

SKPL-XXXX

SOFTWARE ENGINEERING ANALYSIS SPECIFICATION

Inventory Management Software For SE Laboratory

For:

Software Engineering Laboratory Member

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1. Introduction

1.1 Document Purpose

This document is about Software Requirement Specification (SRS) for inventory management software for SE laboratory. The purpose of this document is to give a detailed explanation about the software that is going to be developed. This document can be used as a reference in the process of developing the software especially in the development of inventory management software.

1.2 Document Convention

Bold text – Signifies the title of the content

“Quotation text” - “Signifies the text that will appear in the Software”

1.3 Product Scope

The software that is going to be developed is Inventory Management Software that is a browser-based method allowing for a simple, hassle-free system for managing laboratory inventory. This software can do the following things:

1.3.1. Login system that can only be accessed by laboratory members to avoid a non-member getting access to the software.

1.3.2. Laboratory inventory input system, laboratory members can input a new inventory to the software.

1.3.3. Showing list of laboratory inventory e.g. software, application, equipment.

1.3.4. Borrowing system, laboratory members can request to borrow laboratory equipment.

With this product, software or applications that have been made by lab members can be stored and managed in one place properly and can make it easier to access all software/applications that have been made by lab members. In addition, this product can also be used as a facility for formally borrowing laboratory equipment. This software not only produces an effective way to manage and control the laboratory inventory, but it also produces a borrowing system in a formal way.

