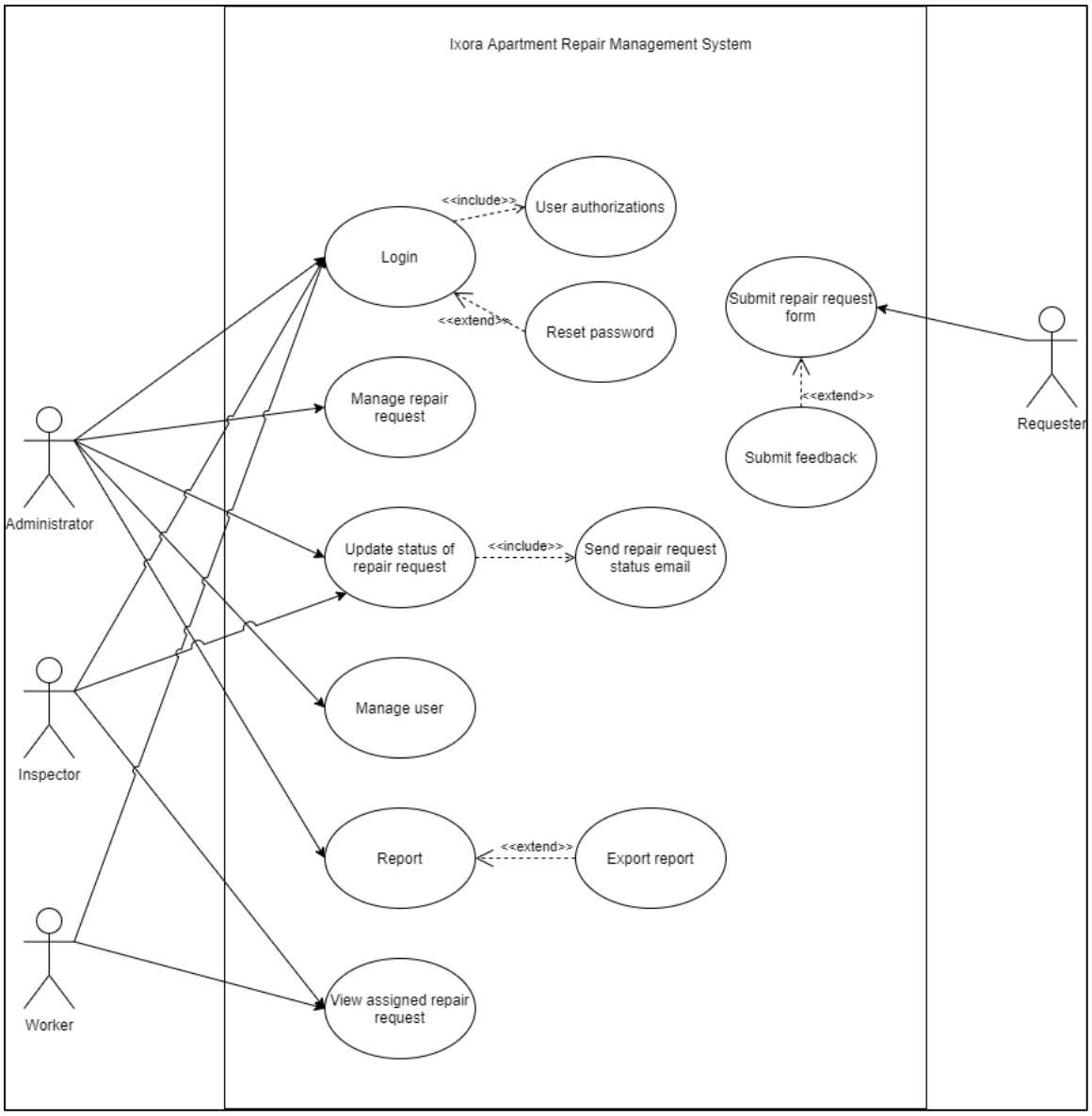
5. Conclusion

To sum up, the Ixora Apartment Repair Management System has successfully developed and achieved the objectives. The Ixora Apartment Repair Management System has implemented using the waterfall model and has developed according to the design on the analysis and design phase. Moreover, the system tested in the testing phase and summarized. Some suggestions have provided for future improvements, although the system has operable according to the requirements and achieves its objectives by providing advantages and convenience to the requester and staffs. The first suggestion for the system is the repair request management can filter by date will be easier to distinguish between the old and new incoming repair request. Moreover, the system able to validate user on user management will prevent duplicated user account saved to the system. Lastly, allow requesters to book the date for accommodation repair directly on the system is suggested in order to eliminate the step of contacting the requester.

Acknowledgement

I would like to would like to thank the Faculty of Computer Science and Information Technology, Universiti Tun Hussein Onn Malaysia for its support and encouragement throughout the process of conducting this study.

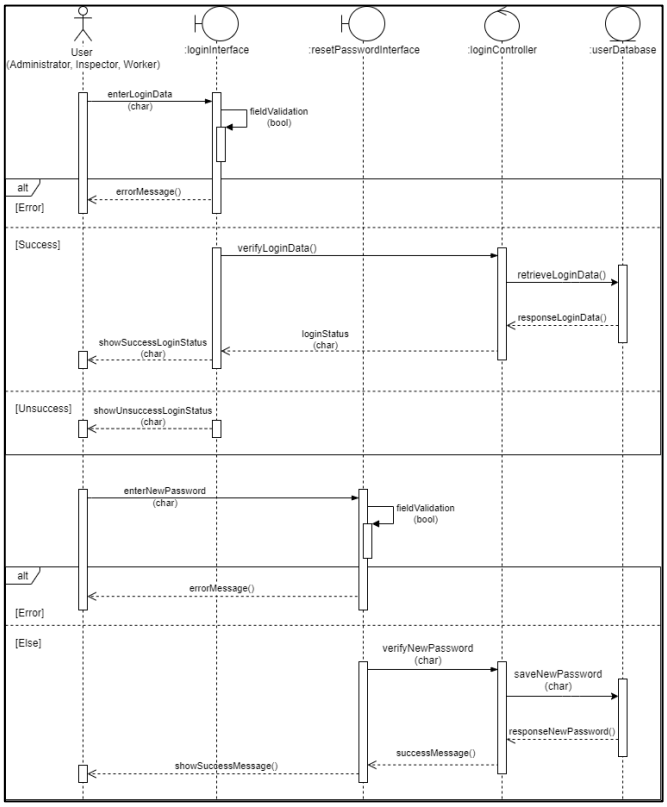
Appendix A (Use Case Diagram)



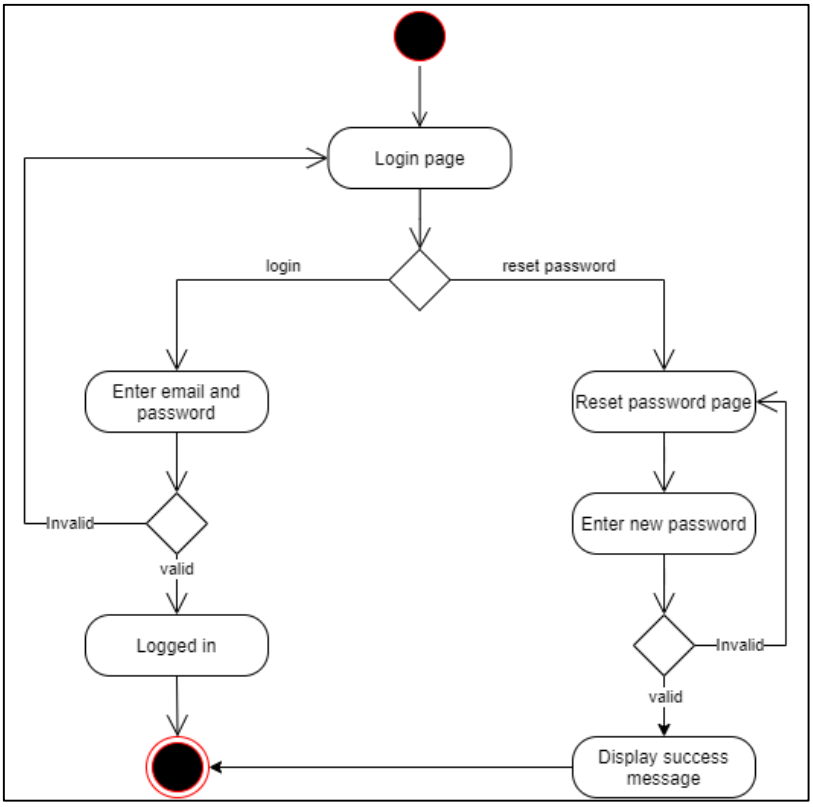
Appendix B (Activity Diagrams and Sequence Diagrams)

