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FINAL REPORT

SINTOK MONITORING AND SURVEILLANCE WEBAPP

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1. SYSTEM OVERVIEW

The target user for using the monitoring and surveillance system is the electronic company's owner in Changlun, which named as Chang Sin Letrik Sdn Bhd. It allows to use the services provided by the application to monitor activity and security all the time around the shop.

The monitoring and surveillance web app is a system which allowing the use of video cameras to monitor the interior and exterior of a property and transmitting the signal to a monitor or set of monitors. In order to protect our security of system, the users have to register their account first before using the system. It is an affordable system that manageable and accessible via an internet connection using the web-based and mobile app. This system is easy to implement by owners from any laptop and mobile devices.

With the rise of criminal cases such as shoplifting and employee theft in the printing shop, shop owner start concerned and worried as it already brings a huge negative impact on the business. Even having 24-hours security guards also cannot stop potential criminals in their tracks. Instead, by installing this system in high-risk areas of a business, it will provide you with 24/7 surveillance even when you aren't there. This means that your shop will be monitored after the working hours and when you are in miles away. If criminal activity is detected, the authorities will be notified and they will be able to take action by viewing back the recorded videos as an evidence.

Apart from that, the shop owner faces the problem of managing and monitoring all camera accessories that are required in the business. They have to count the stock manually after the working hours to prevent their accessories out of stock. It will be a serious issue if they track wrongly as it will affect the entire business process. So, the system will also provide the function to record the in and out of the products to avoid unexpected occurring.

Since the monitoring and surveillance system has been considered as an important facility in today's business, here are the possible stakeholders involved in developing it. The stakeholders can be divided into two groups which are internal and external. The examples of internal stakeholders are sponsor, development team, support staff, internal

users and manager whereas external stakeholders are the competitors, suppliers, government officials, concerned citizens and external users.

1.1 Purpose of the system

The purpose of having this system in the business is:

i. Deter crime

The sight of the system infers an air of danger and the presence of the law which help to deter anyone planning to carry out a crime from doing so. No one wants to get caught and they definitely don't want their face or evidence of their crime got recorded by the camera. If your system is visible and well-signposted, they could be the ideal deterrent to send crime rates plummeting.

ii. Protect the employees

The system can record the videos of employee abuse or harassment towards other employees, which can be used as evidence against the antagonist. It also protects employees away from the villains by monitoring each of the visitor who enters the building and keep an eyes on their suspicious activity in the shop through the camera.

iii. Keep your employees honest

The system will prevent wrong doing by company employees as it can be used to monitor sensitive material, goods and assets as well as vulnerable areas of a facility. Even if something happens, the recorded video will prevent wrong accusation and lack of trust among all staff.

iv. Cover all the entrances

The camera in the entry points should be placed on the sides as opposed to directly in front of the door to ensure that the person who enters the door does not block your view. To increase your viewing areas, use outdoor camera as a backup for the view of the entrances. This will ensure that your view to your entrance is maximized and in case entrance cameras are blocked.

v. Maintain records

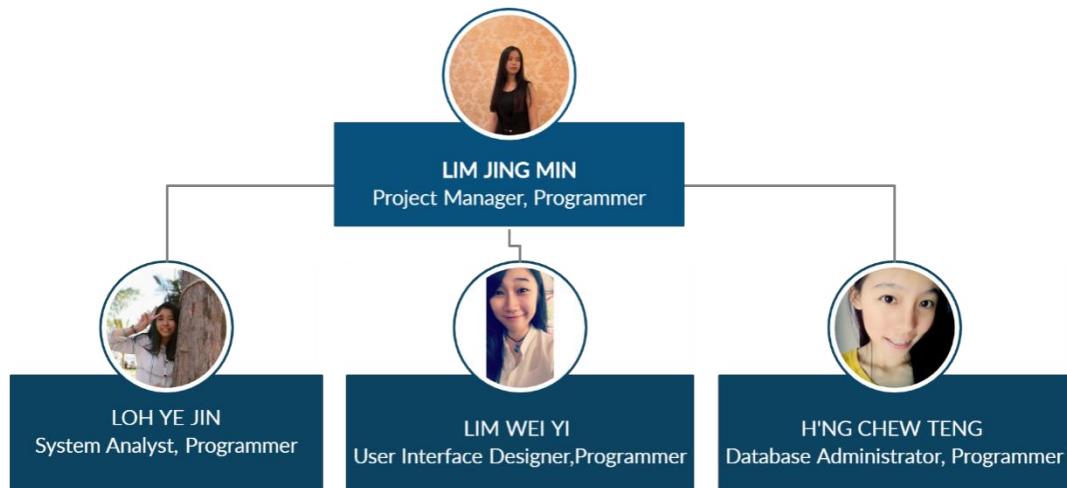
Whether it is a crime or a minor tiff, your camera will record it, thereby make it easy for you to investigate the actual happenings. You can do use it by simply looking up your security records systematically for example as per the date and the time of the event.

1.2 Scope

This project will be developed using HTML, CSS and PHP. Framework like bootstrap might be used during development, as for IDE our team will be using sublime text as it is easy to use for text editor and also we will be using XAMPP to simulate server, client architecture so our website will be run flawlessly.

2. SYSTEM DEVELOPMENT MANAGEMENT

2.1 Project Organization



Job Roles	Description
Project Manager	<ul style="list-style-type: none">• Responsible in leading a project from its inception to execution phase.• Responsible in planning, executing and managing the teams to prioritize the project work plans with objectives.
System Analyst	<ul style="list-style-type: none">• Have well-understanding on the system that the client currently in use, analysis the errors and provides solution for stakeholders in order to meet the specified requirements.• Responsible to transform user requirements into technical specification.
User Interface Designer	<ul style="list-style-type: none">• Create a high aesthetics and interactive design which enable to increase user experience when using the project.• Enable to conceptualize the designs and convey project plans to clients and team members efficiently.
Database Administrator	<ul style="list-style-type: none">• Monitoring the access, consistency and integrity of database.

	<ul style="list-style-type: none">• Responsible for design and implementation of redundant systems, policies, and procedures for disaster recovery.
Programmer	<ul style="list-style-type: none">• Responsible in transformation of the design into a set of instruction by using coding.• Troubleshooting the system errors and ensure errors free in the outcome of project.

2.2 Methodology

The Rational Unified Process (RUP) is the methodology that will be used in our project. RUP is the methodology that used mostly in the areas of web application development. It is often used for developing web applications and websites. This methodology used the object-oriented approach in its design and the use of Unified Modeling Language (UML) notation is designed and documented to illustrate the flows of process.

The RUP methodology divides the development process into four distinct phases which are business modeling, analysis and design, implementation, testing and deployment.

2.2.1 Inception phases

In this stage, the developer will describe the scope of the development project as well as a definition of the business case and the team members will make a decision whether the project is worth doing or if it is even possible. This is important to formulate the scope of project and determine the resources that will be needed in the process.

2.2.2 Elaboration phases

In this stage, the developer will take the outline of all the features of the system in detail to determine its architecture foundation and make an evaluation of the architecture in relation to the project. The

developer can analyze the risk and cost that needed to spend during the progress of project around the budget effectively.

2.2.3 Construction phases

In this stage, the development of the project is completed. The design and source code of the project are developed. Project will be tested to ensure whether the project has met the objective and requirements of the stakeholder.

2.2.4 Transition phases

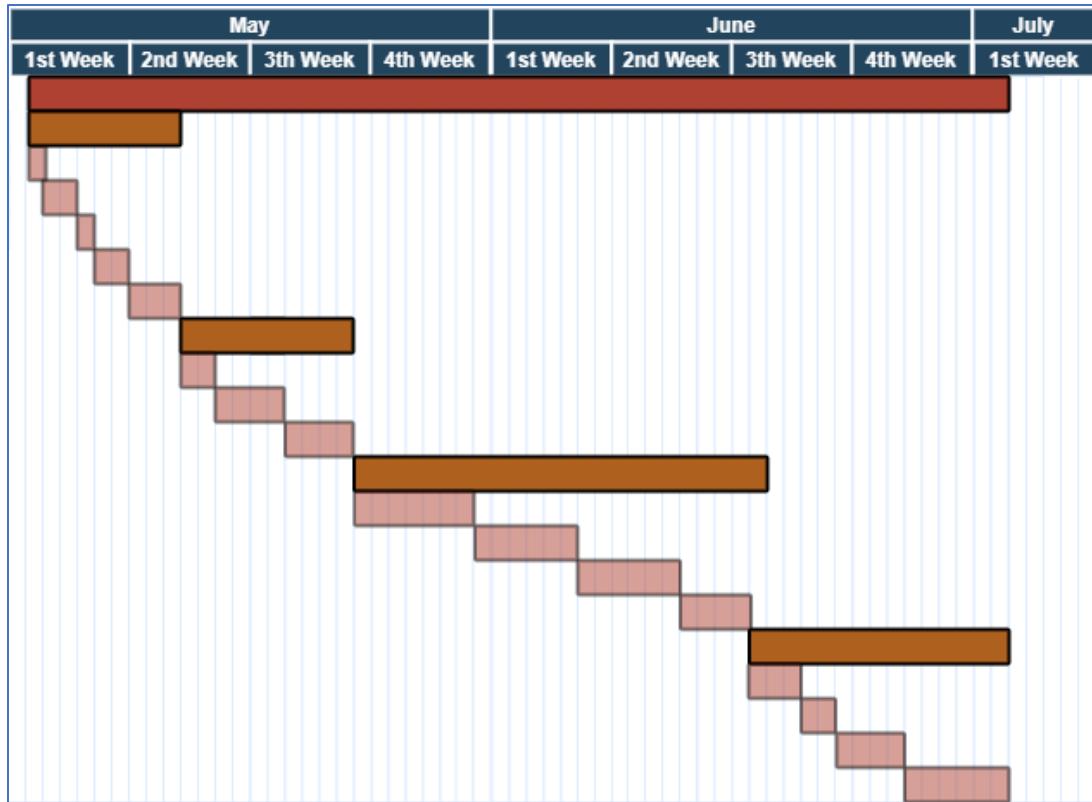
In this stage, the developer will bring the completed project to the public. Final adjustments or updates will be made based on feedback from the end users.

2.3 Schedule and milestone

2.3.1 Schedule

	Task Name	Duration	Start	ETA
	Complete project execution	63 days	08.05.2020	09.07.2020
1	Inception	9 days	08.05.2020	16.05.2020
1.1	Scheduling Resources	1 day	08.05.2020	08.05.2020
1.2	Cost and Time Estimation	2 days	09.05.2020	10.05.2020
1.3	Planning	1 days	11.05.2020	11.05.2020
1.4	Risk Management	2 days	12.05.2020	13.05.2020
1.5	Prototypes Development	3 days	14.05.2020	16.05.2020
2	Elaboration	12 days	17.05.2020	28.05.2020
2.1	Analysis of Problem Domain	2 days	17.05.2020	18.05.2020
2.2	Use Case Diagram Development	5 days	19.05.2020	23.05.2020
2.3	System Architecture Development	5 days	24.05.2020	28.05.2020
3	Construction	25 days	29.05.2020	22.06.2020
3.1	System Build	8 days	29.05.2020	05.06.2020
3.2	System Operational Manual	6 days	06.06.2020	11.06.2020
3.3	Use Manual	6 days	12.06.2020	17.06.2020
3.4	Test Cases	5 days	18.06.2020	22.06.2020
4	Transition	17 days	23.06.2020	09.07.2020
4.1	Training	3 days	23.06.2020	25.06.2020
4.2	Beta Testing	2 days	26.06.2020	27.06.2020
4.3	Analysis of User's Review	5 days	28.06.2020	02.07.2020
4.4	Supporting and Maintaining Product	7 days	03.07.2020	09.07.2020

2.3.2 Gantt Chart



3. SIZE & COST ESTIMATION

3.1 Software Size

Item	
Lines of Codes (count or use any tool to calculate LOC- exclude comments)	2000
Total Classes	10
Total Methods	25

3.2 Software Cost

Object Type	Simple	Medium	Difficult
Screen	2	4	3
Report	2	5	8
Program Modules	-	-	10

Labor cost per month: RM 2000.00

- Productivity = 7
- Percentage of reuse software = 50%

Count object points

$$\begin{aligned}\text{Object points} &= (2*2) + (4*5) + (3*8) + 10 \\ &= 58\end{aligned}$$

1. Calculate Person-Months (PM)

$$\begin{aligned}\text{Formula; PM} &= (\text{NAP} * (1 - \% \text{ reuse}/100)) / \text{PROD} \\ &= (58 * (0.5)) / 7 \\ &= 4.14 \text{ PM}\end{aligned}$$

2. Total Cost

Below is the total cost involved in our project:

	Item		RM
	<u>Effort Cost</u>		
1.	Total Salary		
	263043	(42 * RM 10)	420.00
	263518	(40 * RM 10)	400.00
	261307	(41 * RM 10)	410.00
	263117	(40 * RM 10)	400.00
	<u>Operating cost</u>		
2.	Travel		200.00
3.	Paper (stationerries)		150.00
4.	Printing		80.00
5.	Etc.		100.00
	TOTAL COST		2160.00

Name of team members	Requirements /Interface Design			Requirements /Interface Design		Preliminary Design		Prototype Coding					Total hours work spent (in hours)	
				Interface Coding/ Testing/ Coding-Pair Programming										
	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14		
1. 263043	2	3	2	1	4	4	6	3	6	5	3	3	42	
2. 263518	2	1	3	2	3	5	5	3	5	6	3	2	40	
3. 261307	1	2	4	2	3	5	6	3	5	4	3	3	41	
4. 263117	1	2	3	2	4	4	4	4	6	4	4	2	40	

4. SOFTWARE TOOLS & PROGRAMMING LANGUAGE

No.	Item and Vendor	Version	Description/Purpose
1.	Windows 10 Pro [Microsoft Corporation]	1909	Operating System
2.	Microsoft Word [Microsoft Corporation]	2019	Documentation tool
3.	CPanel & WHM	78	Integrated development environment
4.	Notepad++	7.8.6	Text Editor
5.	PHP		Programming language
6.	JavaScript		Programming language
7.	Adobe Photoshop CS6[Adobe]	21.1.2	Photo/graphic editing tool
8.	XAMPP	7.2.30	DBMS
9.	StarUML [MKLab]	5.0	UML Modeling tool
10.	Macromedia DreamWeaver [Macromedia]	20.1	User Interface Design Tool

5. LIST OF REQUIREMENTS

5.1 Functional Requirements

No.	Requirement ID	Requirement Description	Priority
	W-SMAS_01	REGISTER	
1	W-SMAS-UCD001_1	Manager and staff can create an account by registering with user ID, position, name, email and password according to the correct format. The registered details will be saved in the database.	H
2	W-SMAS-UCD001_2	Manager and staff can login to their account if they have already registered.	L
3	W-SMAS-UCD001_3	An error message will be displayed if the user enters invalid format of user ID, position, name, email and password length.	L
	W-SMAS_02	LOGIN	
4	W-SMAS-UCD002_1	Manager and staff login the system by entering user ID and password.	H
5	W-SMAS-UCD002_2	The system will display the corresponding user interfaces in the homepage based on his or her position if the user ID and password are valid.	H
6	W-SMAS-UCD002_3	Manager and staff can log out the system.	H
7	W-SMAS-UCD002_4	The system will pop out an error message when the user inserts wrong user ID or password.	L
8	W-SMAS-UCD002_5	Manager and staff can reset new password if they have forgotten the password.	L
9	W-SMAS-UCD002_6	Manager and staff can register an account if they haven't registered.	L
	W-SMAS_03	SELECT PACKAGE	
10	W-SMAS-UCD003_1	Manager can select the package he or she wants to subscribe from the available package in the system.	H
11	W-SMAS-UCD003_2	The functionalities of the live camera of each package will be shown.	H
12	W-SMAS-UCD003_3	The system will automatically save the selected package.	H
13	W-SMAS-UCD003_4	The system will request the manager to re-login the page after changing the package.	H
	W-SMAS_04	VIEW QUOTATION	
14	W-SMAS-UCD004_1	Manager can view a table form of the details of the quotation list based on the current package chosen.	H
15	W-SMAS-UCD004_2	Manager can print out the quotation list as a pdf when needed.	M
	W-SMAS_05	LIVE SURVEILLANCE CAMERA	
16	W-SMAS-UCD005_1	Manager and staff can view the live surveillance camera.	H
17	W-SMAS-UCD005_2	The function provided in the page will be different based on the selected package.	H
18	W-SMAS-UCD005_3	Manager can only view the live surveillance camera screen when using the package 1.	H
19	W-SMAS-UCD005_4	Manager will have 2 live camera provided when using the package 2.	H
20	W-SMAS-UCD005_5	Manager will be able to start and stop recording the video when using the package 2.	M
21	W-SMAS-UCD005_6	Manager will be able to snapshot the current picture when using the package 2.	M
22	W-SMAS-UCD005_7	Manager will be able to download the video that he or she records when using the package 2.	M
	W-SMAS_06	MANAGE VIDEO	
23	W-SMAS-UCD006_1	Manager and staff can view the list of recorded video.	H

24	W-SMAS-UCD006_2	Manager can upload the video that he or she downloads from the live camera surveillance.	M
25	W-SMAS-UCD006_3	Manager can delete the selected video based on his or her needs.	M
26	W-SMAS-UCD006_4	An error message will be displayed if the manager upload error video format.	L
W- SMAS_07		MANAGE ACCESSORIES	
27	W-SMAS-UCD007_1	Manager can insert the new accessories details which are image, accessories ID, accessories name, type, available quantity and price according to the correct format for record purpose.	H
28	W-SMAS-UCD007_2	Manager can edit the selected accessories details.	M
29	W-SMAS-UCD007_3	Manager can delete the selected accessories.	M
30	W-SMAS-UCD007_4	An error message will be displayed if the manager enters invalid format of accessories information in adding and editing accessories.	L
W- SMAS_08		SEARCH AND VIEW ACCESSORIES	
31	W-SMAS-UCD008_1	Manager and staff can view the accessories details by searching the accessories ID to display the certain accessories details.	H
32	W-SMAS-UCD008_2	A blank table with no data contained will be displayed if the manager enters invalid accessories ID.	L

5.2 Non-Functional Requirements

No.	Requirement ID	Requirement Description	Priority
W- SMAS_09		Reliability issues	
1	W-SMAS-UCD009_1	For a single user, the system should crash no more than once per 10 hours.	M
2	W-SMAS-UCD009_2	If the systems crash, it should behave perfectly normal when reloaded again.	M
3	W-SMAS-UCD009_3	The system should access within 2 seconds after login.	M

	W- SMS_10	Usability issues	
4	W-SMAS-UCD010_1	System will log out automatically if the system close manually or force to stop.	M
5	W-SMAS-UCD010_2	System auto save will access every 2 minutes.	M
6	W-SMAS-UCD010_3	System should access to the surveillance camera within 10 seconds.	M