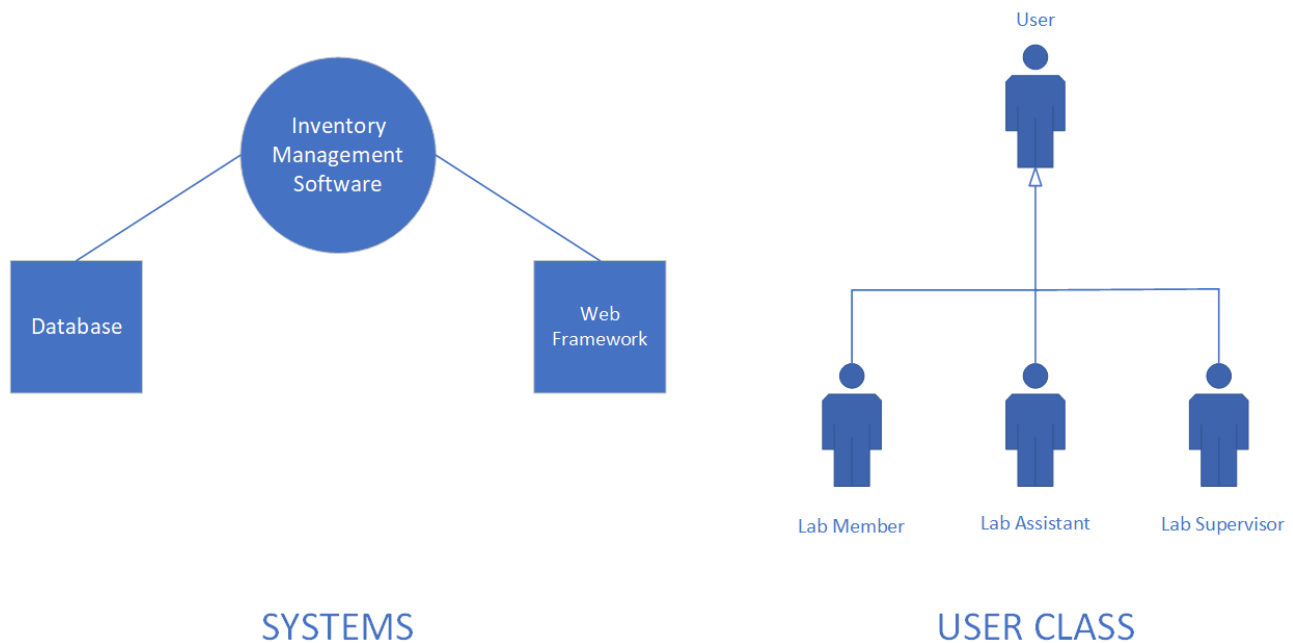
1.4 References

Vicory, et. al. Software Requirements Specification for p2pcast, 2014

2. Overall Description

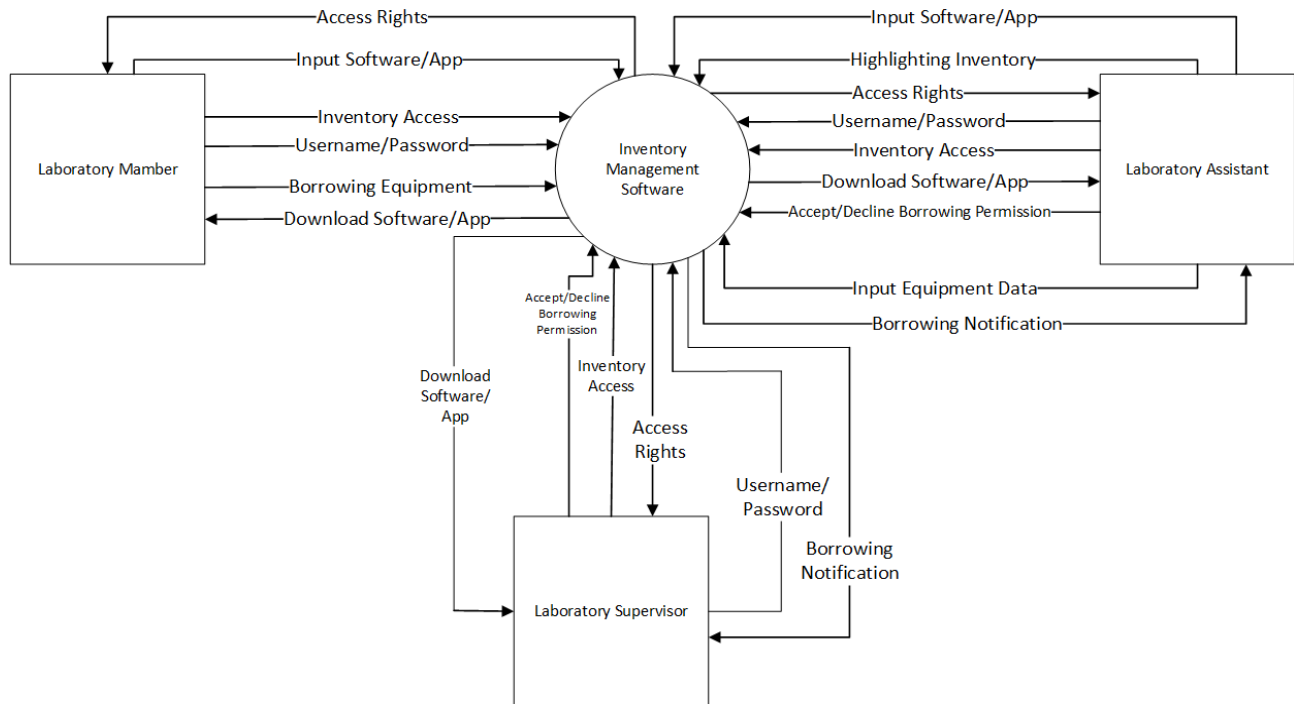
2.1 Product Perspective

This inventory management software is developed to store software/applications that are created by laboratory members in one arranged place or in an inventory system. Its main feature is to manage and control the inventory system. Another feature of this product is a borrowing system. The overall context described in the diagram below.



There are several systems that apply in this software. The searching system which is used for search and find information, the storing system which stores information and notification system which notify information to the user. There are three user classes which are lab members, lab assistants and lab supervisors. Lab members act as users in general while lab assistants and lab supervisors act as the admin.

2.2 Product Functionality



This inventory management system is used by three specific users, there are lab members, lab assistants and lab supervisors. All users need to login and input their username/password to get an access to the product. The inventory can be accessed by all users and it can be opened or downloaded. Lab members and lab assistants can upload or store new software projects to the inventory. Laboratory assistants have access to the equipment inventory and manage it. Laboratory assistants can highlight the contents of the inventory to be shown in the main page. Laboratory members can request to borrow laboratory equipment and the software will give notification to the laboratory assistant and laboratory supervisor. Borrowing requests will be approved if both the laboratory assistant and laboratory supervisor give permission.