Login and reset password Function

Sequence Diagram

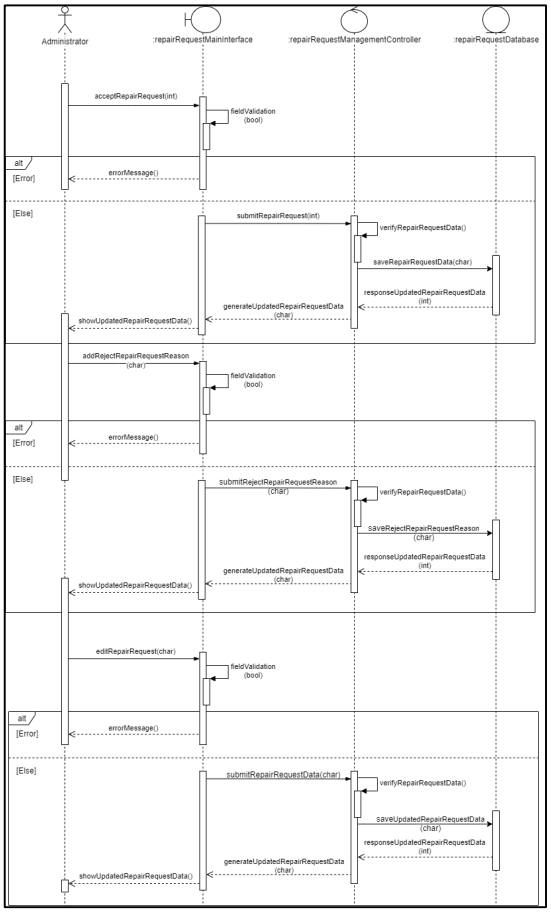


Activity Diagram

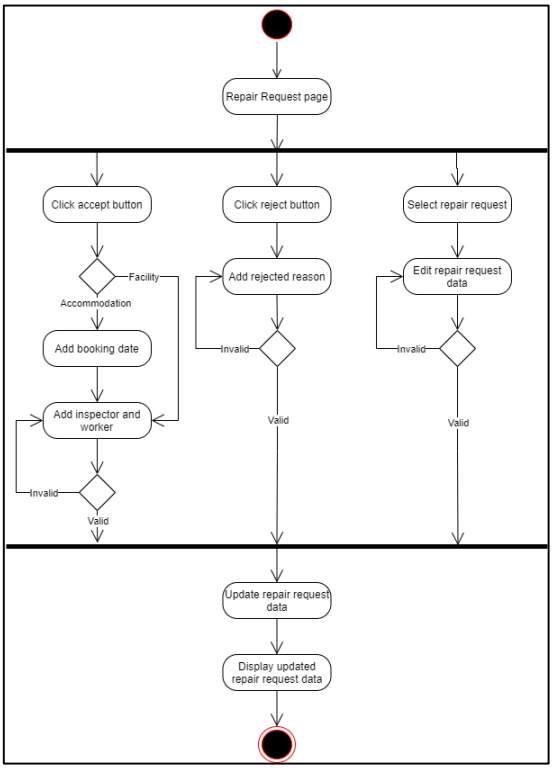


Manage repair request Function

Sequence Diagram

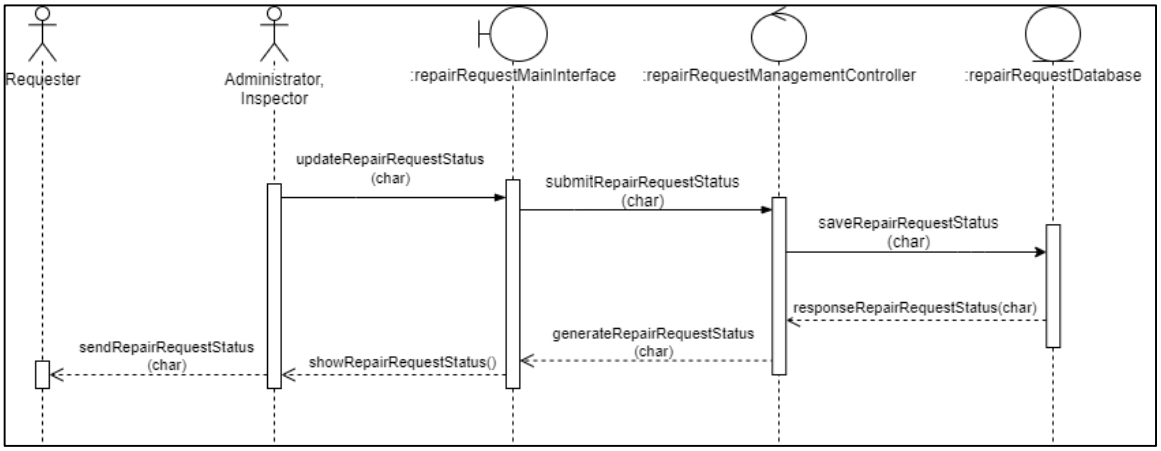


Activity Diagram

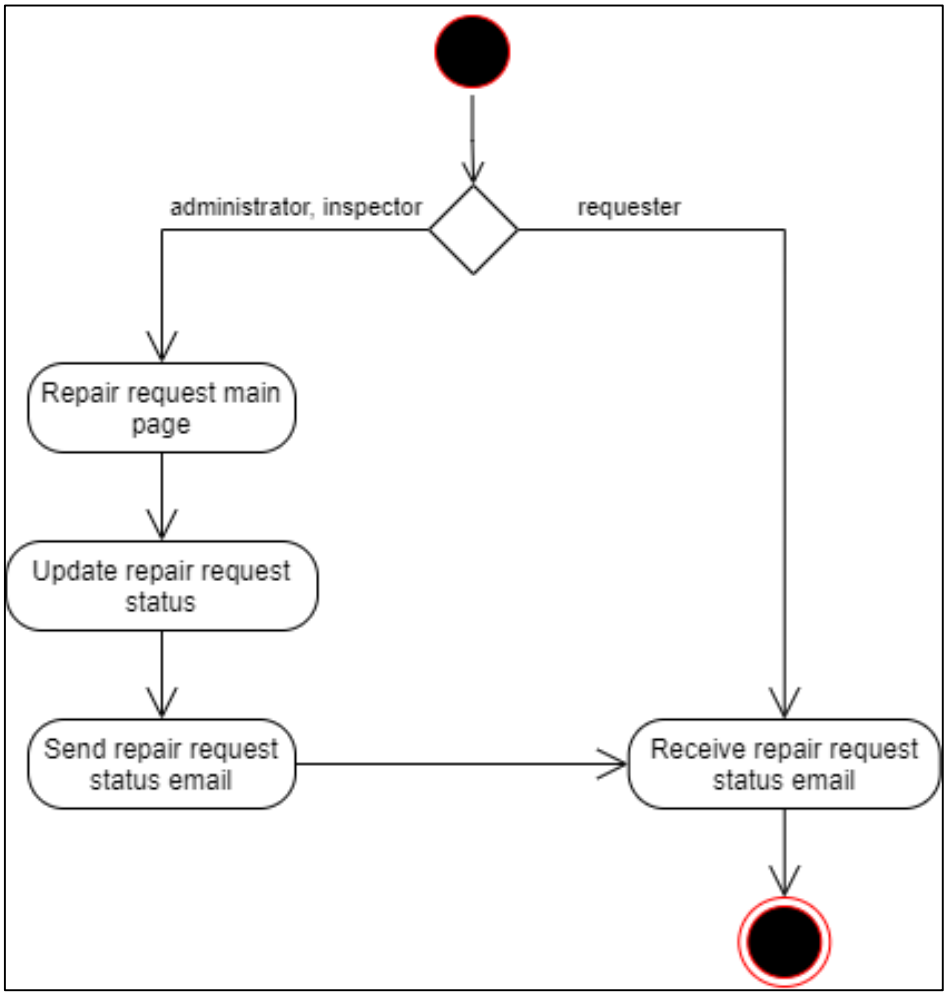


Update status of repair request Function

Sequence Diagram

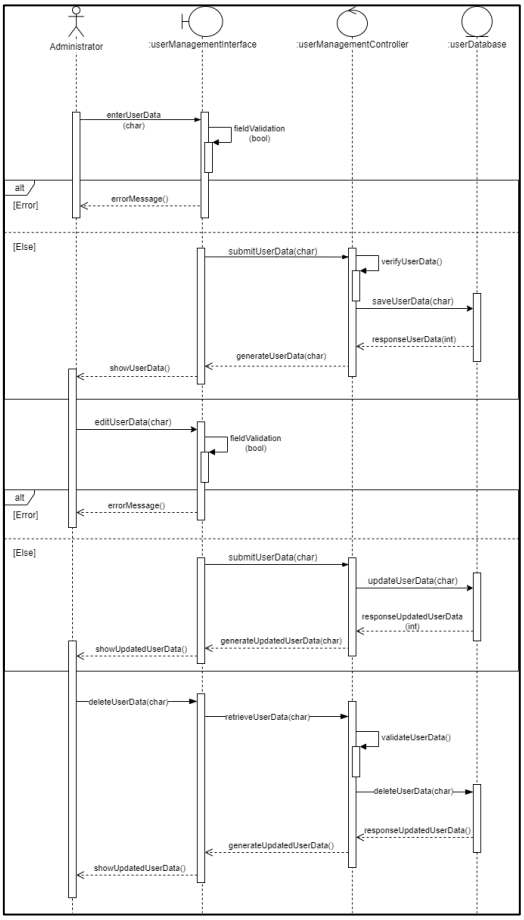


Activity Diagram

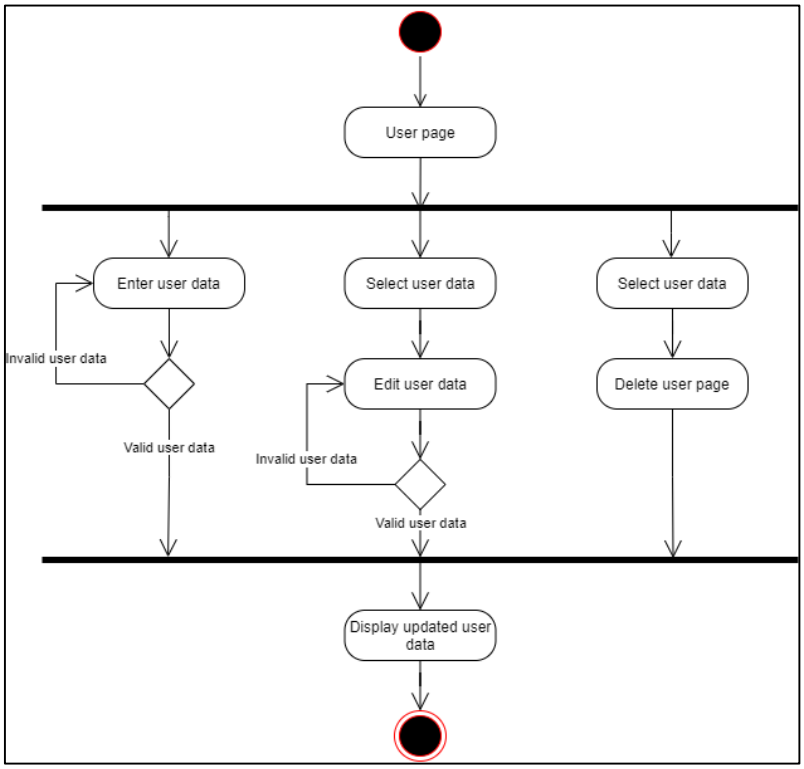


Manage user Function

Sequence Diagram

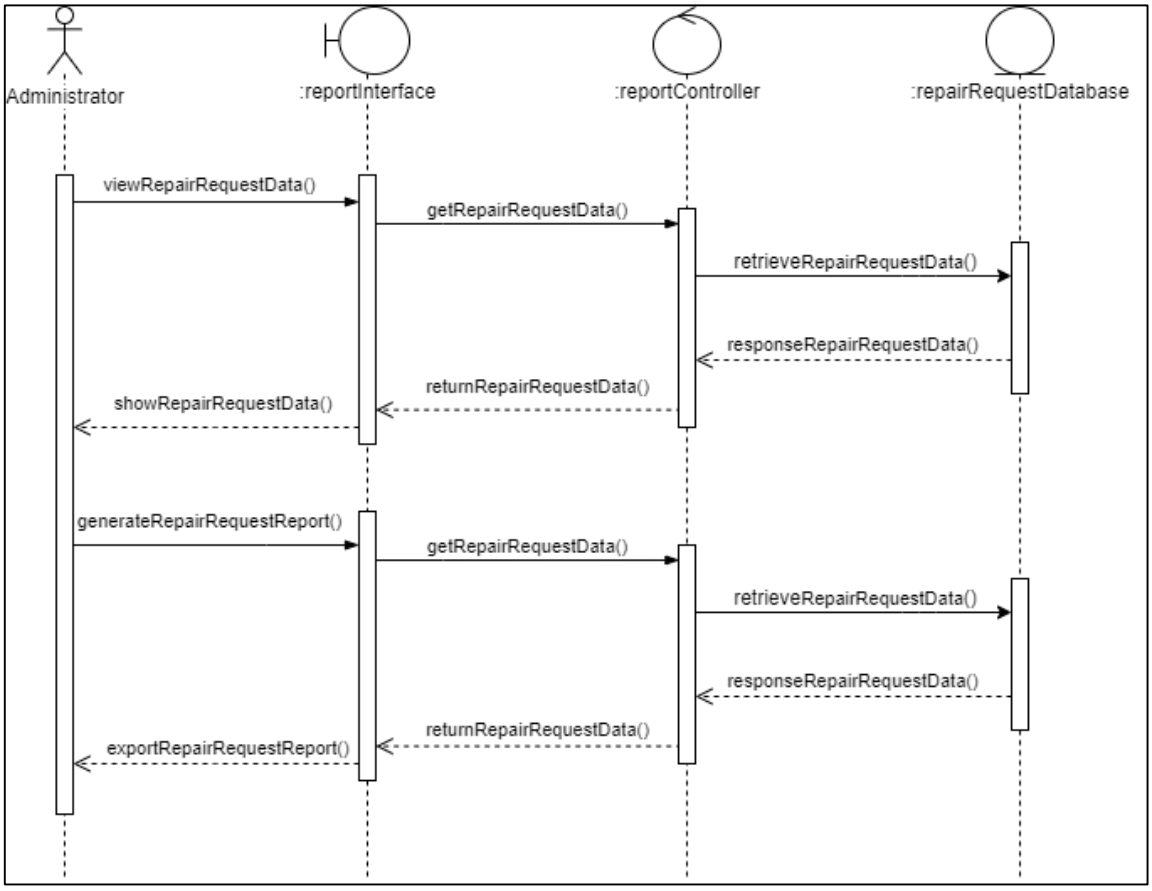


Activity Diagram

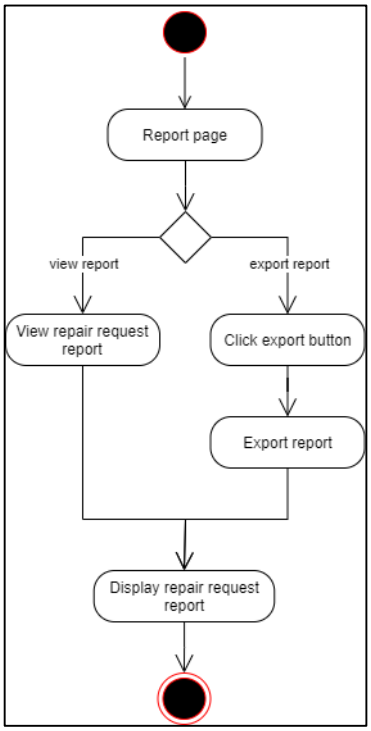


Report Function

Sequence Diagram

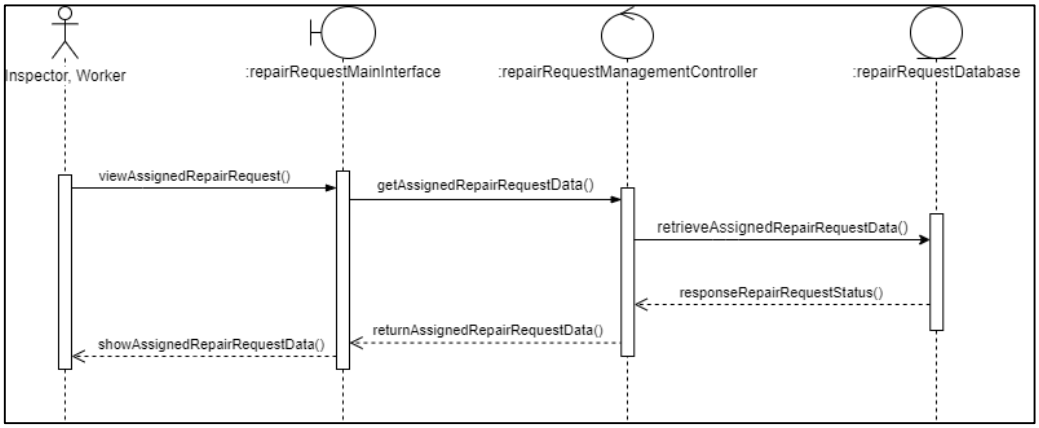


Activity Diagram

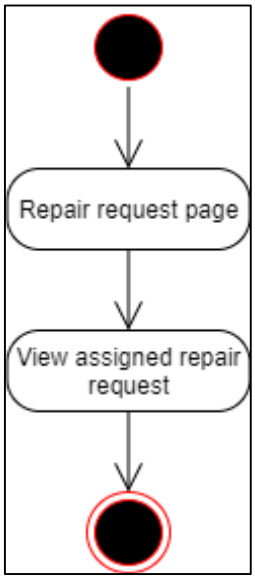


View assigned repair request Function

Sequence Diagram

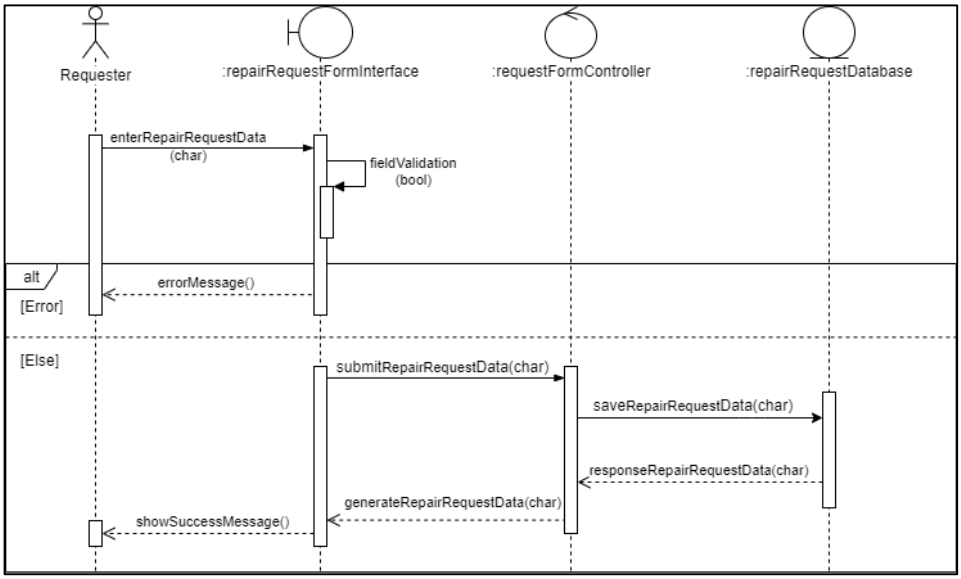


Activity Diagram