NOTE:

Listed below are the functional requirements and non-functional requirement of the system. In the priority column, the following short hands are used:

- H – High (mandatory) requirements (something the system must do)
- M – Medium (desirable) requirements (something the system preferably should do)
- L – Low (optional) requirements (something the system may do)

6. USE CASE DIAGRAM/STORY CARD

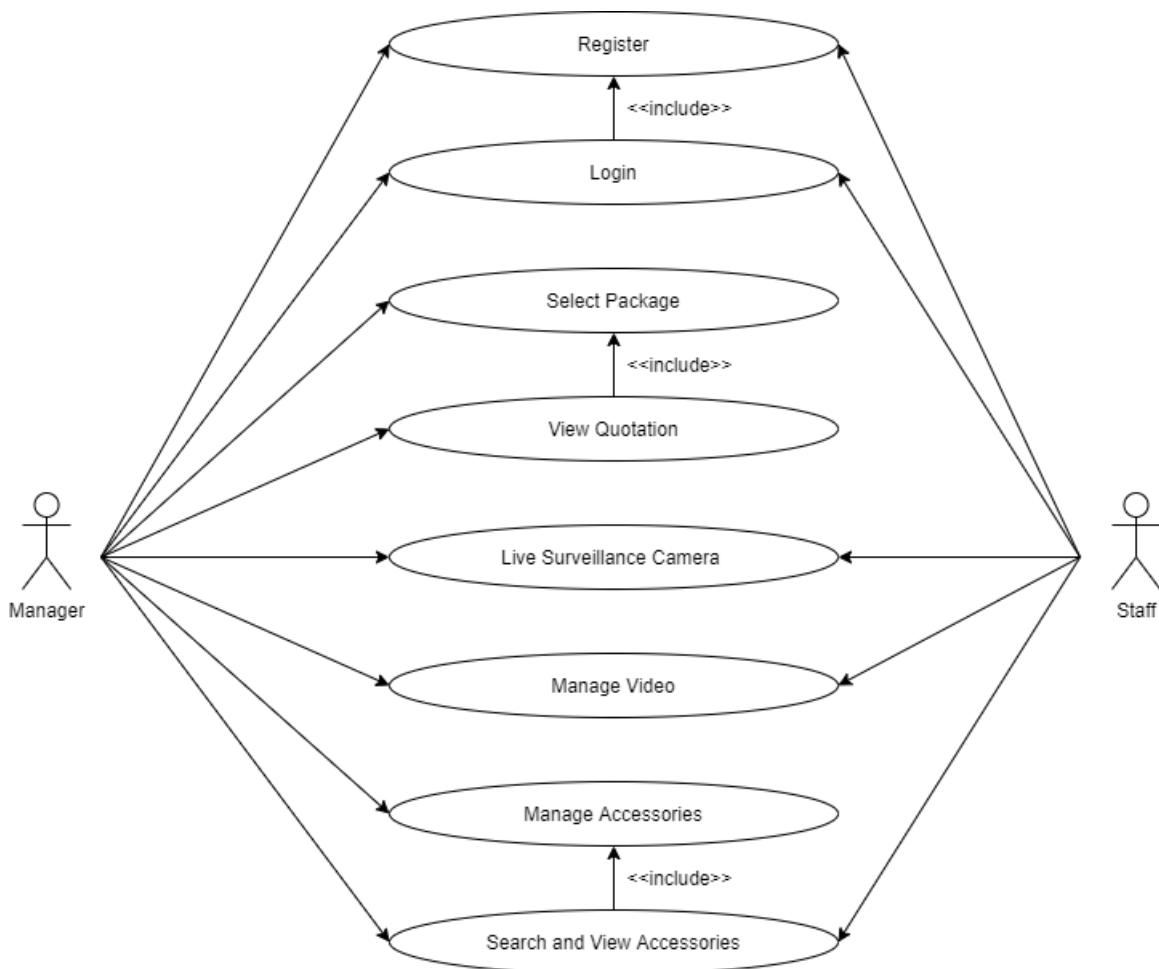


Figure 1: Use Case Diagram for Sintok Monitoring and Surveillance Webapp (W-SMAS)

The first use case for this system is the registration. This use case is initiated by the manager and staff and it is used to enable them to register an account to this system by using the user ID, position, name, email and password. After registering the account, they can log in to the system by just using their user ID and password.

The third use case for this system is select package. This use case is initiated by the manager only. It allows manager to select the package they want to subscribe. For the view quotation, manager is allowed to view the quotation based on the package they are using.

The fifth use case for this system is live surveillance camera. This use case is initiated by the manager and staff. It will allow the manager to start record video, stop

record video, download video and snapshot picture based on his needs while staff can only view the camera surveillance only without any camera function. The sixth use case is managing video. In this use case, the manager is allowed to upload video, view video and delete video in the video record list while staff can only view the video from the video list.

The next use case for this system is manage accessories. This use case is initiated by the manager. Manager can manage all of the accessories information by the function of adding, editing or deleting. Last but not least, the last use case is search and view accessories details. This use case is initiated by the manager and staff. Both of them are allowed to search the accessories details and they are authorized to view the details.

7. ACTIVITY DIAGRAM

Activity diagram is basically a flowchart which can represent the flow from one activity to another activity. The activity can be described as an operation of the system. The control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Activity diagrams deal with all type of flow control by using different elements.

The description about the operation of the system is shown as below:

7.1 Register

Register is the page which allows the manager and staff to register their account for the system. Firstly, they have to enter the web application and the system will automatically display the login page. The manager or staff have to click on beside “Create Your Account” icon below the login form in order to let the system displays register form from the registration page. They are required to fill in their information completely which are included user ID, position, name, email and password before clicking the “Register” button to register. If the information is filled up with an invalid format, the system will display the error message and prompt them to enter again. Conversely, the system will display the login page if all of the information is valid and correct.

7.2 Login

Login is the page which enables the manager and staff to log in their account for the system. At first, they have to enter the web application and the system will display the login page. There will have a login form which is required them to enter their user ID and password before clicking the “Login” button to log in. If the system retrieved the wrong user ID and password, an error message will be displayed. Conversely, the system will display the home page if the information is valid and correct. They can also reset a new password if they have forgotten the password by clicking the “Forgot Password?” button.

7.3 Select Package

Select package is the page for the manager to select the package they want to subscribe. At the home page, the manager has to go to the package section and click on the relevant action button to select the package. Our system provides two package which is package 1 and package 2. Manager can choose and select which package that he or she wants to subscribe. Once manager is sure to change the current package that he or she uses, the system will show the message of change package successfully and go to the login page prompt manager to login again after clicking “Change” button in the package page. Then the page will display the function based on the package chosen.

7.4 View Quotation

View quotation is the page for the manager to view the quotation based on the package that he or she selects. At the home page, the manager has to go to the quotation section and click the relevant action button to view the quotation. Once manager clicks on the relevant button, the page will display the quotation based on the package that is selected by the manager. It also provides a feature for manager to print out the quotation based on his or her needs.

7.5 Live Surveillance Camera

Live surveillance camera is the page for the manager to operate surveillance camera. At the home page, the manager has to go to the camera surveillance section and click the relevant action button to operate the camera surveillance.

Once manager clicks on the relevant button, a confirmation message will be shown to prompt manager agrees this web app to use the camera function. After manager agrees with that, the system will display the current camera screen on the page. If the package that selected by the manager is package 1, the page will only display the camera screen but if the manager selects the package 2, he or she will be able to start and stop recording the video and snapshot the current picture. The manager can also choose what camera he or she wants to use as the system has provided two cameras in the package 2. All the result will then be displayed below the camera screen. The manager is able to download the video that he or she records if needed.

For the staff, it will only allow he or she to view the current camera screen after agree this web app to use the camera function.

7.6 Manage Video

Manage video is the page for the manager to manage video. At the home page, the manager has to go the camera surveillance section and click the relevant action button to manage video.

Once manager click on the “Upload Record Video” button, the system will display a form to let the manager to upload video. Manager may choose and upload the video that he or she downloads from the live camera surveillance. The video will upload to the database and save on it. Manager can view the record list by clicking on the “Video Record List” button to view the video that had been uploaded. It is also allowed the manager to delete the video by clicking the “Delete” button in the viewing video page. For the staff, the system only allows staff to view the video from the video record list.

7.7 Manage Accessories

Manage accessories is the page for the manager to manage the camera accessories details efficiently. They have to go to the accessories section at the home page of the system to perform the actions of adding, editing and deleting the accessories. The manager is required to fill in the accessories form completely which will be displayed by the system before clicking the “Submit” button in the add accessories page. The details are selecting the image of camera accessories and its type and entering its name, quantity and price per item. If the format of accessories details is invalid, the system will display an error message and prompt the manager to enter again or else the details will save to the accessories database simultaneously after showing the success message.

To edit the accessories details, the manager can click on the “Edit” button that display beside the accessories’ information. After editing and the “Edit” button is clicked, the system will retrieve the accessories’ format before the edited information can be saved to the database. If it is invalid, the system will display an error message and prompt manager to enter again. Same to go with the process of deleting the

accessories, but the manager has to click the “Delete” button to confirm delete the chosen accessories and then the system will update the database.

7.8 Search and View Accessories

Search and view accessories is the page for manager and staff to search and view the accessories details when needed. The manager can click “Accessories Record” button while the staff has to click “View Accessories” button at the home page of the system. Then, the full accessories list that is already in the database can be displayed and viewed. They may also enter the accessories ID in the search box provided before clicking the “Search” button. The entered accessories ID then will be retrieved by the accessories database. If it is invalid, the system will display nothing in the table or else the accessories detail that is searched by them will be displayed.

8. The USER EXPERIENCE (UX) MODEL DIAGRAM

8.1 Storyboard sequence

Storyboard sequence describes the use case scenarios or mini-stories of the behaviour in an application which can be expressed in terms of some sample screens. Each of the scenarios is an expression of a specific use case of the system. There are several screens in Sintok Monitoring and Surveillance Web Application, which can be used to cover the use cases. The functionalities of the pages will be responded according to the position registered by the user.

Firstly, in the screen of the register page, a form is prepared for the user to fill in the personal information which includes with the user ID, name, email, password, and position. An error message will be popped out if the user enters any invalid values on the text field provided. The register, reset and the back-to-login-page button which named as “Have account already?” is prepared on the page which allows the user to do the actions. Secondly, in the screen of the login page, the user needs to fill up the user ID and password on the text field provided. The user may press the login button after finished the steps. In addition, the button of “Forgot Password” and “Create your account” is prepared for the user who wants to renew the password or for the unregistered user to register an account. In the forgot-password page, the user may enter the email at the text field provided with the valid format or else an error message will be shown. After the user has pressed the submit button, the system will send a link through email to the user and the link will bring the user to the new-password page for he or she to enter the new password. It will be saved to the database once the user has pressed the submit button and pop up with the success alert message. The back-to-login-page and create-your-account button are prepared on the page for the user to proceed with their action.

Next, on the screen of the homepage, the functionalities of the web application are shown at the menu bar. There are 2 types of the interface content of the homepage and it will be shown according to the position of the user registered. For the manager, the content will be divided into 4 sections which are the description of the web page, package, camera surveillance and accessories whereas the homepage content of staff will be the same as the managers’ but except for the package section.

There will be 2 buttons contain in the package section, which is package and quotation. If the user presses the package button to enter the package page, it will show the functionalities of the live camera that available in the packages and the user may select the desired package from 2 available packages through the drop-down selection button and re-login the page to get the services. The change and back button are prepared at the bottom of the page which allows the user to proceed with the action. On the contrary, the user can press the quotation button at the package section to view quotation. In the quotation page, the list of the quotation will be shown in a table form which contained the current package details. The print and back button are prepared at the bottom of the page for the user to print it as documentation or back to the homepage.

For the camera surveillance section, it contains 3 buttons, which named as “Live Camera”, “Upload Record Video” and “Video Record List”. In the Live Camera page, the manager and staff are allowed to view the live camera on screen. For the manager, the button of start and record video and snapshot picture is provided beside the camera screen. The start record button allows the manager to record the video and end the process by pressing the stop record button. The result will be shown at the record result section and the manager may press the download button to download the video. Furthermore, the manager may press the snapshot picture button to snapshot the image of the screen and the result will be shown at the snapshot result section. There are 4 buttons, which are back, live camera 2, upload video and video list in manager’s live camera page and 1 back button in staffs’ are prepared at the bottom of the screen which allows the user to proceed with the actions. Next, the upload record video button will bring the manager to the upload video page once the button is pressed. In the upload-video page, the manager can upload the downloaded video by pressing the choose-file button and the video will be shown on the screen. The button of upload, video list and back is prepared on the page as well. Other than that, the video record list button will lead the manager and staff to the video-record-list page. This page will contain the list of the video recorded and uploaded by the user. The user is allowed to view the video by pressing the view button and it will lead the user to the view-video-record page to watch the output. The back button provided on the page allows the user to back to the previous page.

Lastly, for the accessories section, the button will be presented differently to the manager and staff. It will show two buttons, which are “Add Accessories” and “Accessories Record” for the manager whereas shows only one button for the staff, which is “View Accessories”. In the add-accessories page, the manager may add the accessory by uploading the image through the choose-file button and filling up the details. The error message will be shown if the manager has submitted the invalid information or show the success message in contrary after the submit button had pressed. The reset and the cancel button are provided as well. In the accessories-record page, the manager is allowed to manage the accessories information by searching the ID, edit, delete or view them. On the other hand, the staff is only allowed to view the information about the accessories by searching the ID on the view-accessories page.

8.2 Navigational Map

This diagram expresses the structure of an application’s screens with their potential navigational pathways. An important characteristic of this diagram is expressing all the legal and expected paths through the system.

The navigational map of Sintok Monitoring and Surveillance Web Application is starting by the login page. The user would be able to navigate the homepage of the web application if they are one of the registered users or else they will be requested to register an account in the registration page. Additionally, the forgot-password page is prepared for the user as well which allow them to reset the password after received and clicked the link that sent by the system through email. After the user had login successfully, the manager and staff are able to navigate the homepage with the buttons available at the menu bar. The content of the homepage of the manager will be divided into 4 sections, which are the description of the web application, package, camera surveillance and accessories. On the other hand, the content for staffs’ will be the same as the managers’ but absent with the package section.

For the package section, it will contain 2 buttons, which named as “Package” and “Quotation” respectively. In the package page, the manager is allowed to view the package list for the live camera function and select the desired package from the 2 available packages at the drop-down selection button. Once the package has been selected, it will

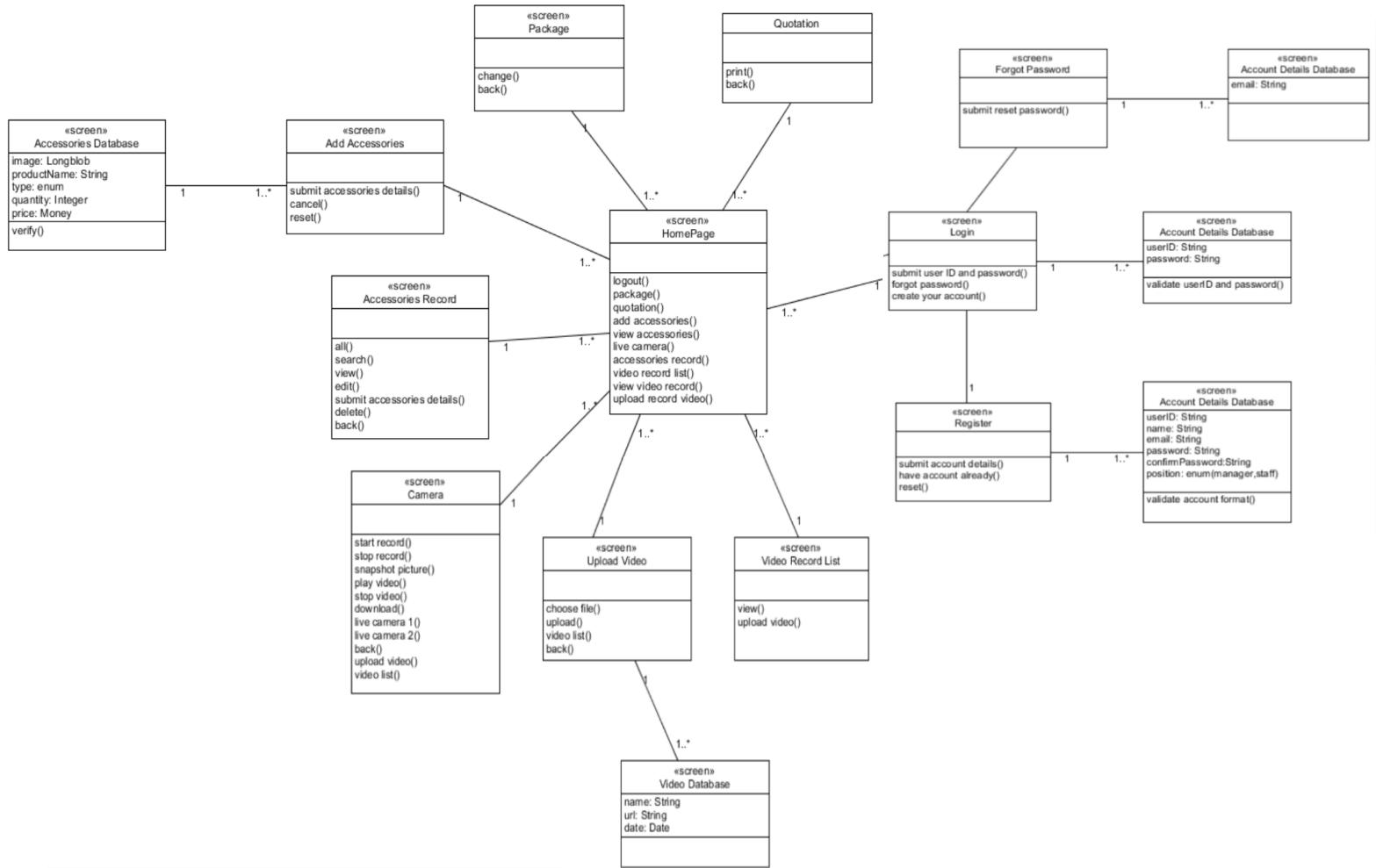
request the manager to re-login the page by showing the alert message. The selected function of the package will be provided and shown on the page automatically after the manager has login successfully. If the manager pressed on the quotation button, it would lead them to the quotation page and show the details of the package selected in a table form. The manager is also allowed to print the form by pressing the print button or back to the homepage by pressing the back button.