2.3 Users Class and Characteristics

There are three actors that are going to use this software.

- Lab members can optimize laboratory facility
 - Lab facility borrow request
 - Input project software
- Lab assistance can better manage lab members activity
 - Borrowing approval
 - Highlight lab inventory
 - Add and delete lab inventory
- Lab supervisor can optimize laboratory management
 - User access rights

- Borrowing approval

All the users have access to the inventory to open and download the contents of the inventory.

2.4 Operating Environment

- Windows 7+, Mac OS X 10.8+ and Linux 5.10.7+
- Browser
 - Safari v11.1.2+
 - Chrome v87.0.4280.141+
 - Mozilla v84.0.2.+
 - Edge v45.12.4.5121+
- MySQL (Database)
- Django Framework (Web Framework)

2.5 Design And Implementation Constraints

- The software is web base
- Development use Python language

2.6 User Documentation

Our software has a large storage that can input many inventory in large sizes. The GUI is quite familiar so it's easy to access and use.

2.7 Assumptions And Dependencies

- Users hardware must meet minimum system requirements
- Browser listed above are available to use
- Windows and MacOS operating system are available to use
- Reliable internet connection from the user
- Reliable server provider

3. External Interface Requirements

3.1 User Interfaces

3.1.1 Login Menu

“Inventory Management System for SE Laboratory” is written in the middle of the page. Beneath the title, we have a username and password section, these sections need to be able to receive words, numbers, as well as special characters. In the bottom we have a login button that if pressed it will jump to the software main menu page (as long as the username and

password is valid). If the username and/or password is invalid it will show a text that says “Username and Password is invalid.”.

3.1.2 Home (Lab Member)

Lab member profile picture is located in the middle top part of the page, below the text “My Profile”. Beneath profile picture on the left hand side we have an inventory button, when clicked it will open the inventory page, showing a list of inventory that the laboratory has. On the right we have input a new project button, when clicked it will open up a form where lab members can fill out a form in order to input a new project. On the middle bottom of the page we have a borrow request button, when clicked it will open up a form where lab members can fill out the form in order to borrow lab inventory.

In every page, there exists a page template such as on the top left of the page, it is written “Inventory Management System” and on the top right of the page, there is a notification button, it will show the list of notifications that the user received or it says “No notification” if the user does not have any notification. Beside the notification, there is a logout button that will cut off the access to the software.

3.1.3 Home (Lab Assistant)

Lab assistance profile is located in the middle top part of the page, below the text “My Profile”, Beneath profile picture we also have inventory and input new project button, which are located and have a similar purpose and functionality as in section 3.1.2. On the bottom left of the screen we have a borrow request button, when clicked it will open up a page containing a table with a list of pending borrow requests from lab members, where lab assistance can accept borrow requests from lab members. on the bottom right of the screen we have an input equipment button, when clicked it will open up a form, where lab assistance can input equipment to the laboratory by filling up the required form. In this page also exists a page template whose location and functions are the same as in section 3.1.2.

3.1.4 Home (Lab Supervisor)

Lab supervisor profile is located in the middle top part of the page, below the text “My Profile”, on the left hand side of the page we have an inventory button whose functions are the same as in section 3.1.2. On the right hand side of the page we have a borrow request button, when clicked it will open up a page containing a table with a list of pending borrow requests from lab assistance, where the lab supervisor can accept borrow requests from lab assistance. In this page also exists a page template whose location and functions are the same as in section 3.1.2.