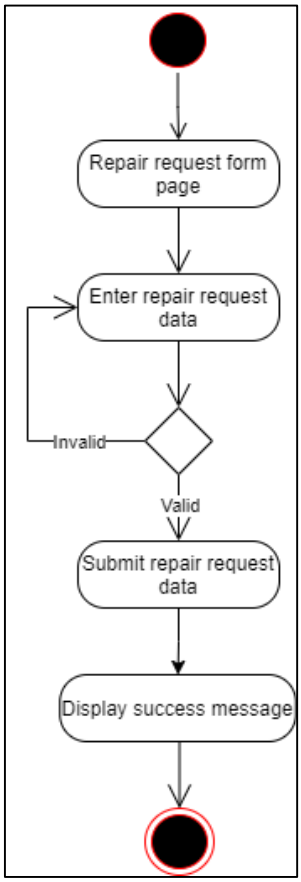


Submit repair request form Function

Sequence Diagram

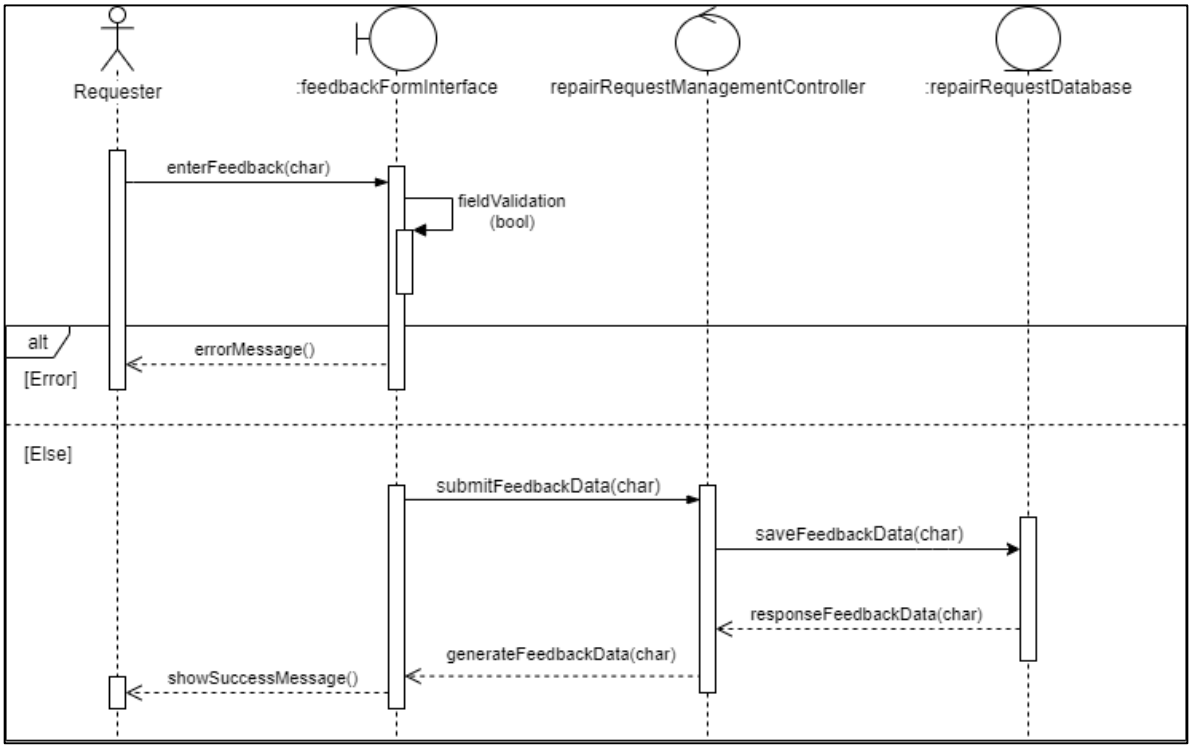


Activity Diagram

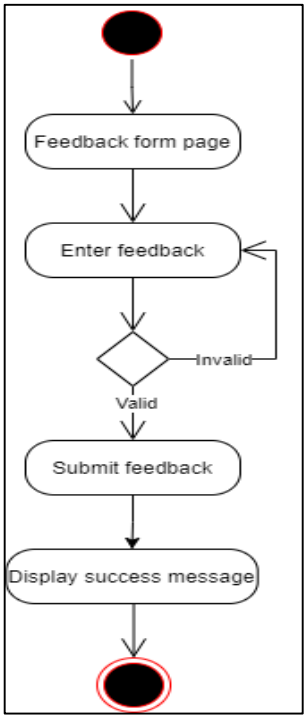


Submit feedback Function

Sequence Diagram



Activity Diagram



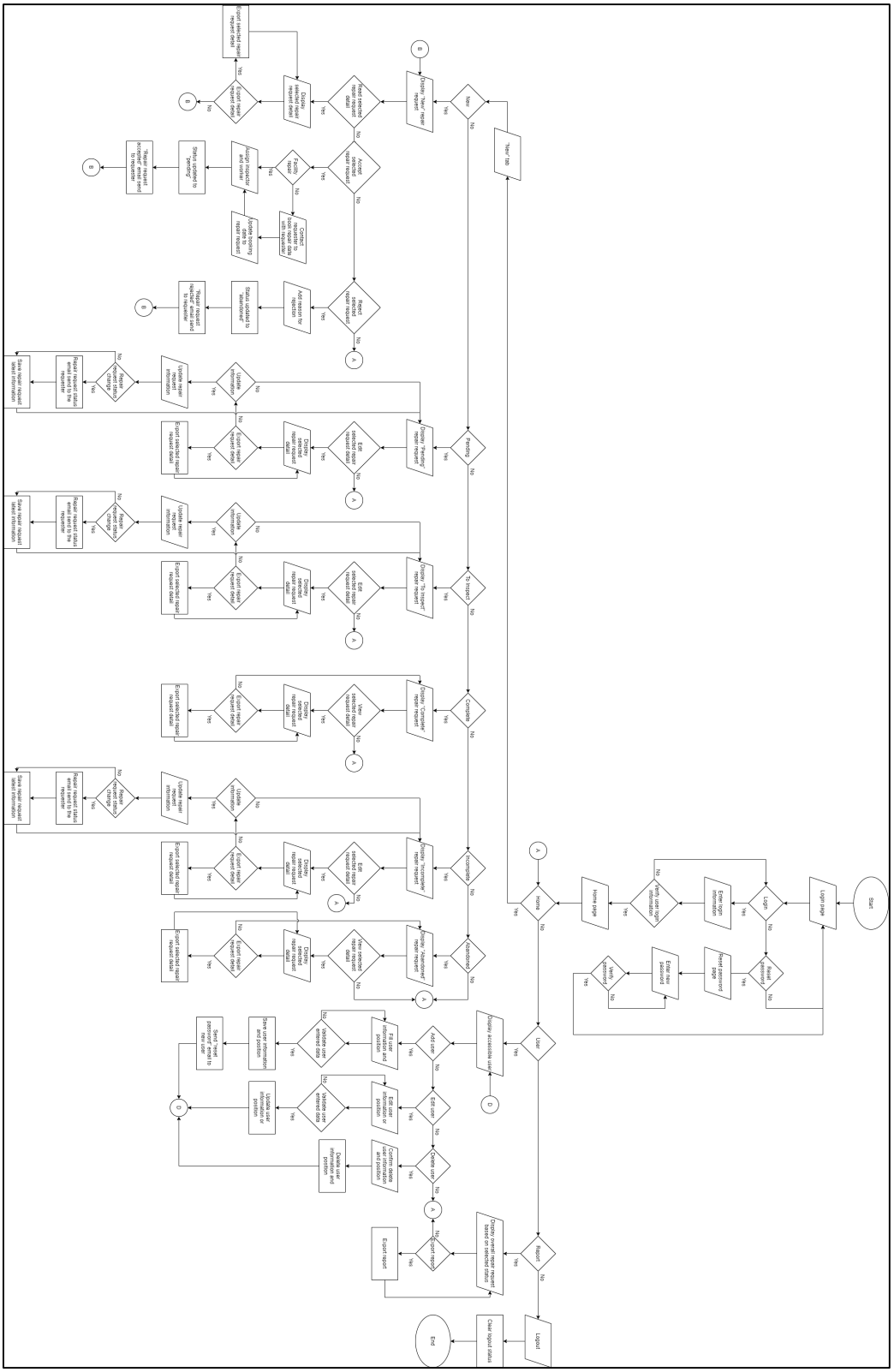
Appendix C (Requirement Traceability Matrix)

Requirement	Software Requirement Specification	Description
Login REQ_100	REQ_101	System shall request user to enter email and password.
	REQ_102	System shall be able to verify user.
	REQ_103	System shall redirects the user to the repair request main page once the login process successful.
	REQ_104	System display error message and request user to re-enter email and password once the login process unsuccessful.
Reset password REQ_200	REQ_201	System request user to enter a valid email once reset password link has clicked.