For the camera surveillance section, there will be different display for the manager and staff. The manager would be able to see 3 buttons, which are “Live Camera”, “Upload Record Video” and “Video Record List” whereas only 2 buttons for staff, which are “Live Camera” and “View Video Record”. In the Live Camera page, both of the users are able to view the camera screen and a back button is provided on a page which allows the user to back to the homepage. However, the manager would get more services compared with the staff like record the video by pressing the start record button and end it with the stop record button, download the video by pressing the download button, and snapshot the image of the screen by pressing the snapshot pic button. In addition, the recorded video and captured image will be shown at the section of the record and snapshot result respectively. The button of “Upload Video” and “Video List” will be presented at the same row with the back button to allow the manager to proceed with the action to the relevant pages. The “Live Camera 2” button will only be shown if the manager is using the services provided by the package 2 and it will lead the manager to the second live camera page. Next, if the manager has pressed on the “Upload Record Video” button, it will lead the manager to the upload page. In this page, the manager is allowed to upload the downloaded video by pressing the choose-file button and select the video from the document of computer and upload the video by pressing the upload button once the content of the video has been watched and checked on the screen provided. The “Video List” and back button are provided on the page as well which allow the manager to proceed to the video list page or back to the homepage respectively. For the “Video Record List” or “View Video Record” button, it will lead both users to view the saved videos by pressing on the view button and back to the homepage by pressing the back button. In addition, the manager is allowed to upload the video again by pressing the upload button provided at the bottom of the page.

For the accessories section, both of the user will get the different display as the manager consist two buttons, which are “Add Accessories” and “Accessories Record” button whereas the staff has 1 button only which is “View Accessories” button. In the add-accessories page, the manager is allowed to add it by selecting the images from the computer by pressing the choose-file button and filling up the details in the text field provided. Additionally, the error message will be shown if the manager has submitted with the invalid values after the submit button had been pressed or else it will pop up a success message. The reset and cancel button allow the manager to clear the information that has been filled or back to the homepage. For the button of “Accessories Record” or “View Accessories”, these will provide both of the user to search the accessories by searching the ID and view the details by pressing the view button. In addition, the manager is allowed to manage the information of the accessories by editing and deleting with pressing the relevant button. The alert message will be shown after the manager has edited or deleted the information of the accessories successfully or failed. Last but not least, the back button is provided for both pages of the user respectively.

In short, both the manager and staff will have a different experience while using the web application. Both are required to register an account before login or reset their password at the new password page optionally. The manager is allowed to select package, view quotation, use live surveillance camera, manage video, accessories and enable to search and view the accessories. However, the staff is allowed to use all of the features which same as the manager but except the features of select package, view quotation and manage the accessories.

9. CLASS DIAGRAM



10. CONCLUSION AND FUTURE WORKS

This report describes the design and the development of a web application for web-based surveillance application at the commercial places. With the growth of business and economy of a country nowadays, most of the businessmen are having more than one shop in other regions. It may bring challenges for them to manage the security of the shops as they are unable to separate themselves to keep an eye on the shops physically. Hence, we have received a request from our customer, which is the electronic company's owner in Changlun, Chang Sin Letrik Sdn Bhd to develop a web-based surveillance application for the owner to ensure the properties of the shop are safe. We have developed the application which allows the owner to do the management on the camera surveillance and the accessories virtually. We believed that the functions applied in the application would be able to protect the safety of the shops against shoplifting, and vandalism.

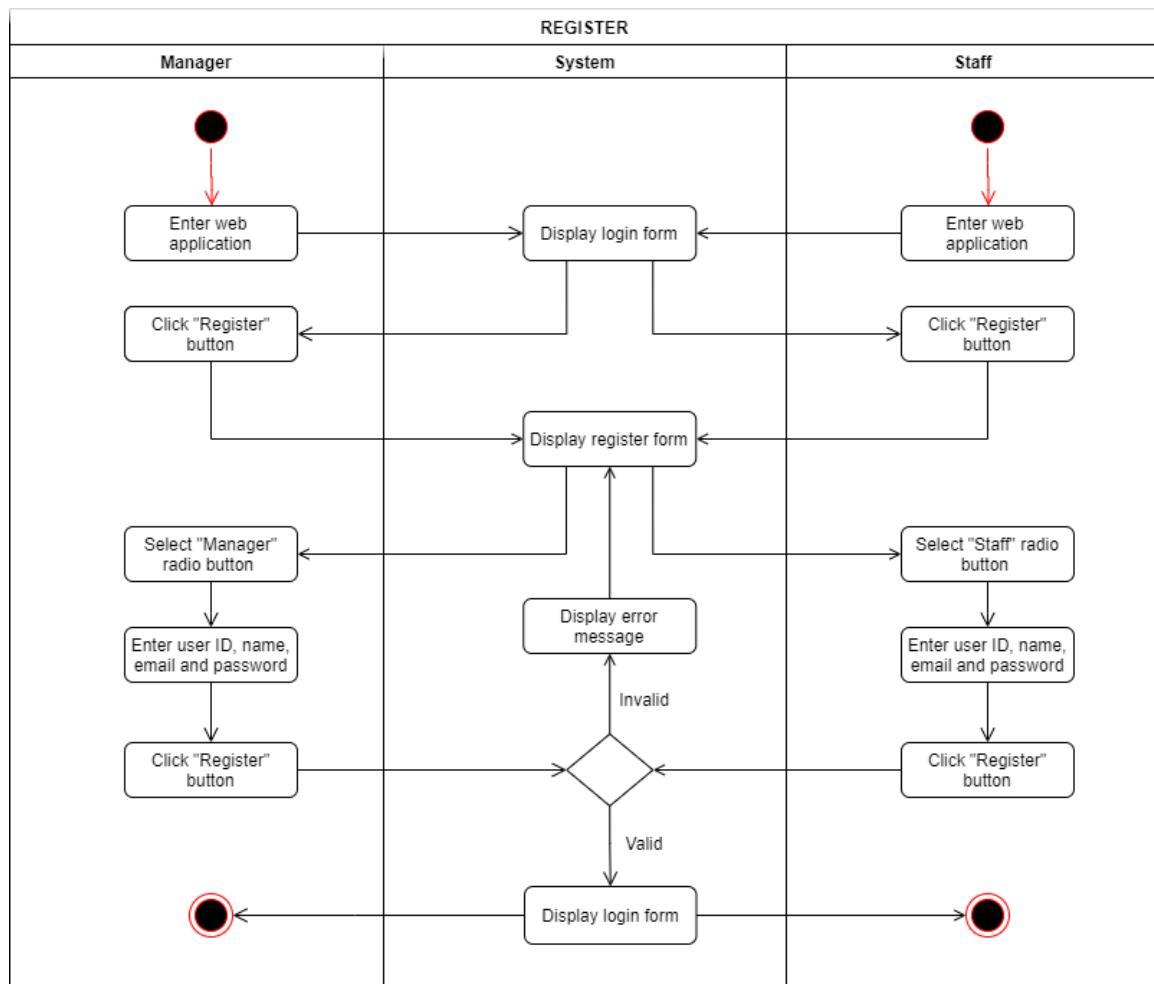
However, there is some limitation in the web application, which are the zoom in or out feature and the audio recorder of the camera surveillance are not available for the current version. We are planning to expand the functionality of SINTOK MONITORING AND SURVEILLANCE WEBAPP by fixing the limitation that we are facing on the current version. In addition, we would like to upgrade the features of the web-based camera surveillance system by adding the payment system which allows the user to do the payment on our website. Besides that, the creation of the motion detector and motion alert which would help the shop owner to monitor the environment of the shops by using the Internet of Things (IoT) technology is going to be part of the improvement as well. We believed that the updated version of the web-based camera surveillance application is enabled to ensure that the security of the shop is guaranteed and provide a high safety environment for the customer to do their shopping in the shop comfortably. It will bring more advantages to the revenue of the shop owners and manage the shop effortlessly and effectively.

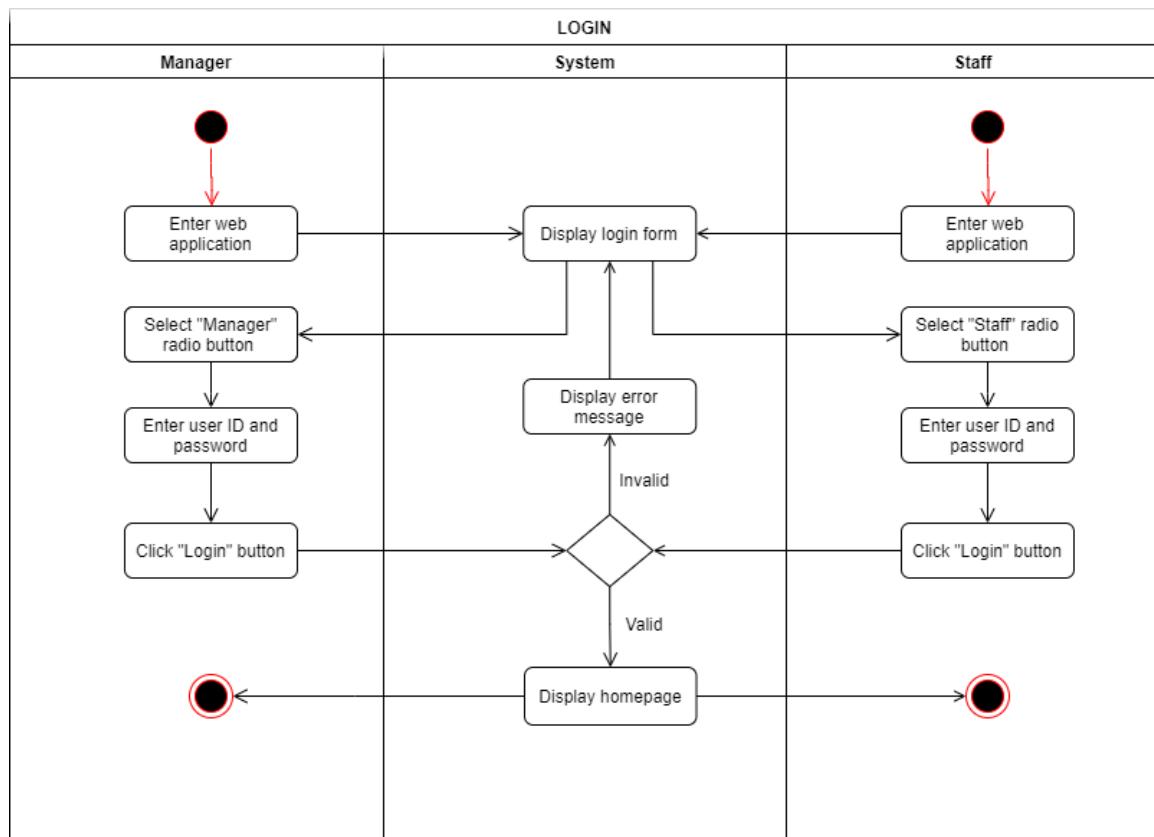
REFERENCES

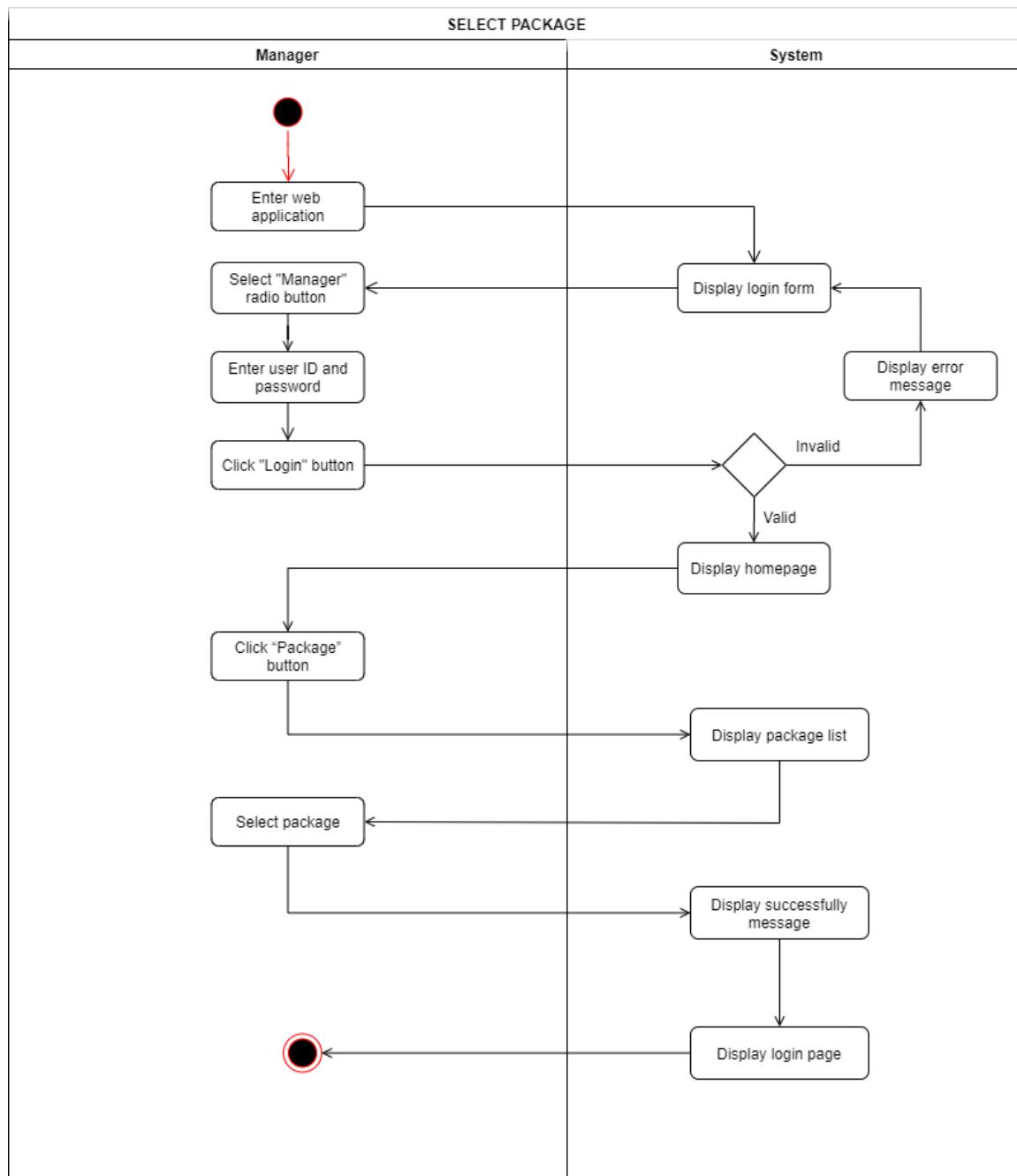
- w3schools. *Html, CSS, PHP tutorial*. Retrieved from: <https://www.w3schools.com/>
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- SiteGround. *How to generate PDF files with PHP?*. Retrieved from: https://www.siteground.com/kb/how_to_generate_pdf_files_with_php/