3.1.5 Profile Page

User profile picture is located in the middle top part of the page below the profile picture there are a couple of rows. The rows are “Name” that shows the current name of the user in the format of text, “Roles” that shows the current role of that user in the laboratory in the format of text, “Faculty” that shows the name of the user faculty that are currently enrolled in the university in the format of text, and some statistical history of the current account such as the number of uploaded project in the format of number and the number of borrowed

request in the format of number. In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.6 Inventory

On the top left, there is a location of the page, example Home/Inventory. On the top of the page, it said “Highlighted Inventory”. In the highlighted inventory section, highlighted inventory will be shown by four boxes and it will shift left one by one if highlighted inventory is more than four. Each box displays the picture of the inventory and its name. Beneath the highlighted section, there is a search section that is able to receive text. The search section will display a list of the content of the inventory that matches the text that it inputted in the search section. On the left of the search section, there is an “+ Input” button that jumps to the input project page (refer to 3.1.7). Table of the contents of the inventory located on the bottom of the page, it lists the content of the inventory alphabetically. The table has three columns, namely “Name” that show the name of the content in the format of text, “Created by” that show who created the content in the format of text and “Type” that show the type of the content in the format of text. If the row of the content is clicked, it will jump to its content page (refer to 3.1.6). In this page also exists a page template whose location and functions are the same as in section 3.1.2.

3.1.7 Inventory 1

Inventory 1 is the example of the name of the content of the inventory in software/application type. On the top of the page, it shows the content name and the picture of the content (below the content name). Beneath the picture, there are five rows. The rows are “Name” that show the name of the content in the format of text, “Created by” that show who created the content in the format of text, “Date” that show the date when is the content created in the form of a date format DD/MM/YYYY, “File Type” that show the file type of the content in the format of text and “Description” that show an explanation about the content in the format of text. On the bottom right, there is a “Download/Open” button that if clicked it will download the content if the file type is executable or it will open the content’s link in the user’s browser if the content file type is web-based software. If the user is the owner of the inventory, there is an edit button on the top left of the page to edit the content’s detail. If the user is a Lab Assistant, there is an additional button next to the content name on the top of the page, which is a “Highlight” button that will highlight the content and it will be shown on the Inventory page (refer to 3.1.5). In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.8 Inventory 2

Inventory 2 is the example of the name of the content of the inventory in equipment/furniture type. There are six rows. The rows are “Name” that show the name of the content in the format of text, “Type” that show the type of the inventory whether Equipment or Furniture in the form of text, “Brand” that show the brand of the content in the format of text, “Date of Entry” that show the date when is the content enter the lab in the form of a date format DD/MM/YYYY, “Quantity” that show the number of the content that exist on the lab in the format of number and “Description” that show an explanation about the content in the format of text. If the user is a Lab Assistant, there is an edit button on the

top left of the page to edit the content's detail. In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.9 Input Project

The title "Input Project" is shown at the top left of the page. Beneath the title in the middle of the page is shown the picture of the project. Beneath the picture it will show a form consisting of five rows. The rows are "Name" that the user need to input the the name of the project, this sections need to be able to receive words, numbers, as well as special characters, "Created By" where the user need to input the name of the project creator in the format of text, "Date" that shows the date of inputting the project in the form of a date format DD/MM/YYYY, "File Type" in which an user must choose which type of file they would like to upload according to their project, the options are exe or web-based software and "Upload File" in which the user must chose their project file from the user's file explorer application. On the bottom left of the page there is a submit button, when clicked the items and its detail will be inputted, and automatically added in the inventory page (refer to 3.1.6). In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.10 Input Equipment

The title "Input Equipment" is shown at the top left of the page. Beneath it, there are six columns that needed to be filled. The columns are "Name" where the user input the name of the content in the format of text, "Type" where the user choose the type of the inventory whether it is Equipment or Furniture in the form of text, "Brand" where the user input the brand of the content in the format of text, "Date of Entry" where the user input the date when is the content enter the lab in the form of a date format DD/MM/YYYY, "Quantity" where the user input the number of the content that are going to be added on the lab in the format of number and "Description" where the user give an explanation about the content in the format of text. In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.11 Input Borrow Request (Lab Member)