	REQ_202	System displays success message when user entered a valid email.
	REQ_203	System displays error message when user entered an invalid email.
	REQ_204	System shall request user to enter new password and confirm password.
	REQ_205	System shall be able to validate new password and confirm password.
	REQ_206	System shall be able to update new password to database.
	REQ_207	System display success message once the reset password process successful.
	REQ_208	System display error message and request user to re-enter the password when the password is not match.
Repair request management REQ_300	REQ_301	System shall request administrators to add booking date, inspector, and worker to the repair request after accepted the repair request.
	REQ_302	System shall request administrators to add rejected reason to the repair request.
	REQ_303	System shall allow administrators and inspectors to edit the repair request data.
	REQ_304	System shall validate user entered data.
	REQ_305	System shall be able to updates the repair request data to the database once the required filed validation process successful.
	REQ_306	System displays error message to administrators when the required filed validation process unsuccessful.
Report REQ_400	REQ_401	System shall display repair request report based on selected status.
	REQ_402	System shall be able to export repair request report to pdf file.
User management REQ_500	REQ_501	System shall allow administrator to add user information.
	REQ_502	System shall allow administrator to edit user information.
	REQ_503	System shall allow administrator to delete user information.
	REQ_504	System shall be able to add new user information to the database once the required filed validation process successful.