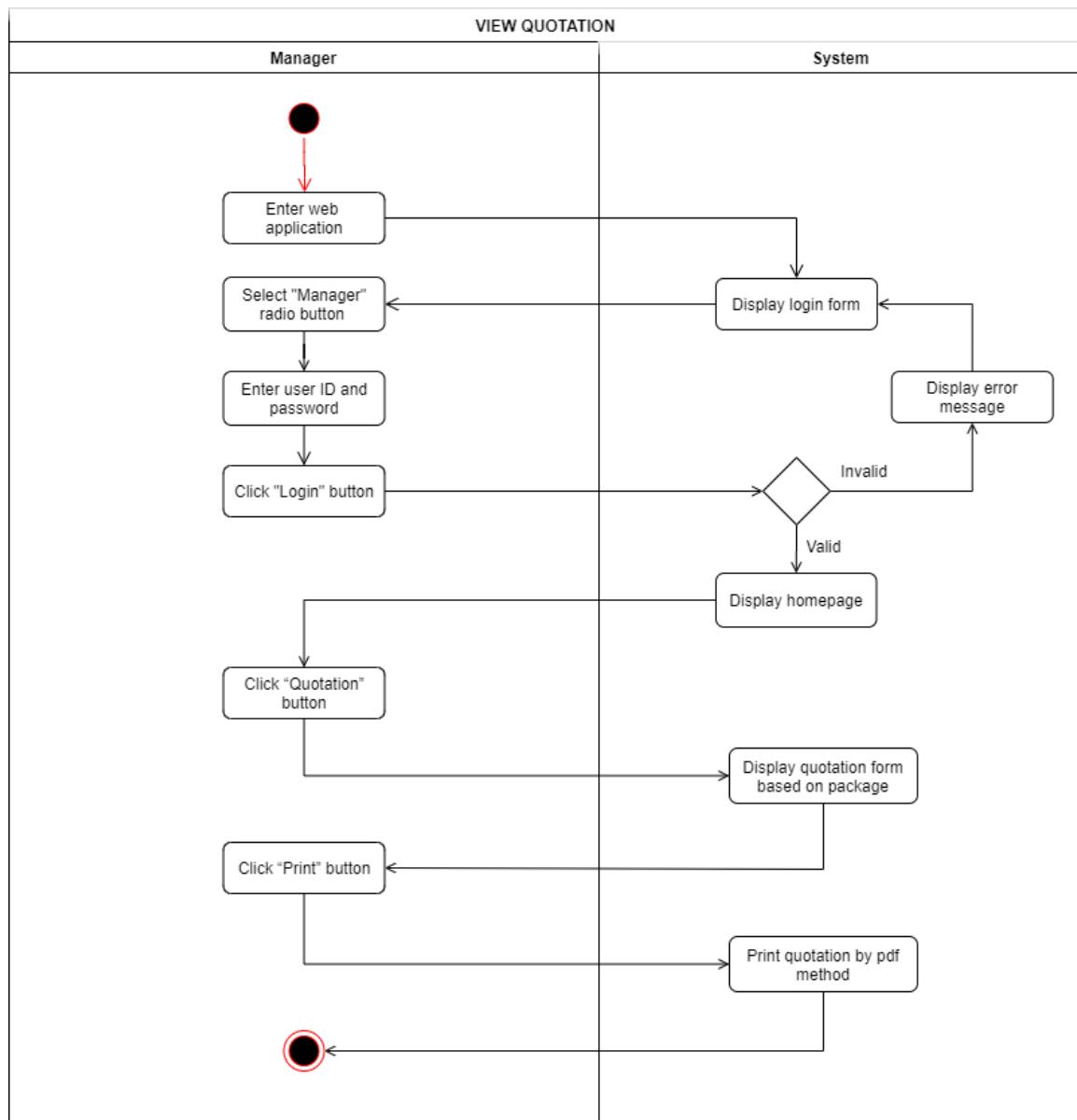
APPENDIX

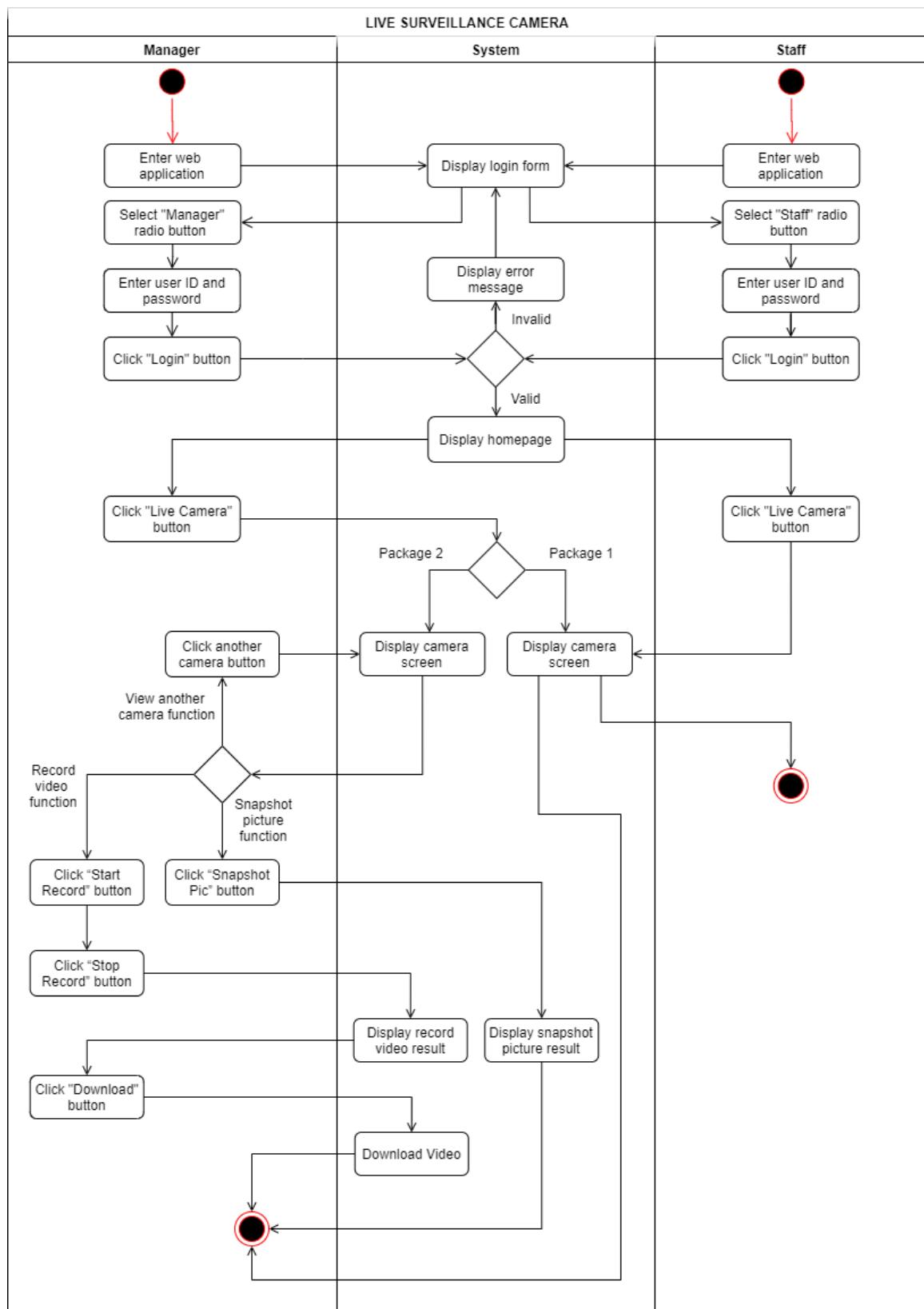
Activity Diagram

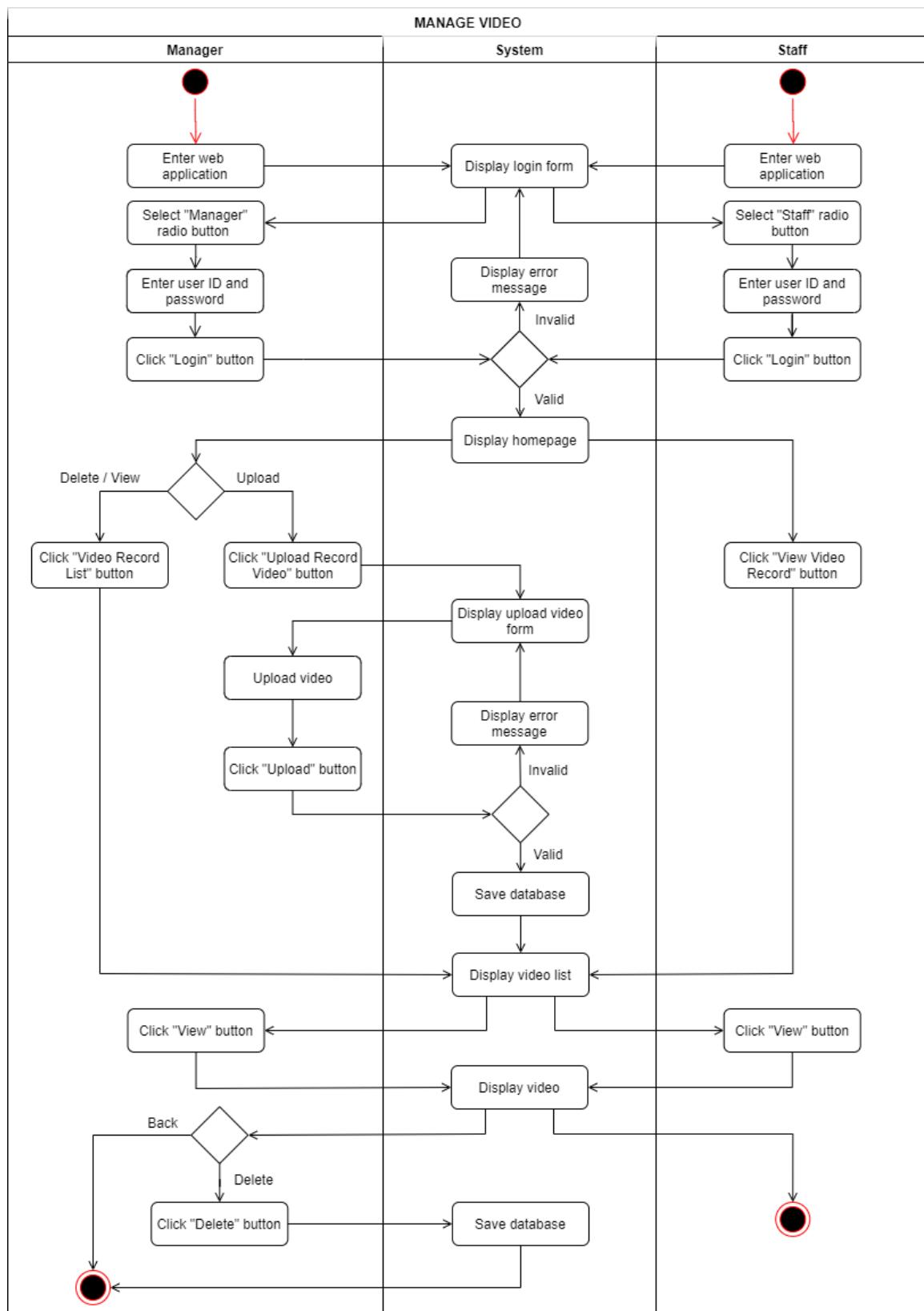


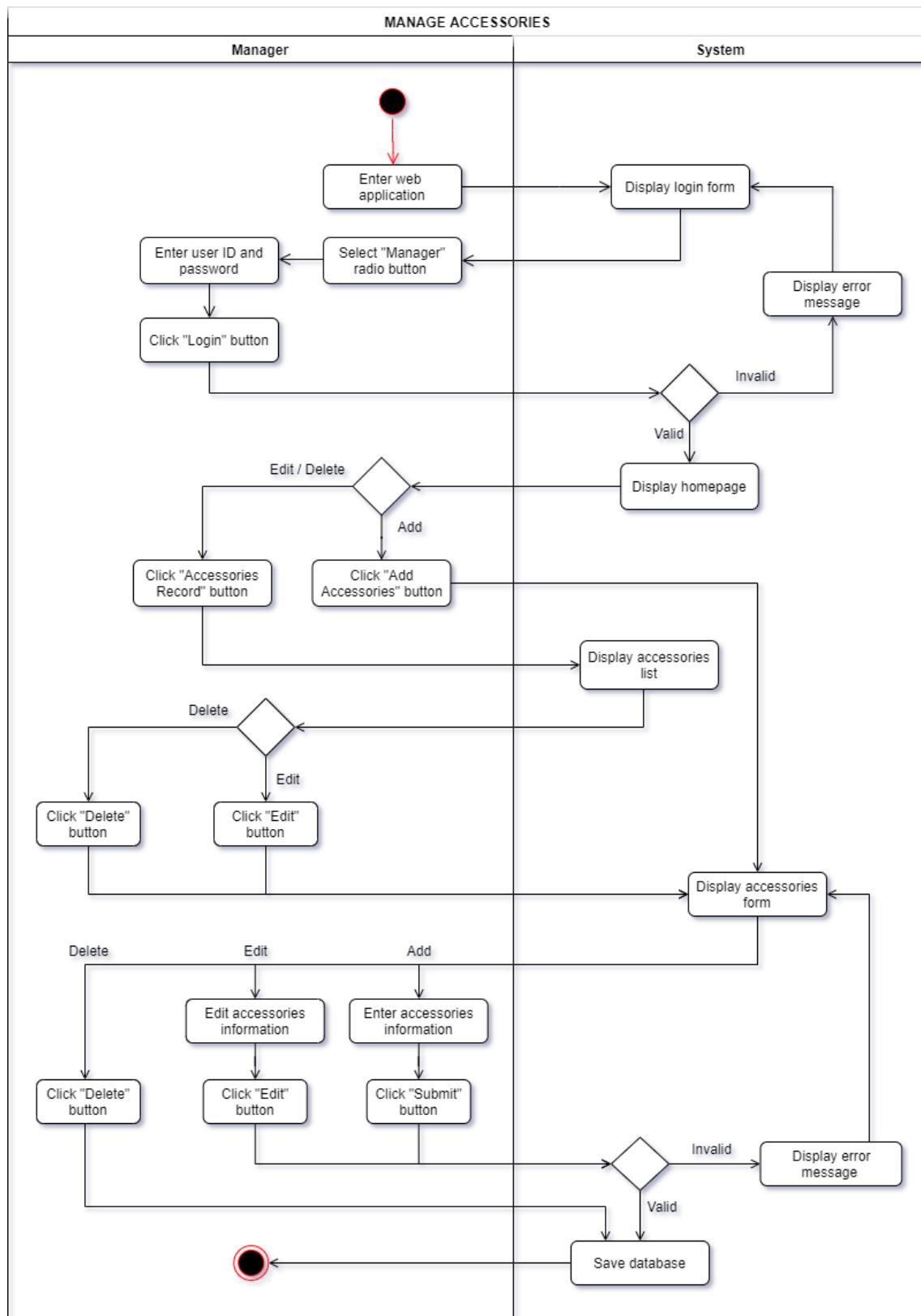


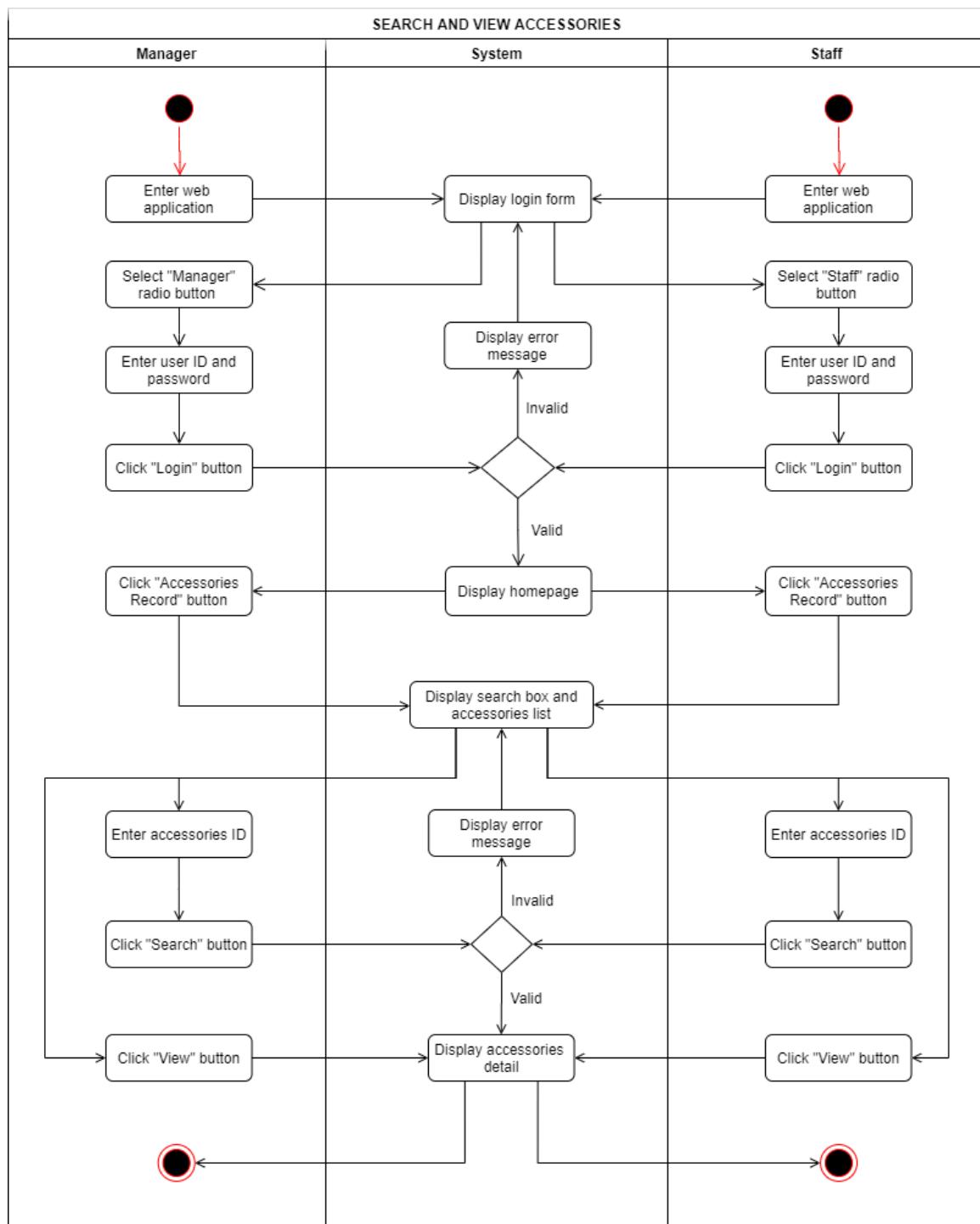






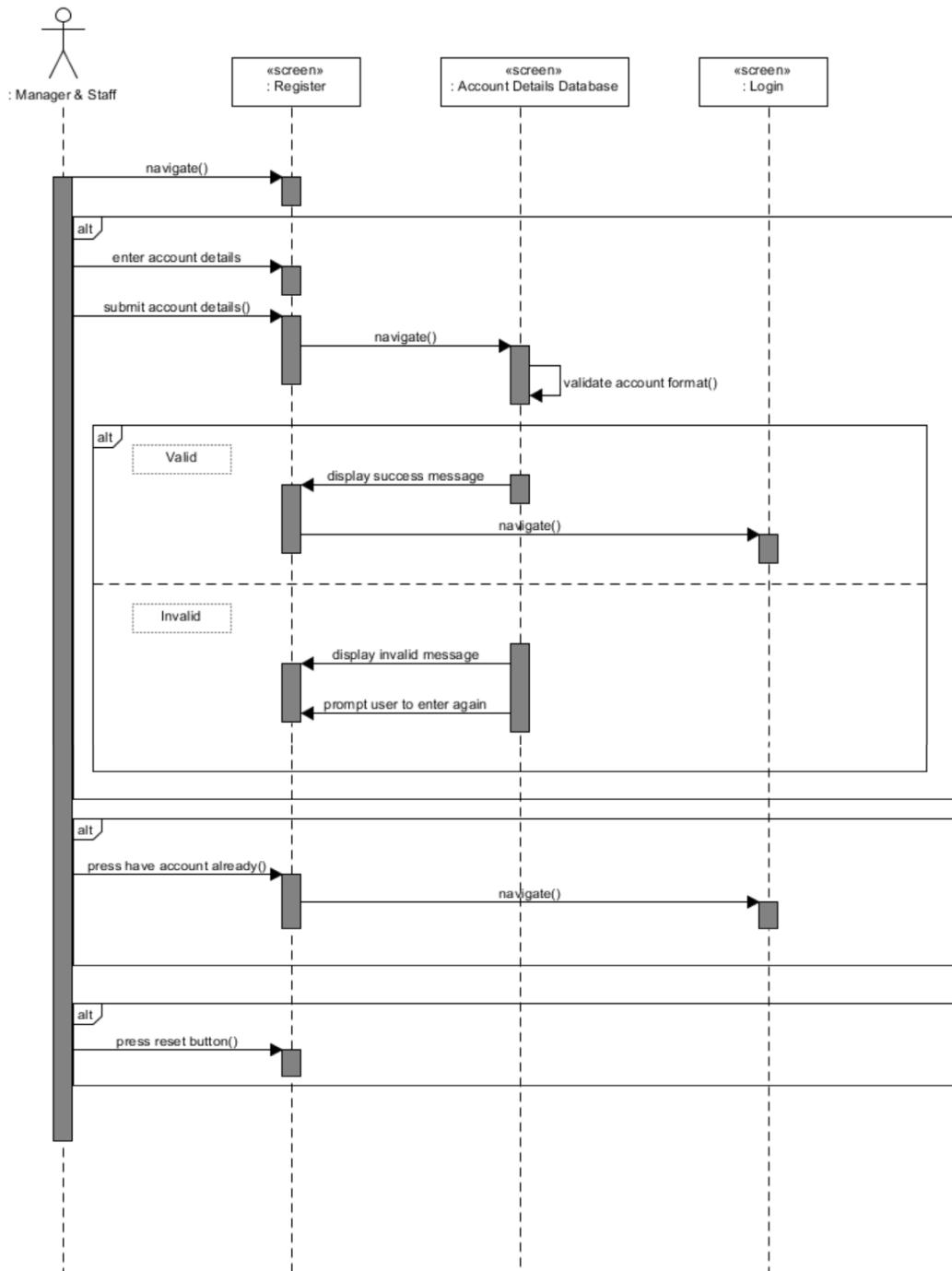




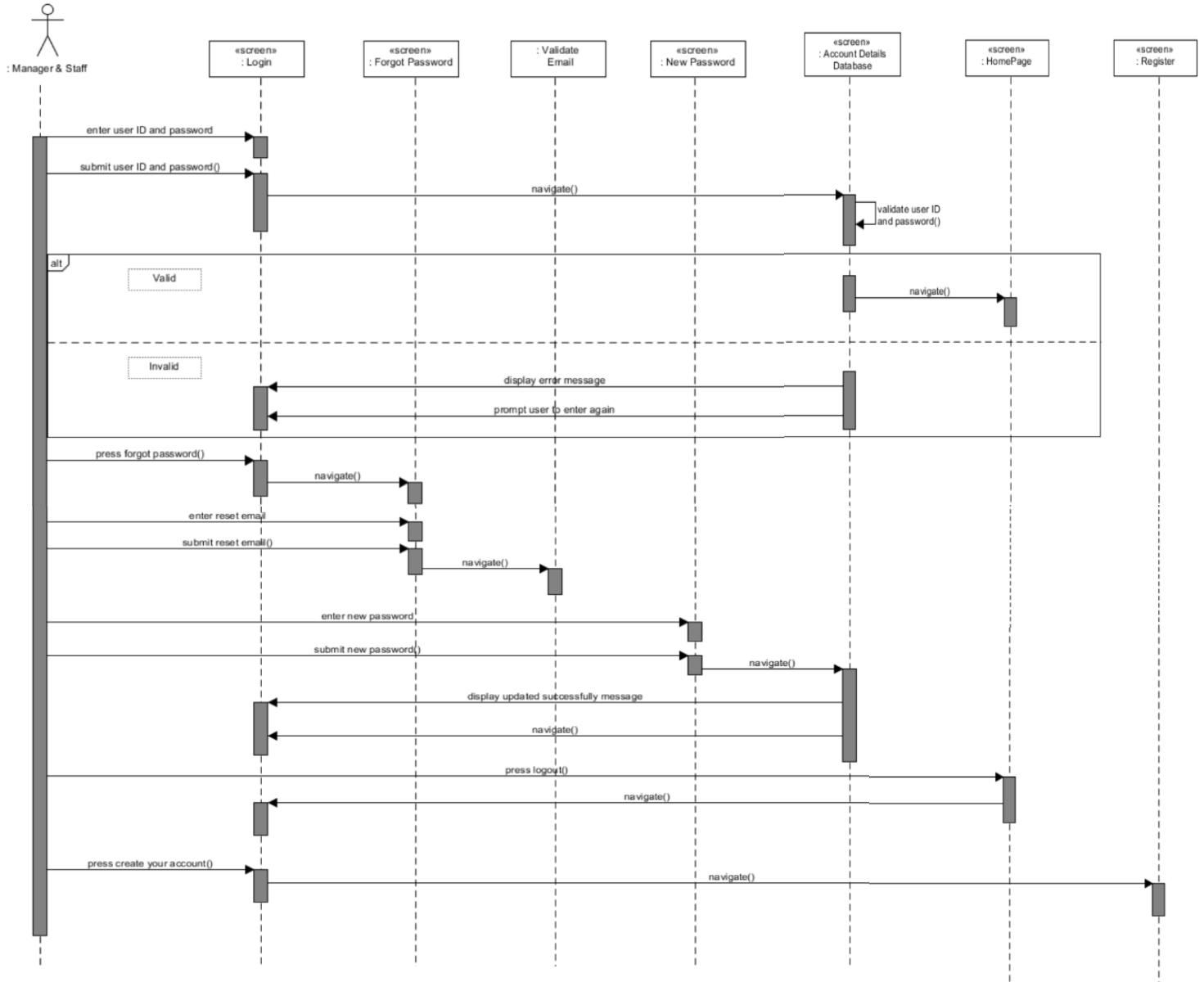


Story Board Sequence

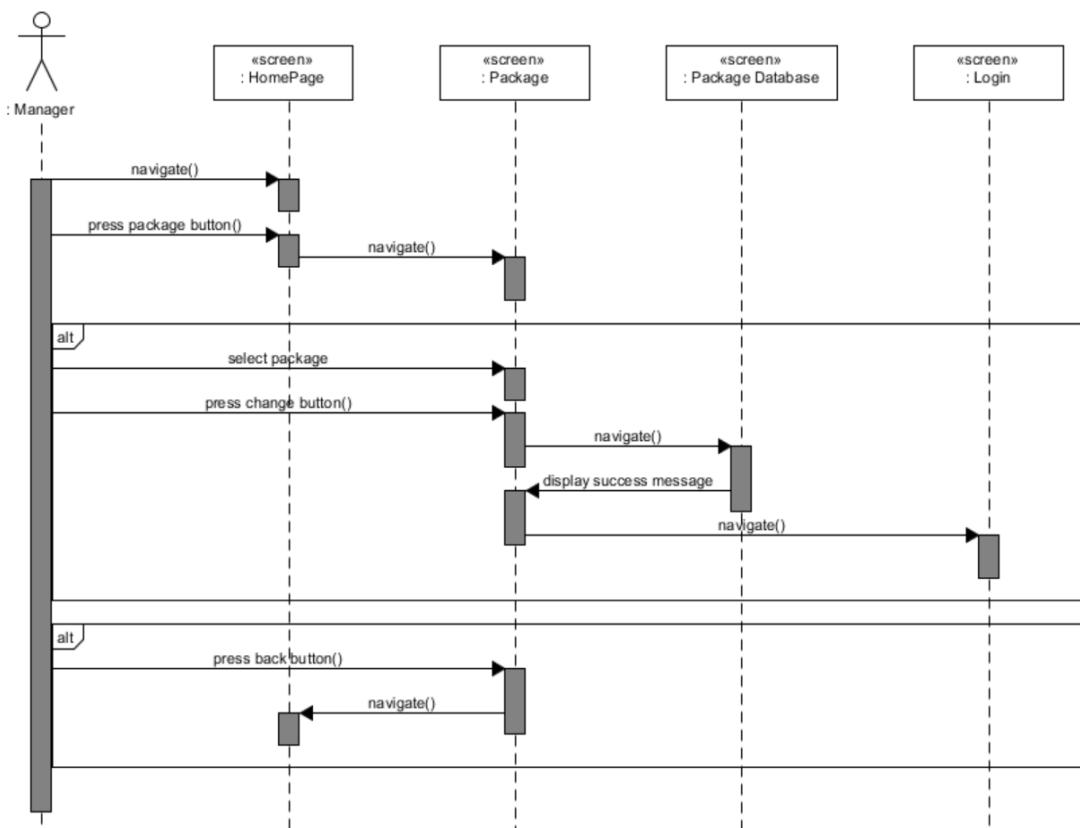
a) Register



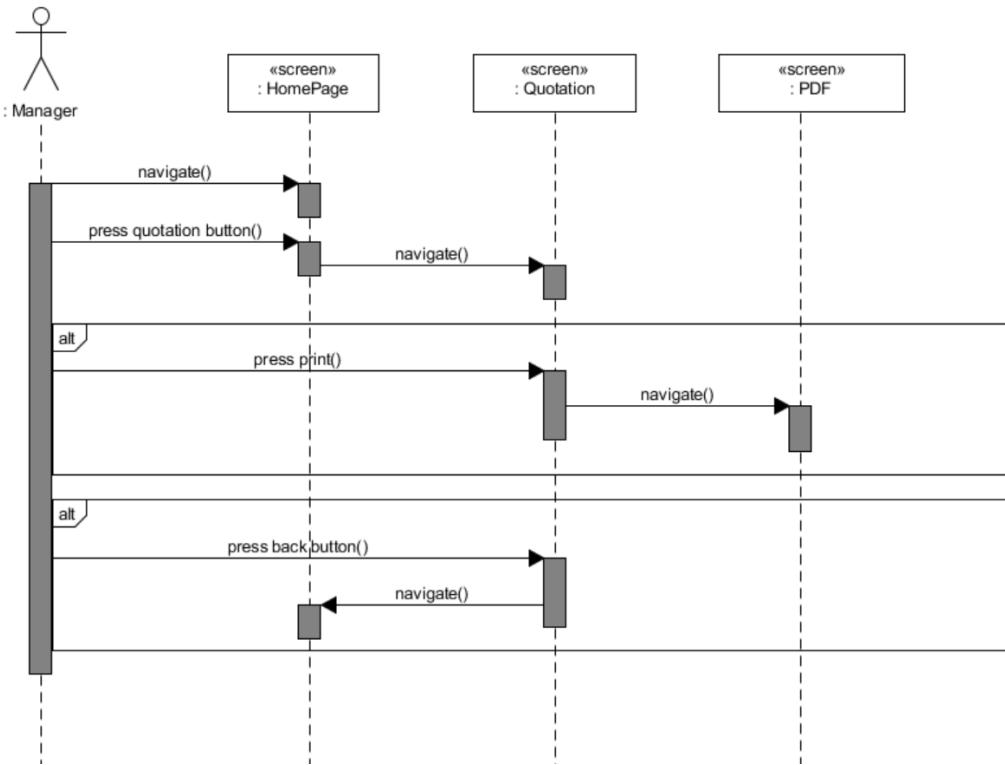
b) Login



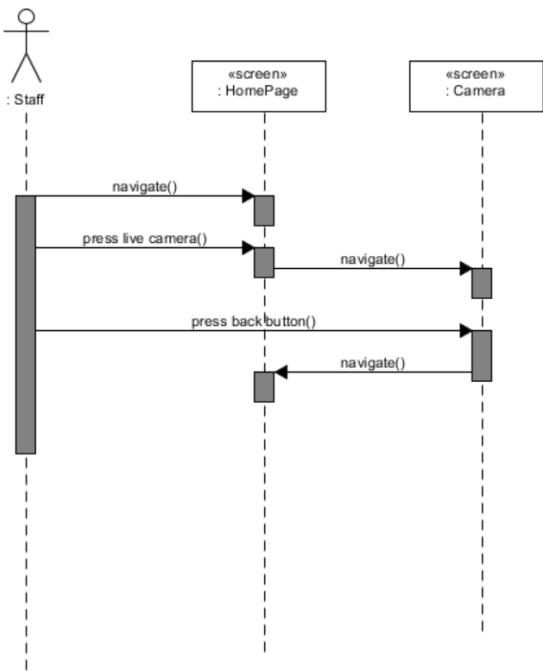
c) Select Package

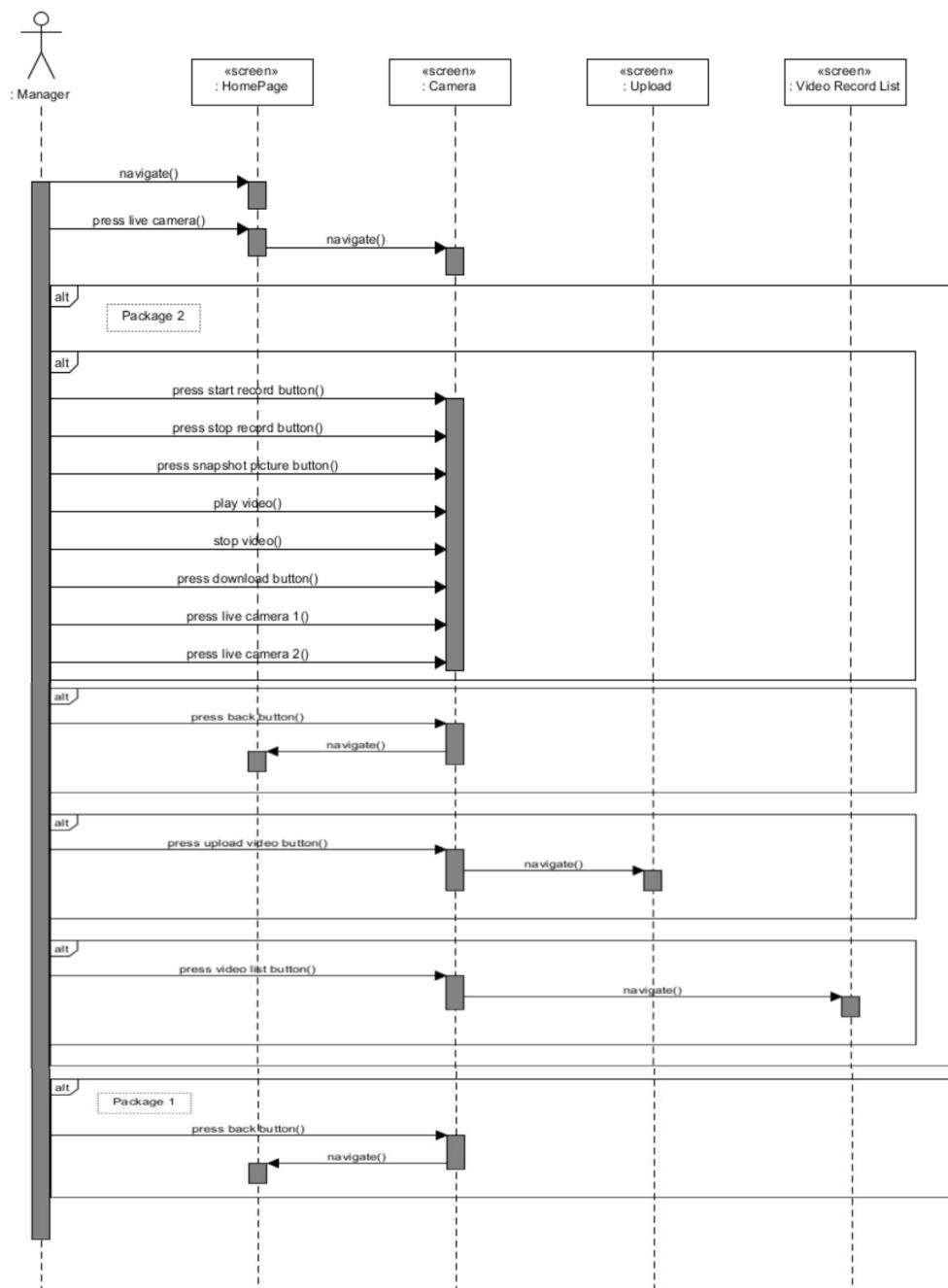


d) View Quotation

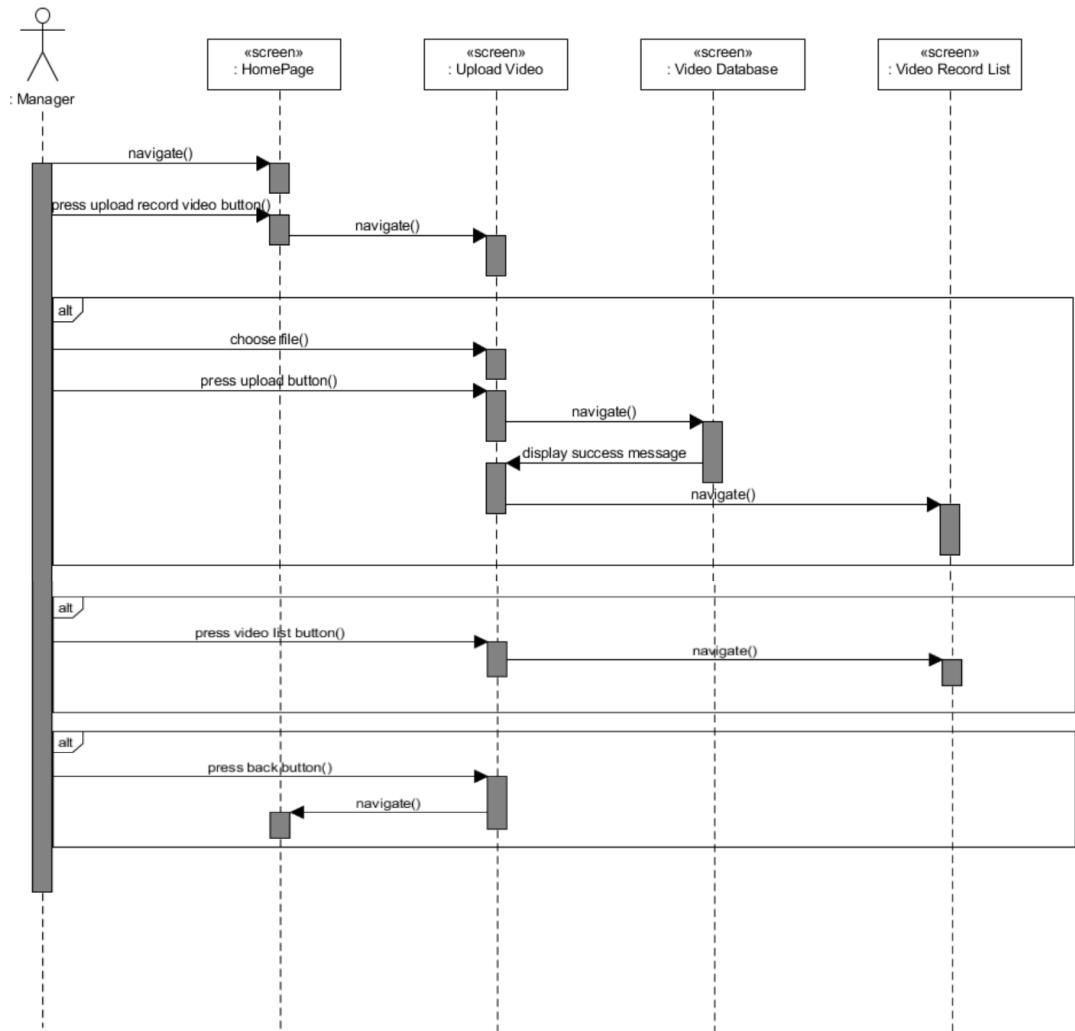