The title "Borrow Request" is shown at the top left of the page. Beneath the title it will show a form consisting of five rows. The rows are "Name" in which the system will automatically inputted the name of the borrower based on the user account in the format of text, "Equipment Name" where the user need to select which equipment they would like to borrow in the format of text, "Quantity" where the user need to input how many of the equipment they would like to borrow in the format of number, "Start Date" where the user need to input the date when they would like to begin borrowing the equipment in the form of a date format DD/MM/YYYY, "End Date" where the user need to input the date when they planned to finished borrowing the equipment in the form of a date format DD/MM/YYYY, "Borrowing Reason" where the user can type some description of the reason they would like to borrow that equipment this sections need to be able to receive words, numbers, as well as special characters. On the bottom right of the page there is a submit button, when clicked the request and its details will be inputted, and automatically added in the borrow request for

Lab Assistant (refer to 3.1.10). In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.12 Borrow Request Menu (Lab Member)

The title “Borrow Request” is shown at the top left of the page. Beneath the title, there is a table with 5 (five) columns. The name of the columns are “Equipment Name” that shows the name of the borrowed equipment by the user in the format of text, “Quantity” that shows the quantity of the equipment that borrowed by the user in the format of number, “Start Date” that show when will the user start to borrow the equipment in the form of a date format DD/MM/YYYY, “End Date” that show when will the user should finish borrowing the equipment in the format of a date format DD/MM/YYYY, “Status” that show “Rejected”/“Being Borrowed”/“Overdue”/“Finished” in the format of text if one of the sign has been clicked. If the user has never borrowed anything, it will show an empty table. In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.1.13 Borrow Request Menu (Lab Assistant)

The title “Borrow Request” is shown at the top left of the page. Beneath the title, there is a table with 8 (eight) columns. The name of the columns are “Borrower Name” that shows the name of the borrower in the format of text, “Equipment Name” that shows the name of the equipment that borrowed by the borrower in the format of text, “Quantity” that shows the quantity of the equipment that borrowed by the borrower in the format of number, “Start Date” that show when will the borrower start to borrow the equipment in the form of a date format DD/MM/YYYY, “End Date” that show when will the borrower finish borrowing the equipment in the format of a date format DD/MM/YYYY, “Borrowing Reason” that show the reason why the borrower borrow the equipment in the format of text, “Status” that shows ✓ and X sign if the request has not been decided by the user or it will show “Rejected”/“Being Borrowed”/“Overdue”/“Finished” in the format of text if one of the sign has been clicked, the last row is “Returned” that show a checkbox, the user will check the box if the borrower has returned the borrowed equipment and the status in the status column will change to “Finished”. On the “Status” column, the user will click ✓ if the request is accepted or click X if the request declined and it will send a notification to the borrower. In this page also exists page location and page template whose location and functions are the same as in section 3.1.6.

3.2 Software Interfaces

Inventory Management System is a program to be built using MySQL DBMS as a database, Django framework as web framework to develop web applications. This web running on Windows, Mac, Linux operating systems and can use computer browsers and mobile browsers such as safari, chrome, mozilla, and edge.

3.3 Communication Interfaces

Our system uses HTTPS protocol in order to secure data transmitted from two systems. This is particularly important when users transmit sensitive data, such as user login.

4. System Features

4.1 Login

4.1.1 Description:

Login is a process to access the software by inputting an identity of the user (username) and password to get access rights to use the software.

4.1.2 Trigger:

Login page will show on the user screen if the user opens the software's link.

4.1.3 Input:

The user must input his/her username and password in the provided column. After those columns are filled, the user must point the cursor to the login button and click it to finish the login session.

4.1.4 Output:

After the login session is fulfilled, the user will jump to the software's Home menu.

4.1.5 Main Scenario:

Login will be successful if the user input the correct username and password.

4.1.5.1 Precondition:

Username and password columns are empty.

4.1.5.2 Postcondition:

The user will jump to the software's Home menu.

4.1.5.3 Steps:

- o Fill in the username column with the user's username.
- o Fill in the password column with the user's password.
- o Click the login button.

4.1.6 Exceptional Scenario 1:

If the user input the wrong username, the software will give a message that says “Username and Password is invalid.”.

4.1.6.1 Precondition:

Username and password columns are empty.

4.1.6.2 Postcondition:

A short message will appear that says “Username and Password is invalid.”