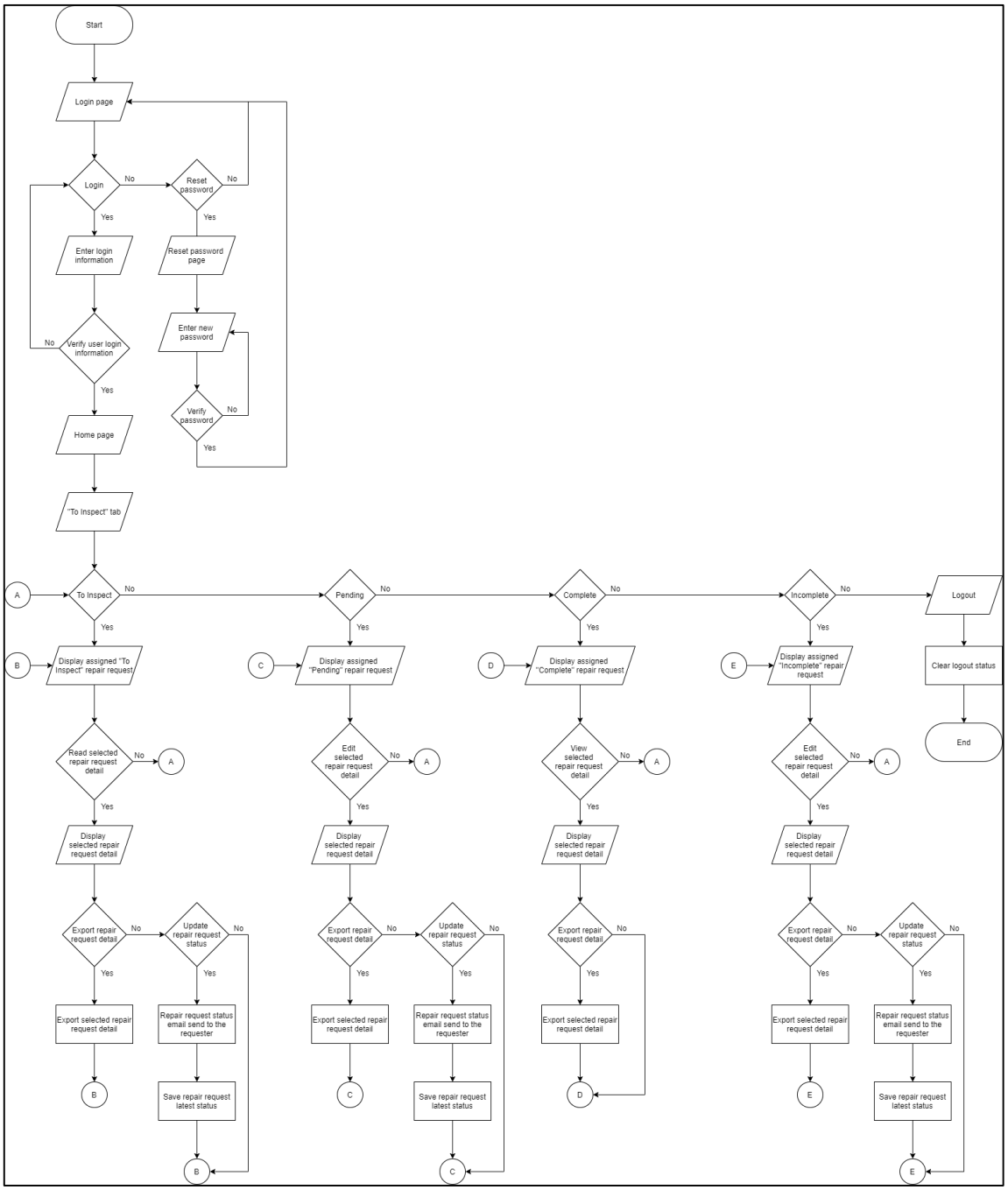
	REQ_505	System shall be able to updates the user information to the database once the required filed validation process successful.
	REQ_506	System shall be able to deletes the user information from the database.
	REQ_507	System displays error message to administrators when the required filed validation process unsuccessful.
Create Repair Request Module REQ_600	REQ_601	System shall request requester to add repair request information and requester information.
	REQ_602	System shall validate user entered data.
	REQ_603	System shall be able to save new repair request information to the database once the required filed validation process successful.
	REQ_604	System displays error message to requester when the required filed validation process unsuccessful.
Feedback Module REQ_700	REQ_701	System shall request requester to provide feedback.
	REQ_702	System shall validate user entered data.
	REQ_703	System shall be able to save feedback to the database once the required filed validation process successful.
	REQ_704	System displays error message to requester when the required filed validation process unsuccessful.
Email Repair Request Status Module REQ_800	REQ_801	System shall send email to requester after the status of repair request updated.*

Appendix D (Flowchart)