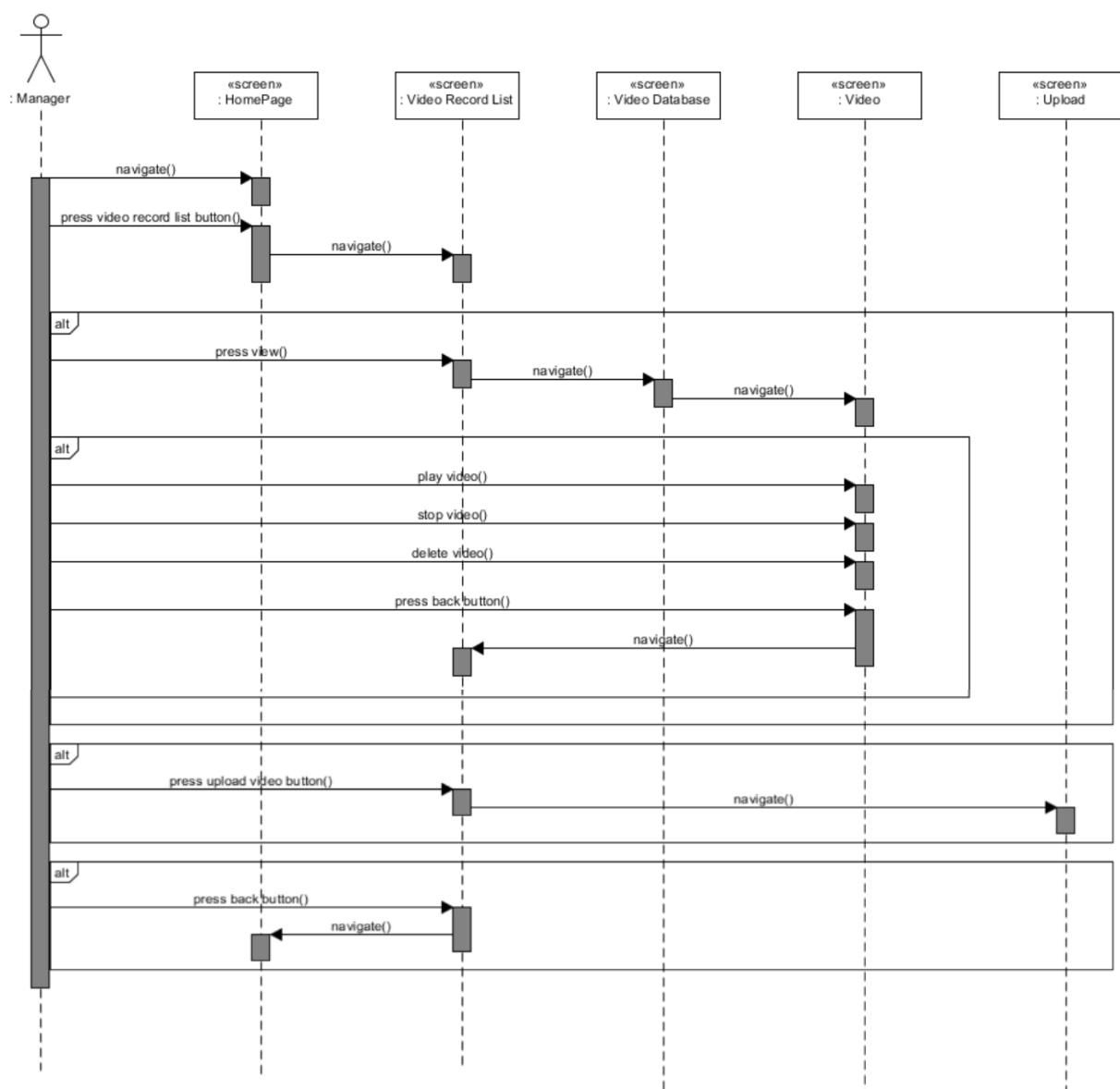
e) Live Surveillance Camera

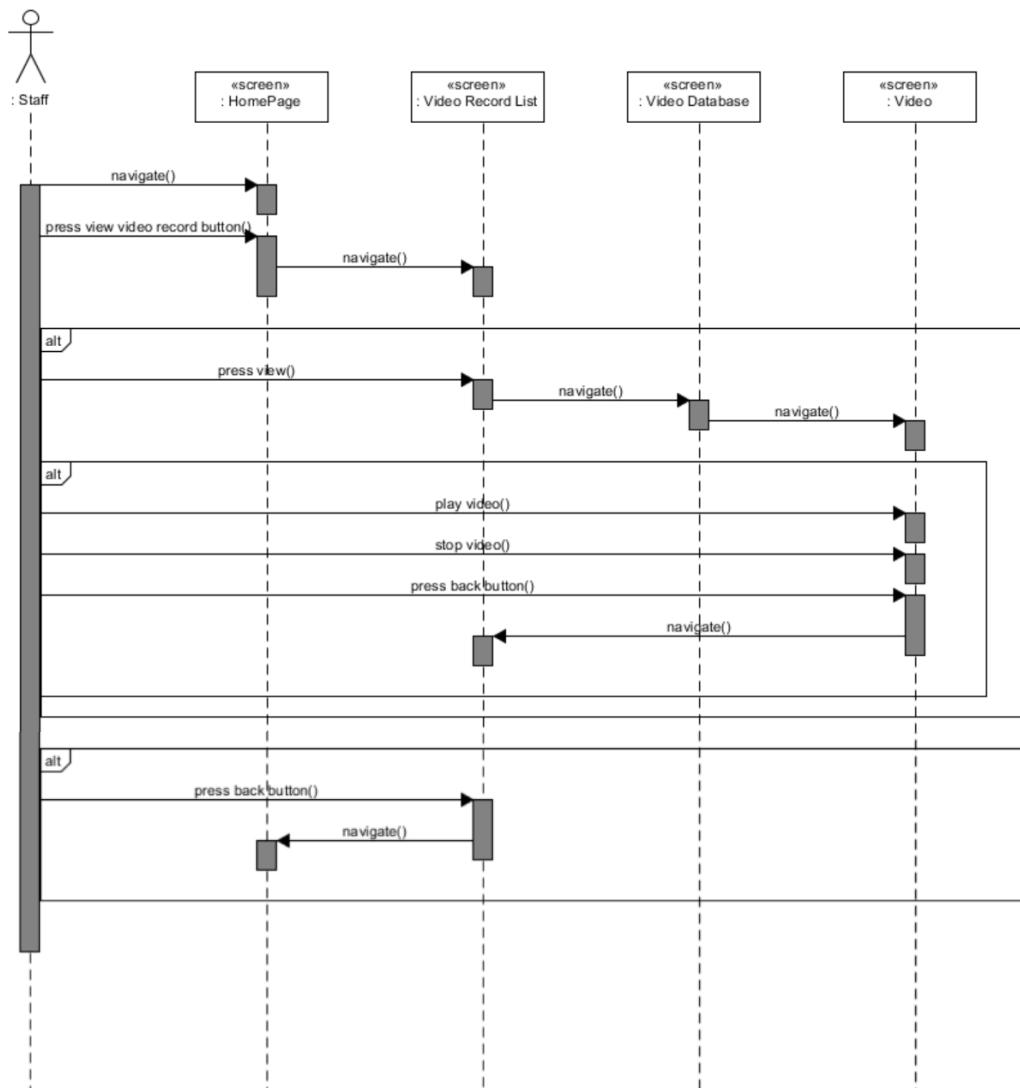




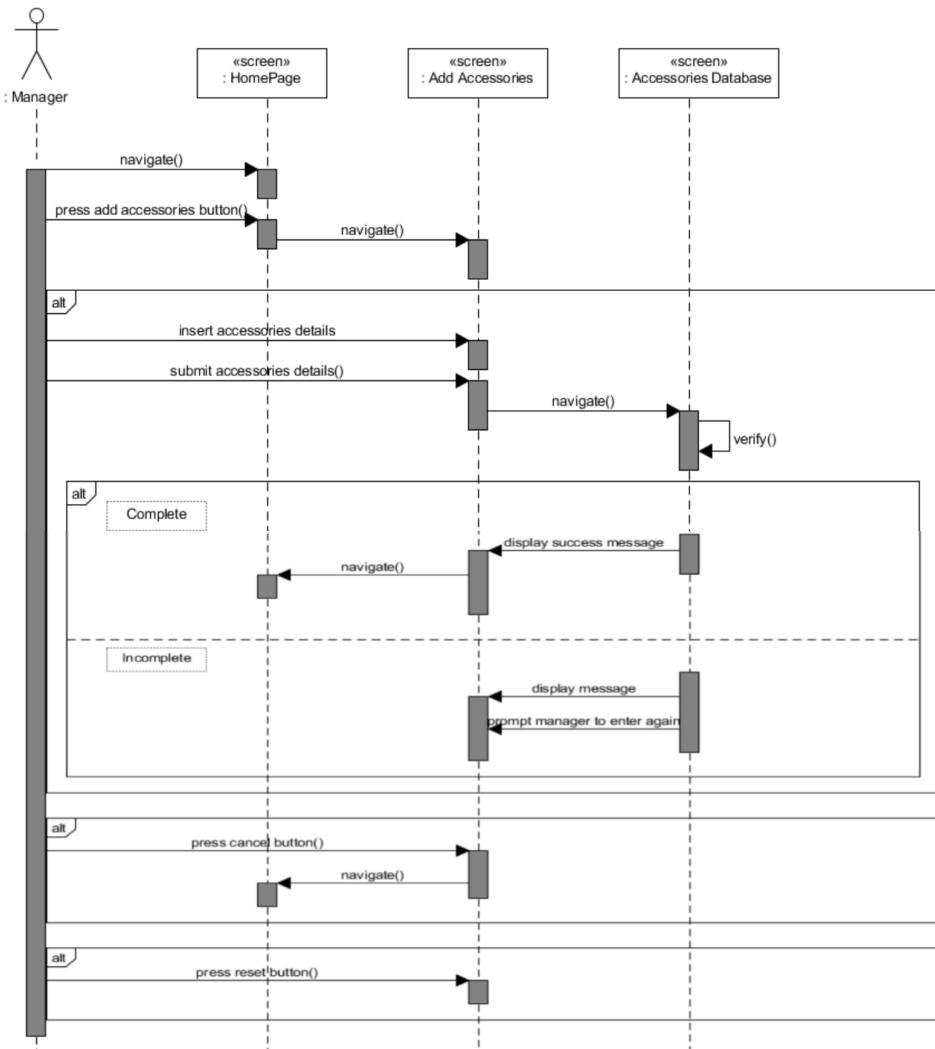
f) Manage Video



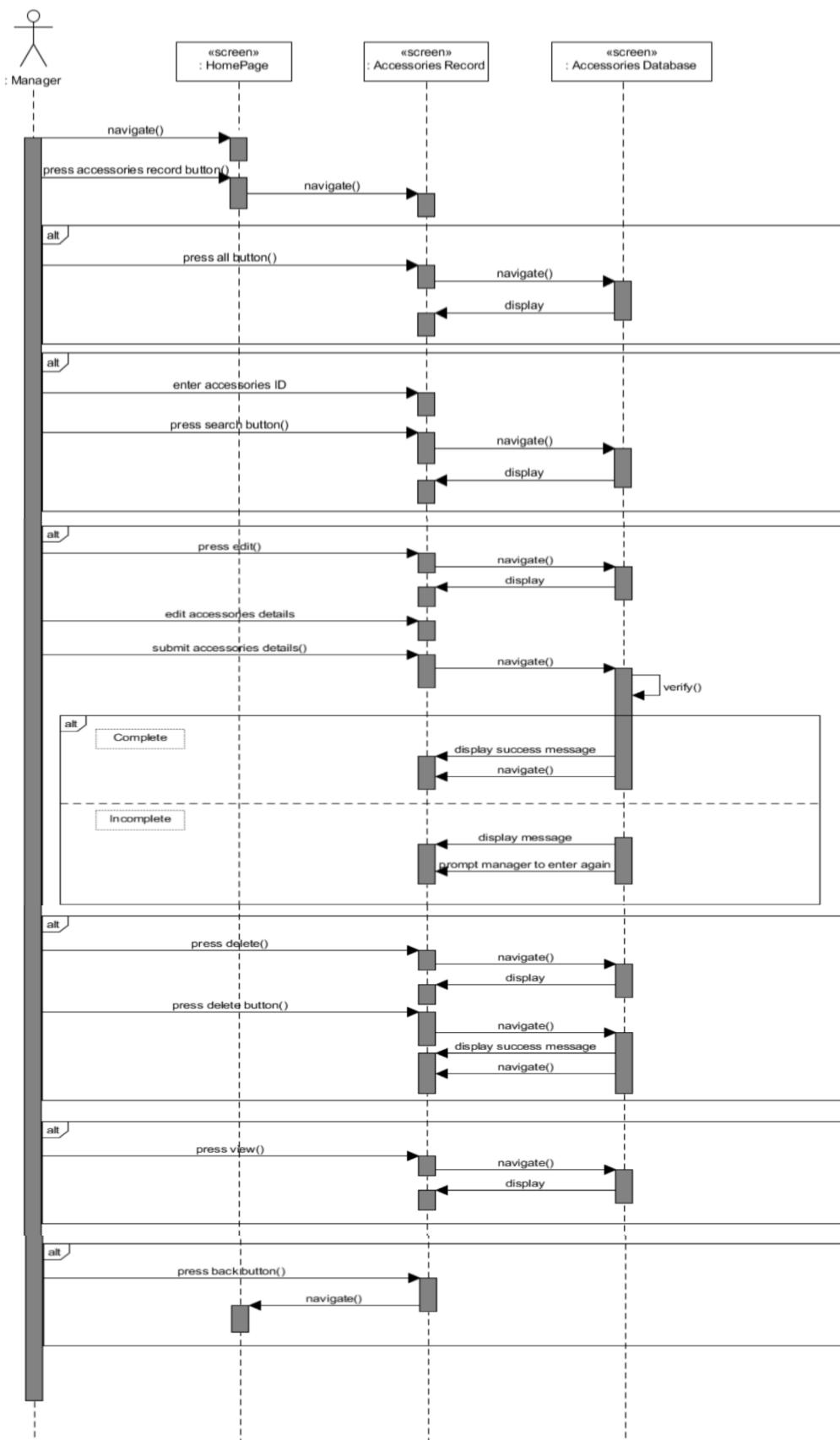


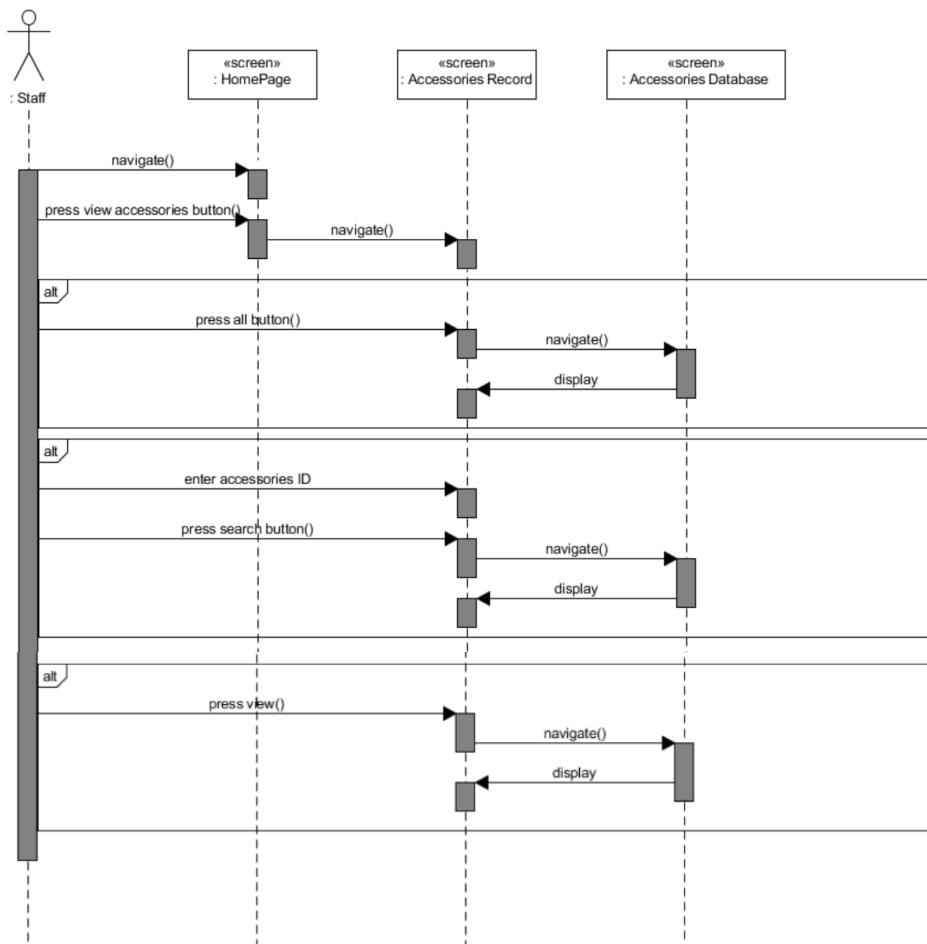


g) Manage Accessories

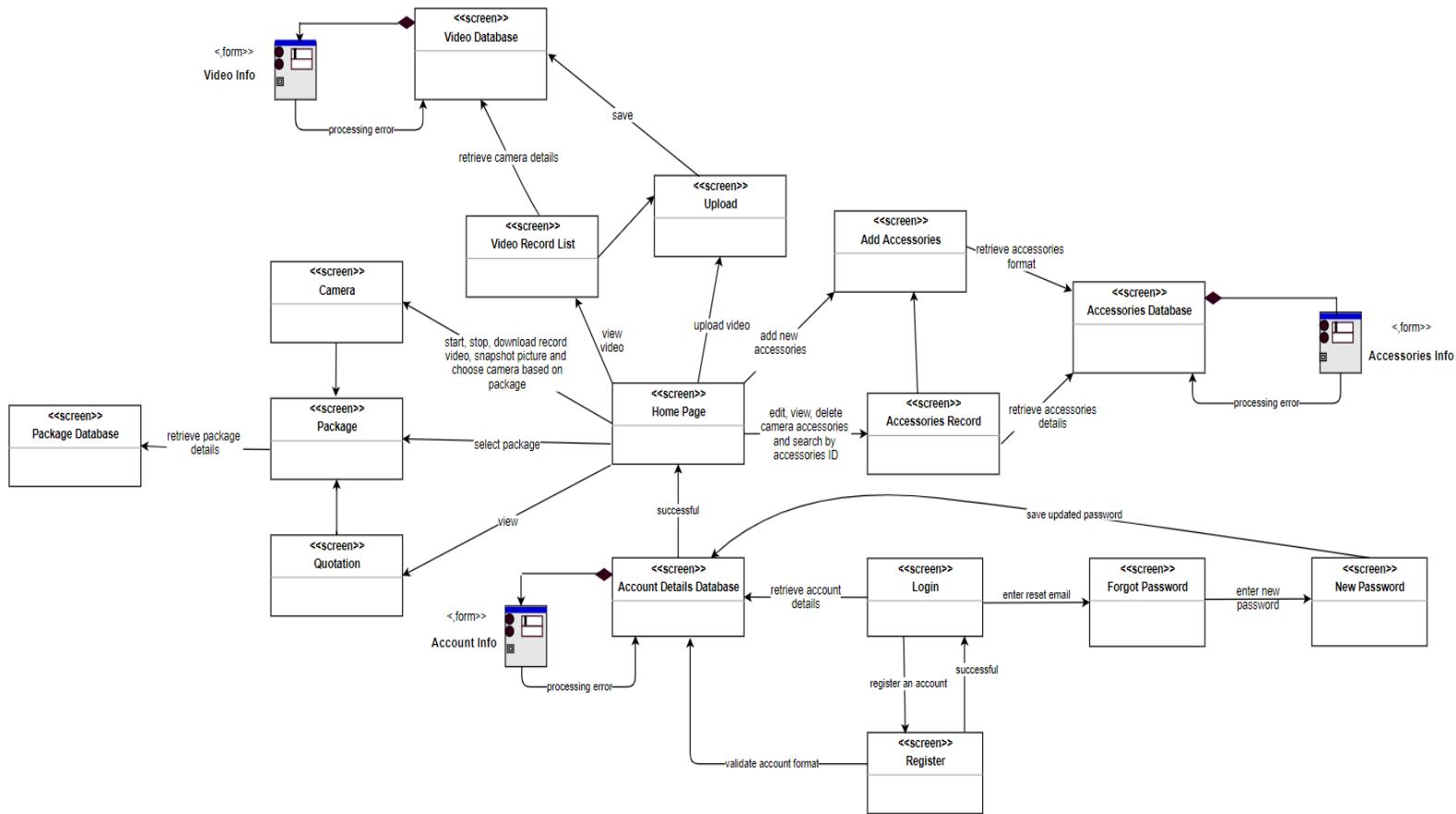


h) Search and View Accessories





Navigation Map



Manual of System

Sintok Monitoring and Surveillance Web Application address:

<http://localhost/GroupProject/index.php>

1. After open address mentioned above, it will display the login page.
2. If manager or staff do not have any account, please press ‘Create your Account’ to register for the account.
3. If you have already registered the account, please login by inserting the user ID and password. Then, press ‘Login’.
4. If you have forgotten the password, you may press ‘Forgot Password?’ to reset your new password. Please insert the email you registered with the account, press the submit button, and the reset-password link will be sent to your mailbox. Next, please click the link, insert your new password and press submit button again. And you now can login to the system with the new password.