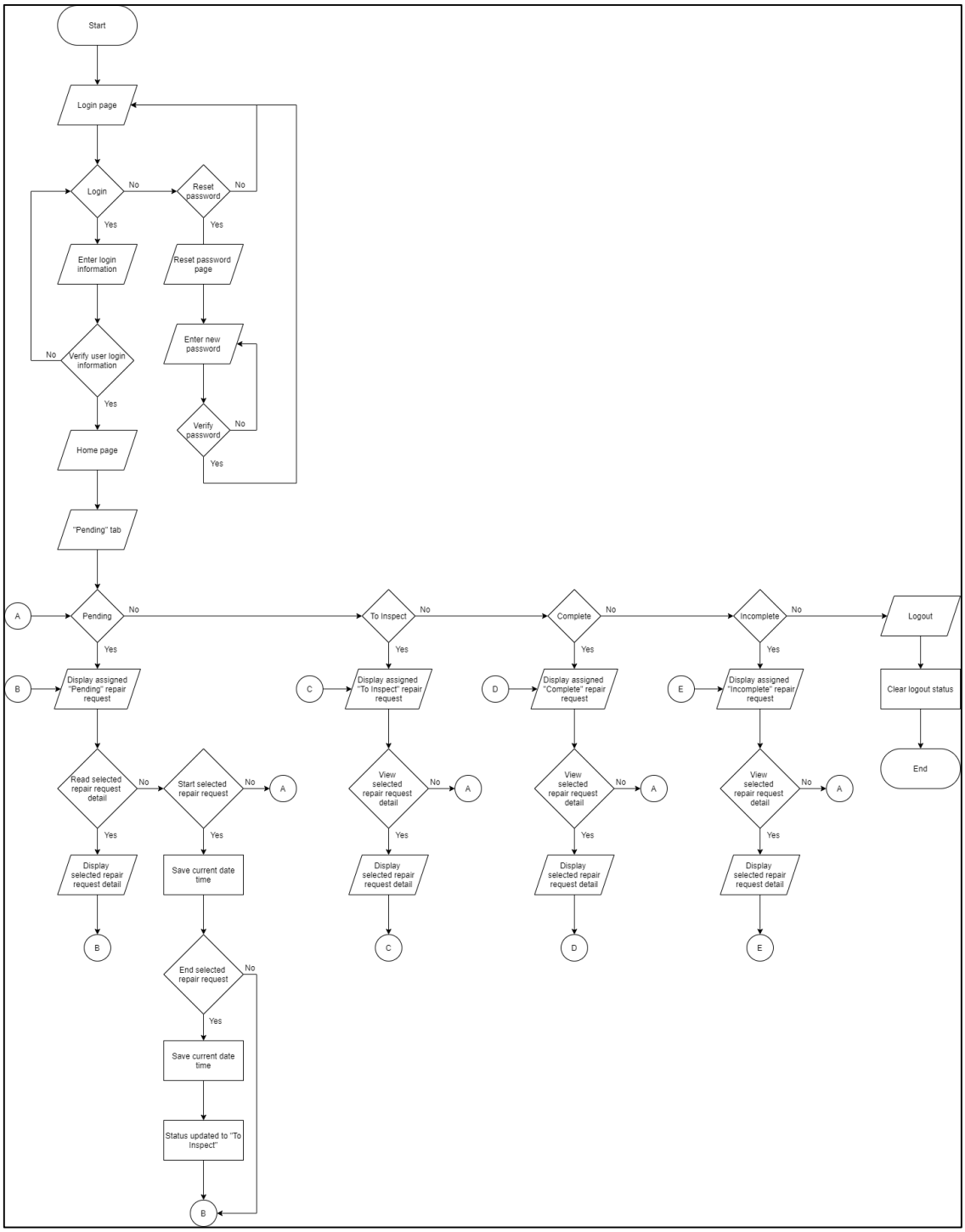
Administrator Flowchart



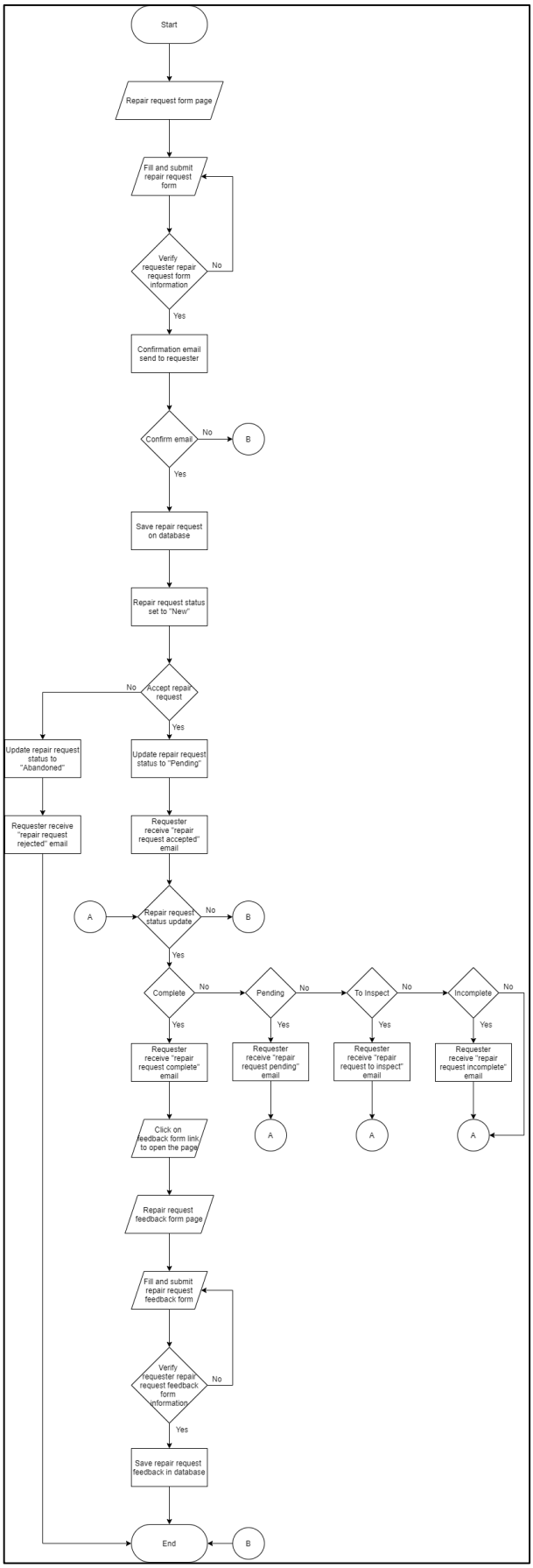
Inspector Flowchart



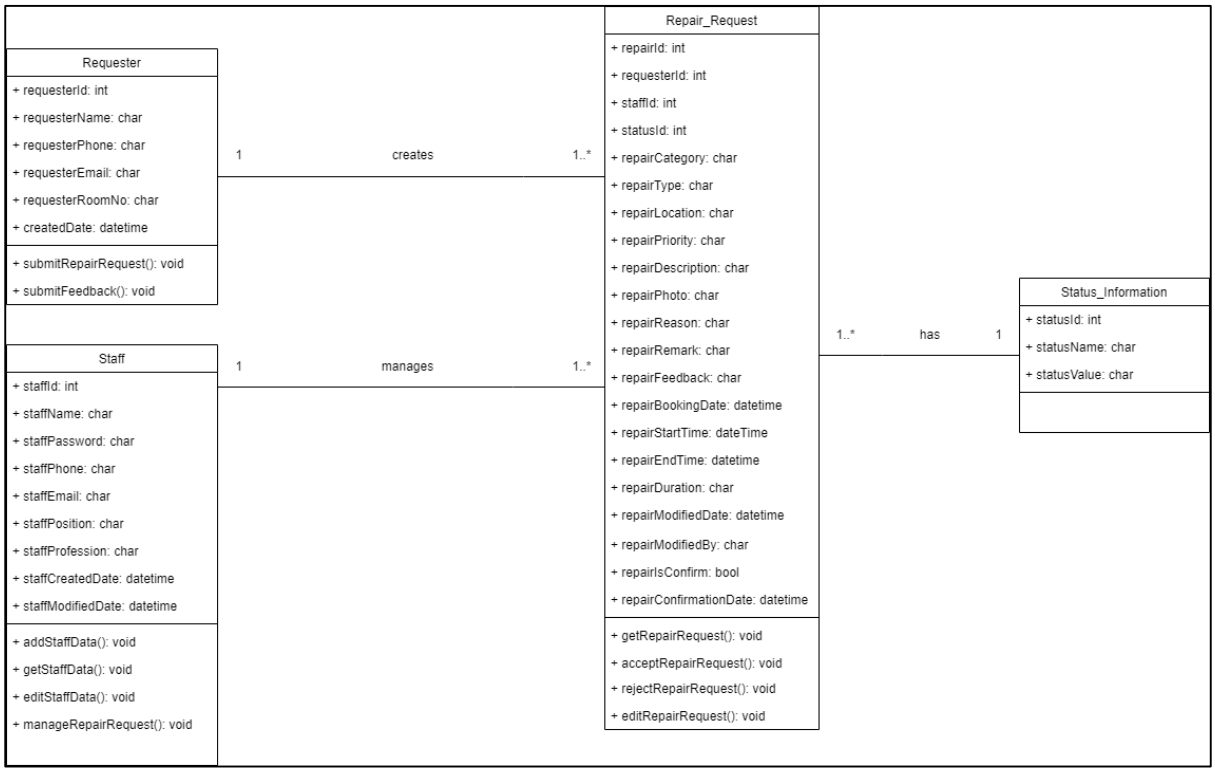
Worker Flowchart



Requester Flowchart

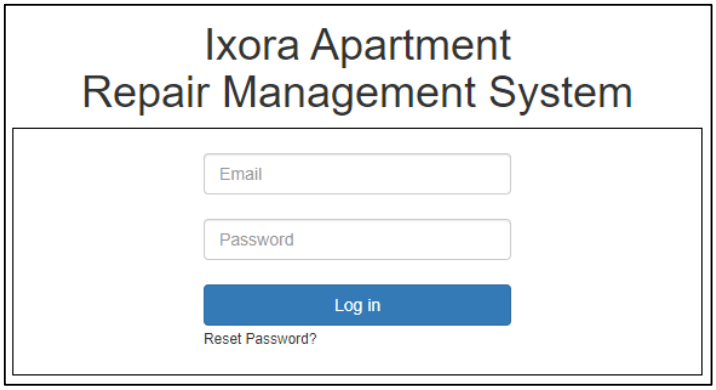


Appendix E (Class Diagram)

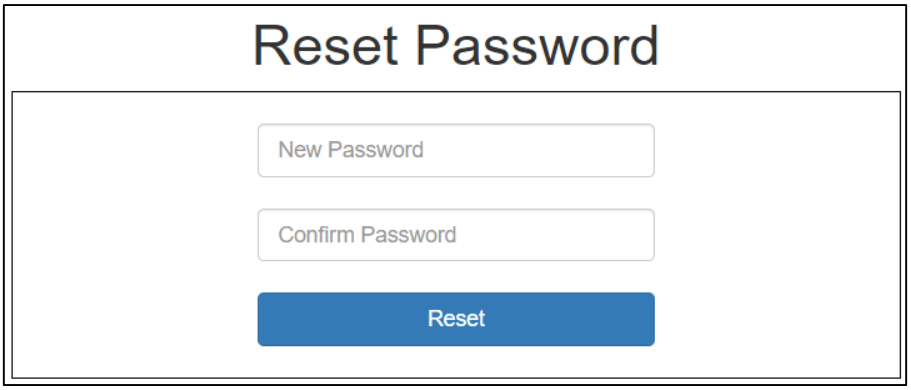


Appendix F (User Interface)

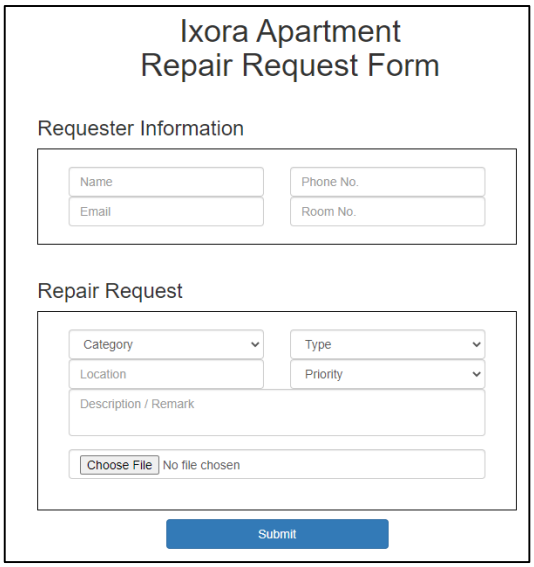
Login page



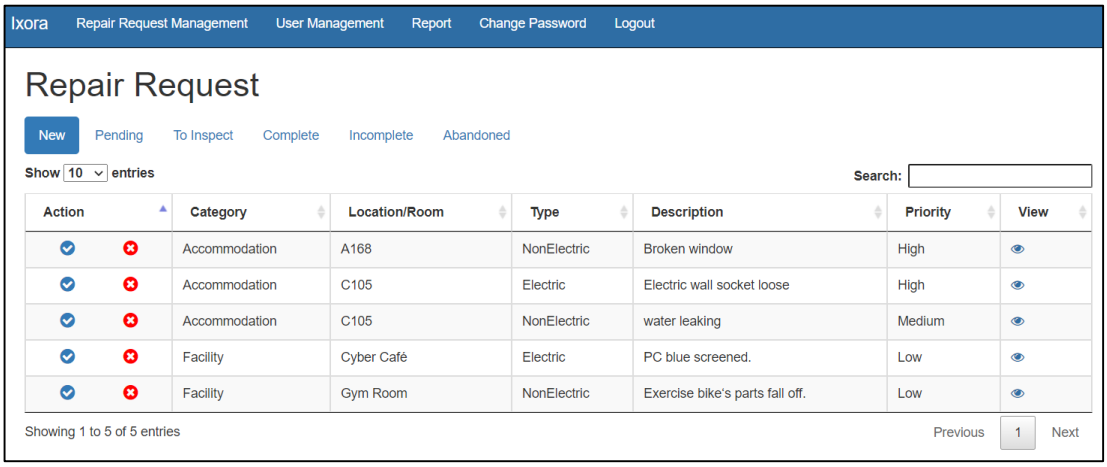
Reset password page



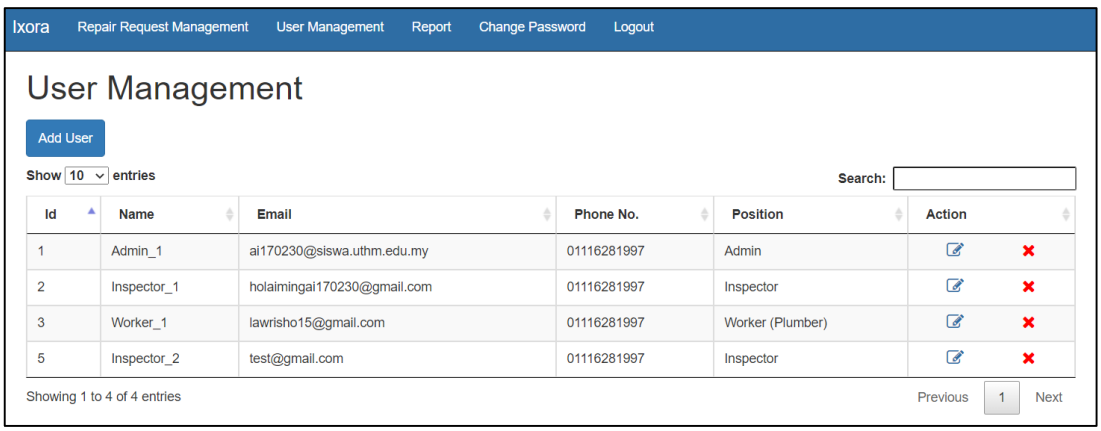
Repair request form page



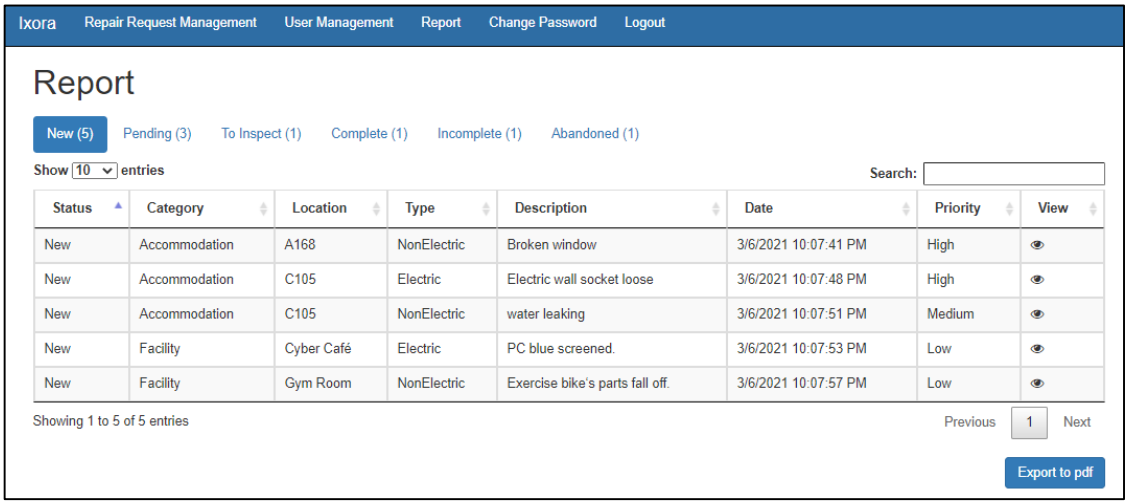
Repair request management page



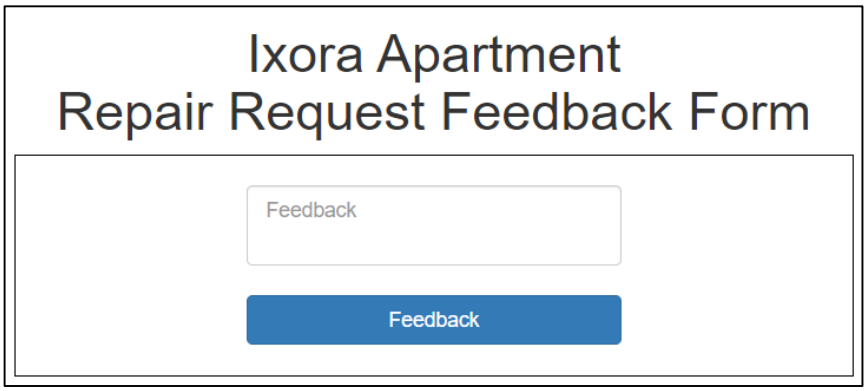
User management page



Report page



Feedback form page



Appendix G (Test Case Summarization)

Test Case	Software Requirements	Description	Status
		Test Case Login (TC_100)	
TC_101	REQ_101 REQ_102 REQ_103	User successfully login to the system with valid email and password.	PASS
TC_102	REQ_104	User enters an invalid email or password.	PASS
		Test Case Reset Password (TC_200)	
TC_201	REQ_201 REQ_202	User enters valid email.	PASS
TC_202	REQ_203	User enters an invalid email.	PASS
TC_203	REQ_204 REQ_205 REQ_206 REQ_207	User enters a same new password and confirm password.	PASS
TC_204	REQ_208	User enters a different new password and confirm password.	PASS

Test Case Repair Request Management (TC_300)			
TC_301	REQ_301	The administrator accepts repair request.	PASS
TC_302	REQ_302	The administrator rejects the repair request.	PASS
TC_303	REQ_303 REQ_304 REQ_305	The administrator or the inspector edit and update the repair request data.	PASS
TC_304	REQ_306	The administrator or the inspector update an empty repair request data on the required field.	PASS
Test Case Report (TC_400)			
TC_401	REQ_401	The administrator selects a status.	PASS
TC_402	REQ_402	The administrator clicks the export button to exports the report.	PASS
Test Case User Management (TC_500)			
TC_501	REQ_501 REQ_504	The administrator adds a new user.	PASS
TC_502	REQ_502 REQ_505	The administrator edits user information.	PASS
TC_503	REQ_503 REQ_506	The administrator deletes user information.	PASS
TC_504	REQ_507	The administrator saves empty user information on the required field.	PASS
Test Case Create Repair Request (TC_600)			
TC_601	REQ_601 REQ_602 REQ_603	The requester enters repair request information and requester information.	PASS
TC_602	REQ_604	The requester submits empty repair request information or requester information on the required field.	PASS
Test Case Feedback (TC_700)			
TC_701	REQ_701 REQ_702	The requester enters feedback.	PASS
TC_702	REQ_703 REQ_704	The requester submits an empty feedback form.	PASS
Test Case Email Repair Request Status (TC_800)			
TC_801	REQ_801	The administrator or inspector update the status of the repair request.	PASS

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