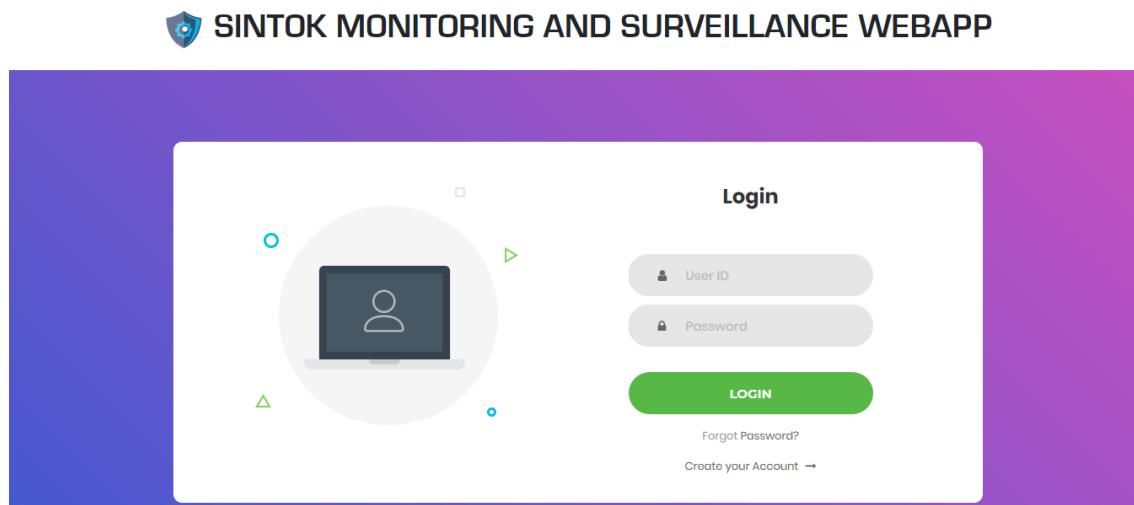
Navigation Bar	Function	If you are Manager:	If you are Staff:
Package	Package	1. select package. 2. press “Change”. 3. press “Back”.	-
	Quotation	1. press “Print”. 2. press “Back”.	-
Camera	Live Camera	Package 1: 1. press “Back”. Package 2: 1. press “Start Record”. 2. press “Stop Record”. 3. press “Snapshot Pic” 4. press “Download”. 5. press “Live Camera 2”. 6. press “Upload Video”. 7. press “Video List”. 8. press “Back”.	1. press “Back”.
	Live Camera 2	Package 1: - Package 2:	-

		1. press “Start Record”. 2. press “Stop Record”. 3. press “Snapshot Pic” 4. press “Download”. 5. press “Live Camera 1”. 6. press “Upload Video”. 7. press “Video List”. 8. press “Back”.	
	Upload Record Video	1. press “Choose File”. 2. press “Upload”. 3. press “Video List”. 4. press “Back”.	-
	Video Record List	1. press “Upload Video” 2. press “View”. 3. press “Delete”. 4. press “Back”. <i>(After video was saved into the computer)</i>	1. press “View”. 2. press “Back”. <i>(After video was saved into the computer)</i>
<hr/>			
Accessories	Add Accessories	1. press “Choose File”. 2. insert accessories details. 3. press “Submit”. 4. press “Reset”. 5. press “Cancel”. <i>(Information must insert with valid format)</i> <i>(Reset and Cancel button is optional)</i>	-
	Accessories Record	1. insert accessories ID. 2. press “Search”. 3. press “Edit”. 4. edit details from the form. 5. press “Update”. 6. press “View”. 7. press “Delete” <i>(Accessories just can be edit, delete, or view after accessories is added successfully)</i>	-
	View Accessories	-	1. insert accessories ID. 2. press “Search”.

			3. press “View”. 4. press “Back”.
<hr/>			
Log out	Log out		1. press “Log out”.

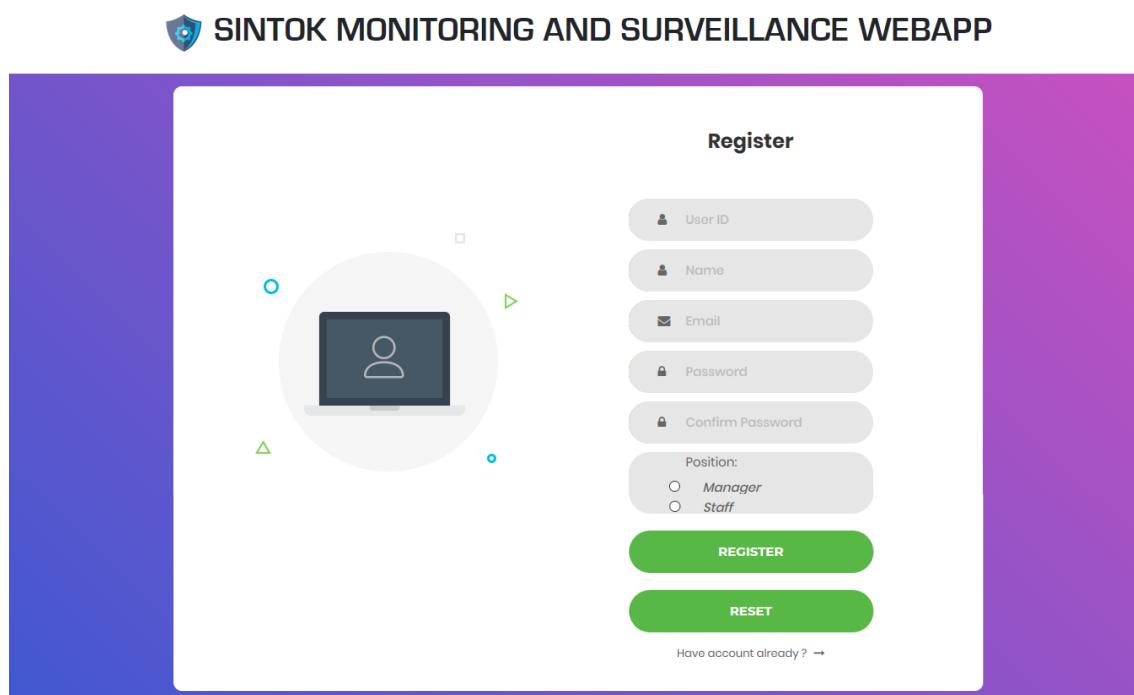
User Interface

Login



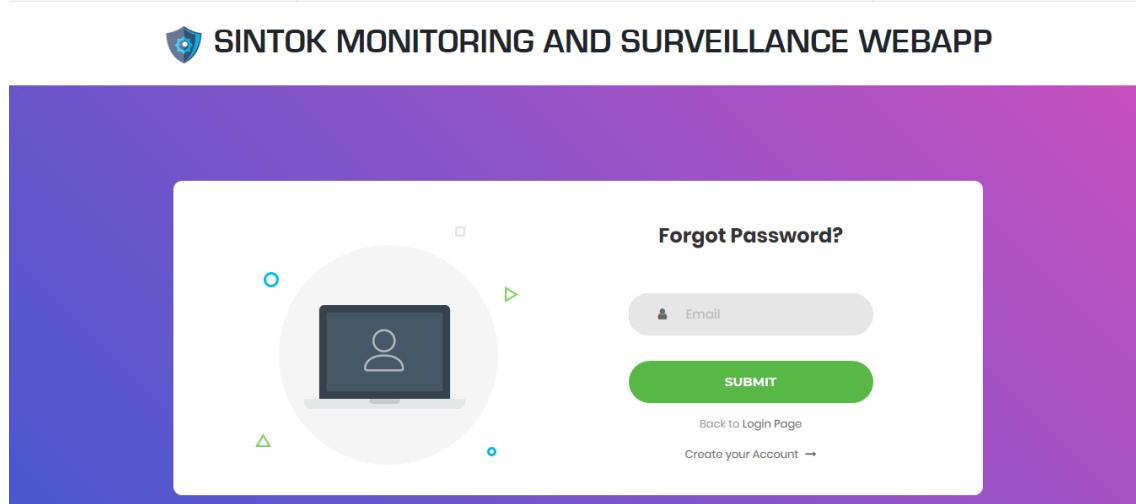
The login screen features a purple header with the text "SINTOK MONITORING AND SURVEILLANCE WEBAPP". Below the header is a white rectangular form. On the left side of the form is a circular icon containing a computer monitor with a user profile icon. To the right of the icon is the word "Login". Below "Login" are two input fields: "User ID" and "Password", each preceded by a small icon. A large green "LOGIN" button is positioned below the password field. At the bottom of the form are two links: "Forgot Password?" and "Create your Account →".

Register

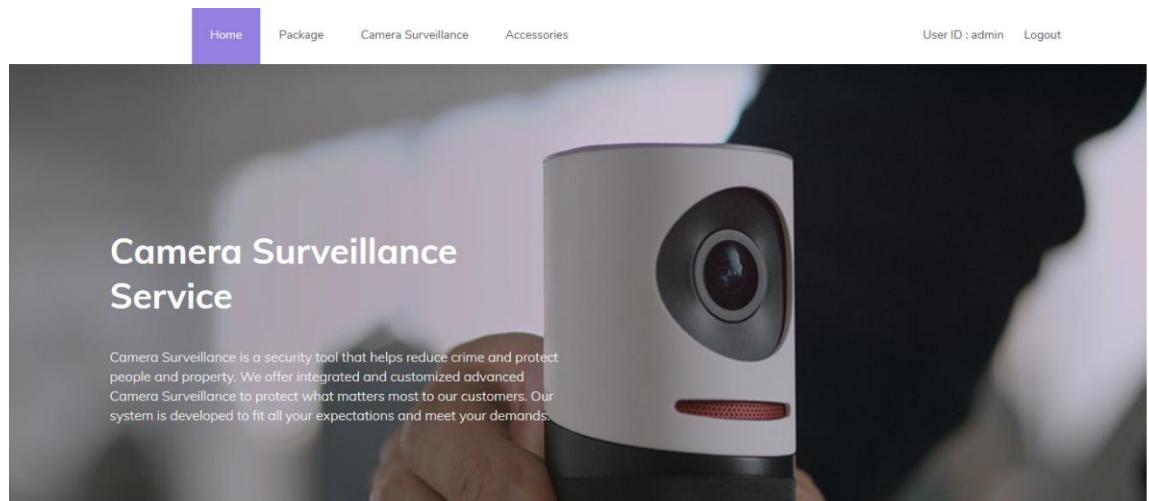


The register screen has a purple header with the text "SINTOK MONITORING AND SURVEILLANCE WEBAPP". The main content area is a white rectangle. It includes a circular icon with a computer monitor and user profile, followed by the word "Register". To the right of the icon are five input fields: "User ID", "Name", "Email", "Password", and "Confirm Password", each with a corresponding icon. Below these fields is a "Position:" section with two radio buttons: "Manager" and "Staff". At the bottom of the register form are two green buttons labeled "REGISTER" and "RESET". A link "Have account already? →" is located at the very bottom.

Forgot Password



Home Page for Manager



Packages and its details that available in your system:

Package

Quotation





Select Package (Manager)

Home User ID : admin Logout

Package For Live Camera Function

Package List For Live Camera Function						
Package	Function			Quantity of Camera	Price (RM)	Status
	Live Camera	Record Video	Snapshot Picture			
1	Yes	No	No	1	300.00	Inaction
2	Yes	Yes	Yes	2	620.00	Action

Your current package: 2

Select package you want to change:

Package 1

View Quotation (Manager)

Home User ID : admin Logout

Quotation For Your System

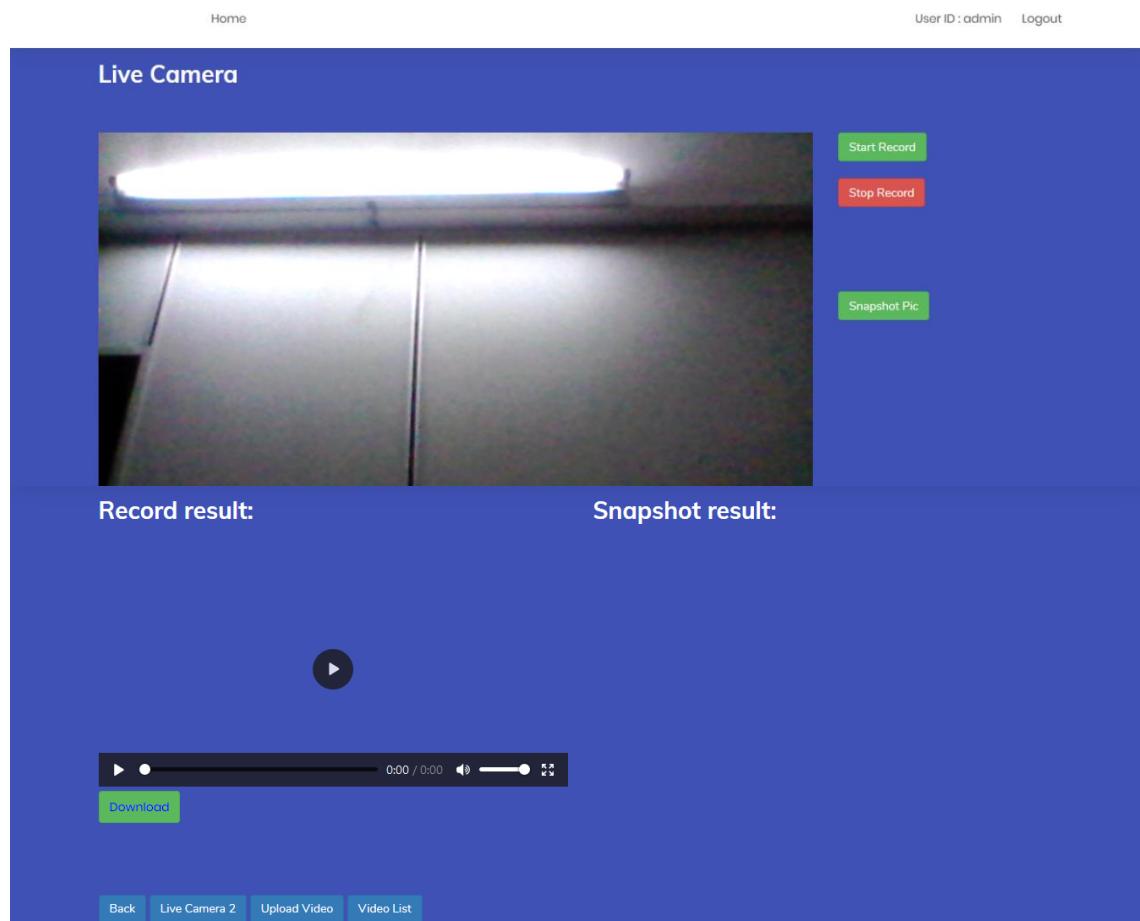
SINTOK MONITORING AND SURVEILLANCE WEBAPP

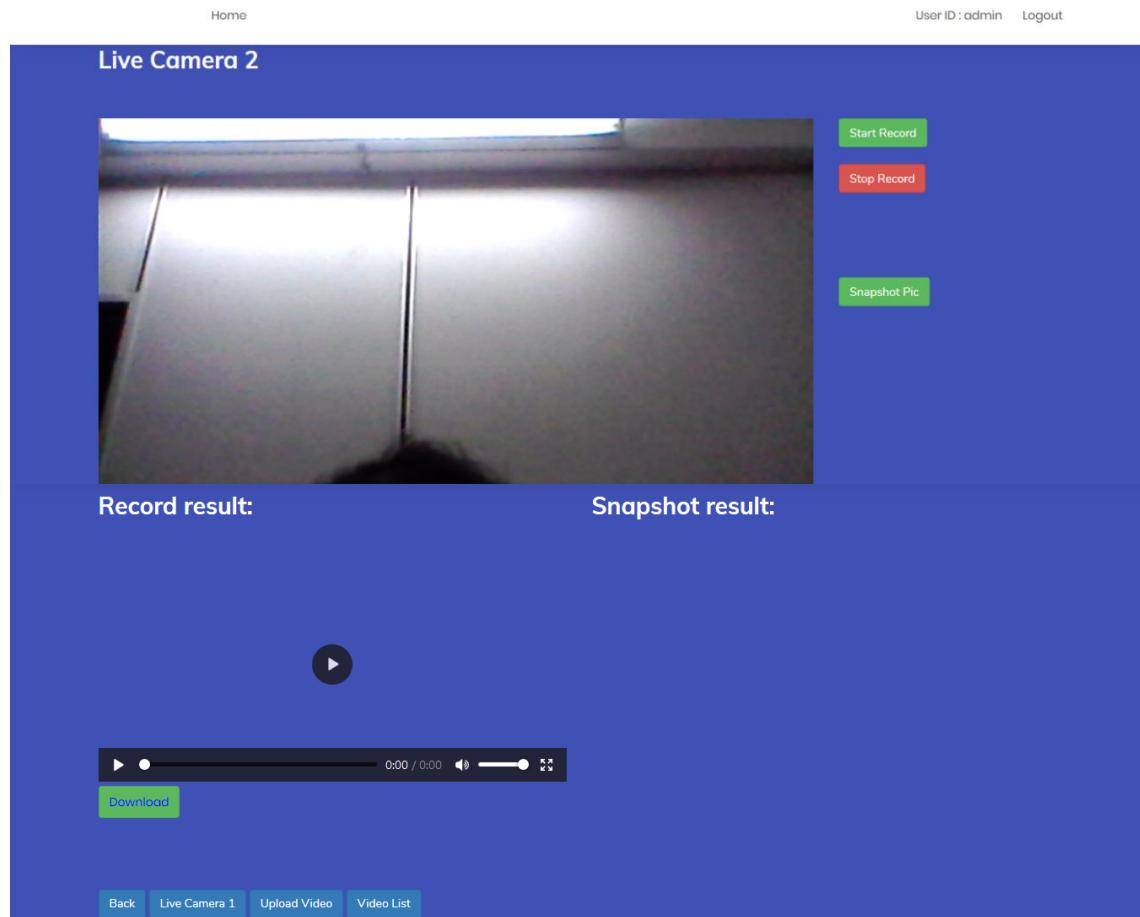
Quotation

Details		Price (RM)	
Service:			
1.	Camera:		
	Your package:	2	
	Quantity of Camera:	2	
	Function:	Live Camera Record Video Snapshot Picture	Yes Yes Yes
		620.00	
2.	Video:		
	Function:	Upload Video View Video Delete Video Download Video	Yes Yes Yes Yes
			300.00
3.	Accessories:		
	Function:	Add Accessories Edit Accessories Delete Accessories View Accessories	Yes Yes Yes Yes
			500.00
		Total Amount	1420

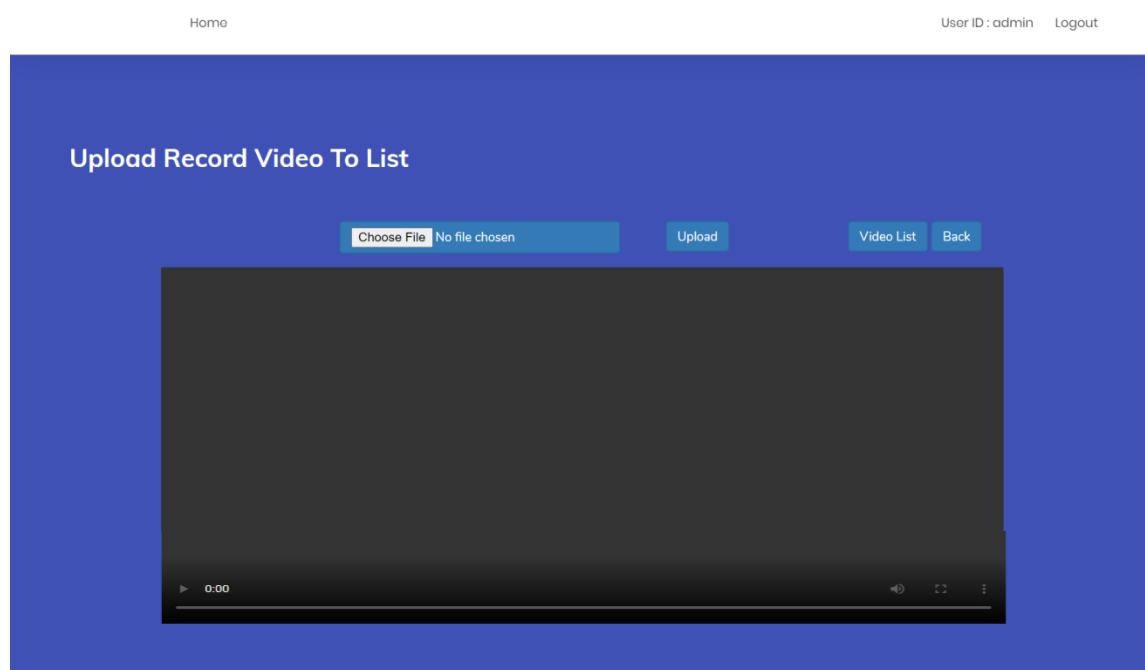
[Print](#) [Back](#)

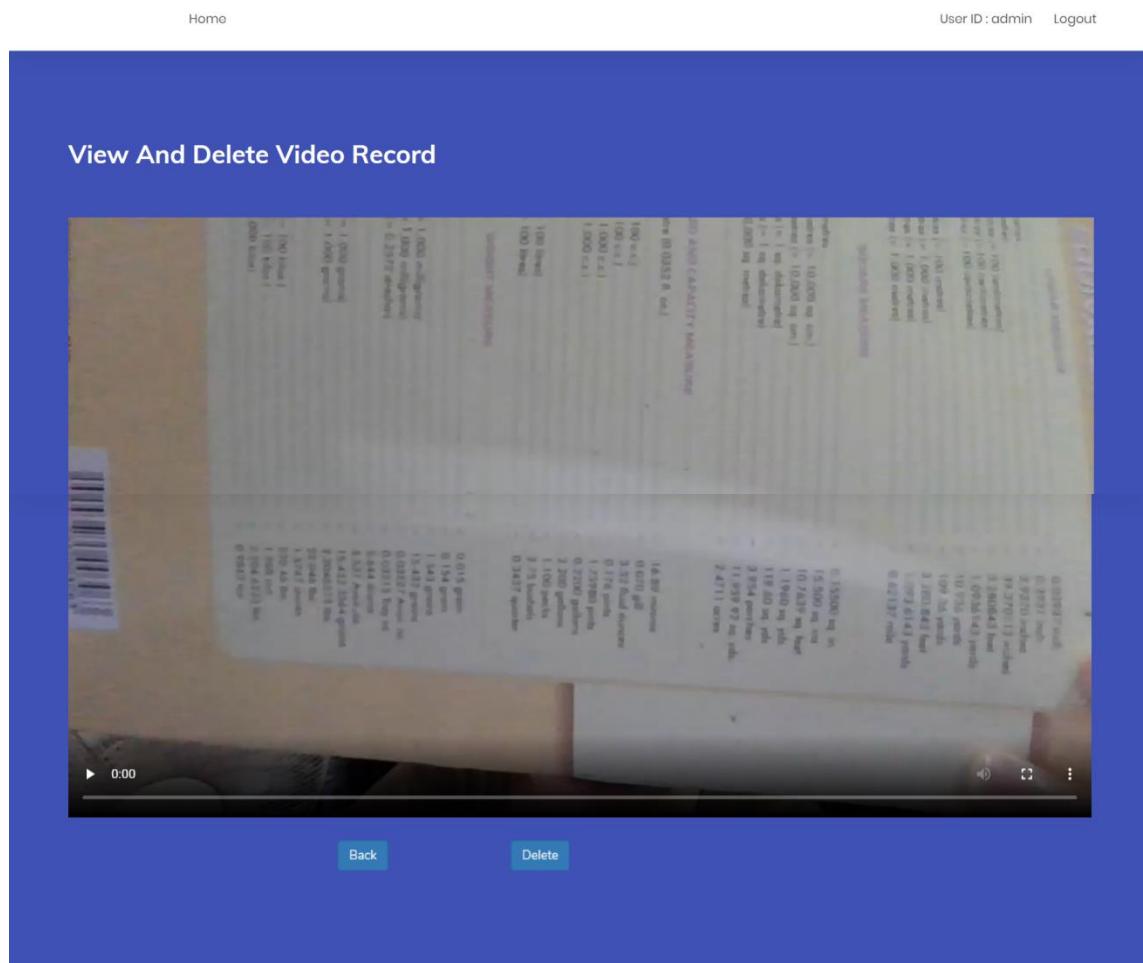
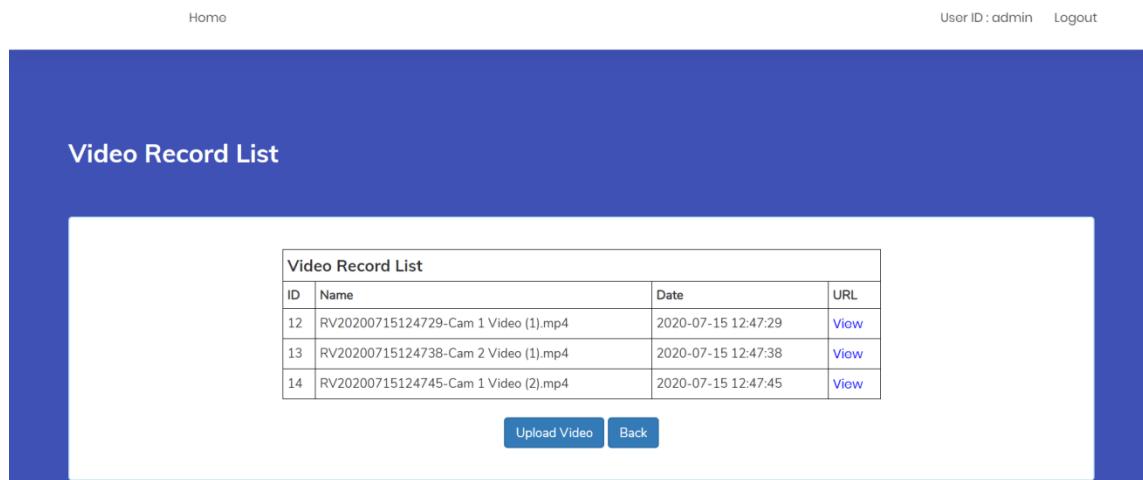
Live Surveillance Camera (Manager)





Manage Video (Manager)





Manage Accessories (Manager)

Home User ID : admin Logout

Add CCTV and Security Camera Accessories

Image:

No file chosen

Name:

Type:

Quantity:

Price (RM) per item

Search and View Accessories (Manager)

Home User ID : admin Logout

Edit, Delete, Search & View Certain CCTV Accessories

Enter Accessories ID

ID:	Accessories ID	Search	All				
CCTV Accessories list							
ID	Name	Type	Quantity	Price(RM)	Edit Detail	Delete Detail	View Detail
1037	Security Warning Sticker	Security Stickers	50	4.00	Edit	Delete	View
1038	6mm CS Mount Fixed Lens	Security Camera Lens	20	119.00	Edit	Delete	View
1039	7 inch CCTV Monitor, VGA BNC Inputs	CCTV Monitors	15	276.00	Edit	Delete	View
1040	Network Cable	Network Cable	100	56.00	Edit	Delete	View
1041	6 - 60mm Varifocal Lens CS Mount, AVF0660	Security Camera Lens	50	150.00	Edit	Delete	View
1042	CCTV Video Balun with Power, Passive, 1 Pair, VPBALUN	Video Baluns	100	55.00	Edit	Delete	View
1043	CCTV Camera Housing Weatherproof, ENCO	Security Camera Enclosures	30	125.00	Edit	Delete	View
1044	12V DC 5 Amp Volt Power Supply, 12V5000	Power Supplies/POE	200	99.00	Edit	Delete	View
1045	Outdoor Security Camera Microphone, 71891	Camera Microphone	13	66.00	Edit	Delete	View
1046	Wall Mount Bracket for DVR Lock Box, DVRBLR	Others	11	120.00	Edit	Delete	View
1047	12V DC 500mA Power Supply, 12V5MA	Power Supplies/POE	50	12.00	Edit	Delete	View
1048	12V CCTV Power Supply Box,	Power Supplies/POE	45	129.00	Edit	Delete	View
1049	Infrared Illuminator 40ft Night Vision	Infrared Illuminators	3	229.00	Edit	Delete	View
1050	50ft Siamese Cable, White	Network Cable	30	28.00	Edit	Delete	View
1051	Type C 5V DC Power Cable	Network Cable	50	10.00	Edit	Delete	View
1052	8 Camera Video Switcher, 8 Channel Matrix, 9008CQ	CCTV Video Multiplexers	15	155.00	Edit	Delete	View

[Back](#)

Home

User ID: admin Logout

Edit CCTV and Security Camera Accessories Details

Image:



Browse... No file selected.

Name:

Type:

Quantity:

Price (RM) per item

[Update](#) [Reset](#) [Cancel](#)

Home

User ID: admin Logout

Delete CCTV and Security Camera Accessories Details

Name:
Security Warning Sticker

Type:
Security Stickers

Quantity:
50

Price (RM) per item
4.00



[Delete](#) [Cancel](#)

Home User ID : admin Logout

View CCTV and Security Camera Accessories Details

Name:
8 Camera Video Switcher, 8 Channel Matrix, 9008CQ

Type:
CCTV Video Multiplexers

Quantity:
15

Price (RM) per item
155.00



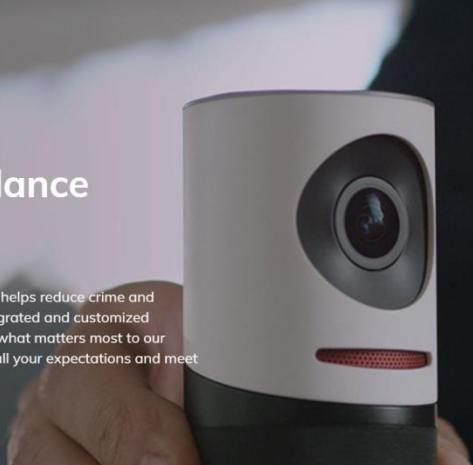
[Back](#)

Home Page for Staff

Home Camera Surveillance Accessories User ID : yj123 Logout

Camera Surveillance Service

Camera Surveillance is a security tool that helps reduce crime and protect people and property. We offer integrated and customized advanced Camera Surveillance to protect what matters most to our customers. Our system is developed to fit all your expectations and meet your demands.



Start using camera Surveillance with our service

 Live Camera

 View Video Record

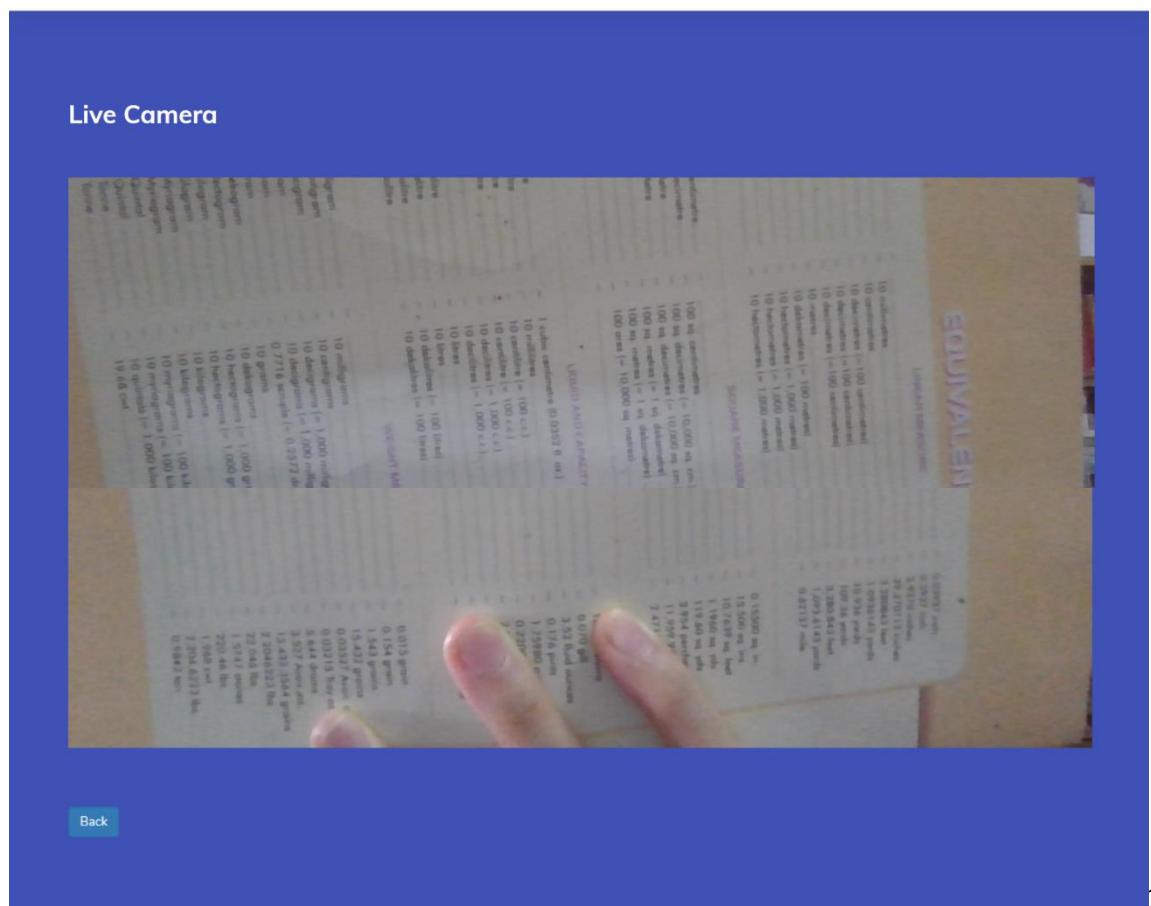




Live Surveillance Camera (Staff)

Home

User ID : yj123 Logout



Manage Video (Staff)

Home User ID: yjl23 Logout

Video Record List

Video Record List			
ID	Name	Date	URL
12	RV20200715124729-Cam 1 Video (1).mp4	2020-07-15 12:47:29	View
13	RV20200715124738-Cam 2 Video (1).mp4	2020-07-15 12:47:38	View
14	RV20200715124745-Cam 1 Video (2).mp4	2020-07-15 12:47:45	View

[Back](#)

Home

User ID : yjl23 Logout

View Video Record

Search and View Accessories (Staff)

Home User ID : yj123 Logout

View Certain CCTV Accessories

Enter Accessories ID

CCTV Accessories list					
ID	Name	Type	Quantity	Price(RM)	View Detail
1037	Security Warning Sticker	Security Stickers	50	4.00	View
1038	6mm CS Mount Fixed Lens	Security Camera Lens	20	119.00	View
1039	7 inch CCTV Monitor, VGA BNC Inputs	CCTV Monitors	15	276.00	View
1040	Network Cable	Network Cable	100	56.00	View
1041	6 - 60mm Varifocal Lens CS Mount, AVF0660	Security Camera Lens	50	150.00	View
1042	CCTV Video Balun with Power, Passive, 1 Pair, VPBALUN	Video Baluns	100	55.00	View
1043	CCTV Camera Housing Weatherproof, ENCO	Security Camera Enclosures	30	125.00	View
1044	12V DC 5 Amp Volt Power Supply, 12V5000	Power Supplies/POE	200	99.00	View
1045	Outdoor Security Camera Microphone, 71891	Camera Microphone	13	66.00	View
1046	Wall Mount Bracket for DVR Lock Box, DVRLBR	Others	11	120.00	View
1047	12V DC 500mA Power Supply, 12V5MA	Power Supplies/POE	50	12.00	View
1048	12V CCTV Power Supply Box,	Power Supplies/POE	45	129.00	View
1049	Infrared Illuminator 400ft Night Vision	Infrared Illuminators	3	229.00	View
1050	50ft Siamese Cable, White	Network Cable	30	28.00	View
1051	Type C 5V DC Power Cable	Network Cable	50	10.00	View
1052	8 Camera Video Switcher, 8 Channel Matrix, 9008CQ	CCTV Video Multiplexers	15	155.00	View

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Video Link

<https://youtu.be/bF6d3JfY8j8>

PHP Link

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