4.1.6.3 Steps:

- o Fill in the username column with the typo/wrong username.
- o Fill in the password column with the user’s password.
- o Click the login button.

4.1.7 Exceptional Scenario 2:

If the user input the typo/wrong password, the software will give a message that says “Username and Password is invalid.”.

4.1.7.1 Precondition:

Username and password columns are empty.

4.1.7.2 Postcondition:

A short message will appear that says “Username and Password is invalid.”.

4.1.7.3 Steps:

- o The user opens the software’s link.
- o Fill in the username column with the user’s username.
- o Fill in the password column with the typo/wrong password.
- o Click the login button.

4.2 See Profile

4.2.1 Description:

See profile is a feature that will show the profile of the current user, such as the picture of the user, name of the user, roles of the user in the laboratory, faculty which shows which faculty the user currently enrolled in the university.

4.2.2 Trigger:

My Profile text in the Home page is being clicked.

4.2.3 Input:

The cursor or pointer points to My Profile text.

4.2.4 Output:

It will jump to the Profile page.

4.2.5 Main Scenario:

If My Profile text on the Home page is clicked, it will jump to the Profile page.

4.2.5.1 Precondition:

The user is on the Home page. <Jelaskan kondisi sebelum skenario ini dieksekusi>

4.2.5.2 Postcondition:

The user moves to the Profile page. <Jelaskan kondisi setelah skenario ini dieksekusi>

4.2.5.3 Steps:

- o The user is currently at the Home page.
- o Click My Profile text on the Home page. <Jelaskan langkah pertama dari eksekusi fitur>

4.3 See Notification

4.3.1 Description:

It is a feature that shows the list of notifications that the user gets.

4.3.2 Trigger:

Click the notification button.

4.3.3 Input:

The cursor or pointer points to the notification button.

4.3.4 Output:

It displays the list of notifications or it will say “No notification” if the user does not have any notification.

4.3.5 Main Scenario:

The user notifications will be listed and shown.

4.3.5.1 Prakondisi:

The user is on any page within the software.

4.3.5.2 Postcondition:

It displays the list of notifications or it will say “No notification” if the user does not have any notification.

4.3.5.3 Steps:

- Click the notification button.

4.4 Logout

4.4.1 Description:

The logout feature will sign off current users from the software, preventing other users from using the account and allowing another user to be logged on to the account.

4.4.2 Trigger:

Clicking the logout button on the top left of the software.

4.4.3 Input:

The cursor pointed and clicked at the logout button.

4.4.4 Output:

The server will sign out the current users and the users page will be directed to the login page (refer to 3.1.1).

4.4.5 Main Scenario:

User logged out from the software successfully.

4.4.5.1 Precondition:

Current users still logged on to the software allowing the user to have full access to the software according to their roles.

4.4.5.2 Postcondition:

Server will sign out the current user and redirect to the login page, the user needs to fill their email and the password in the login page to be able to have access to the software again.

4.4.5.3 Steps:

- Clicking the logout button.

4.5 See Inventory Menu

4.5.1 Description:

The feature that will allow all users (lab members, lab assistant, and lab supervisor) to see all inventory that the laboratory currently has.

4.5.2 Trigger:

Clicking the inventory button/logo on the Home page.

4.5.3 Input:

The cursor is pointed and clicked at the inventory button.

4.5.4 Output:

The database system will transmit inventory data to the user software, and the user will be directed to the inventory page.

4.5.5 Main Scenario:

The user can see the content of the inventory.

4.5.5.1 Precondition:

The user is on the Home page of the software.

4.5.5.2 Postcondition:

The user will be directed to the Inventory page.

4.5.5.3 Steps:

- The user is currently at the Home page.
- Click the inventory button/logo on the Home page.

4.6 Browse Location

4.6.1 Description:

Browse location is a feature that can move the user to the previous page or the root of the current open page.

4.6.2 Trigger:

Click the name of the page on the location section.

4.6.3 Input:

The cursor is pointed and clicked at the page location.

4.6.4 Output:

The user will be redirected to the desired page.

4.6.5 Main Scenario:

The user will be redirected to the desired page if the user clicks the name of the page in the location section.

4.6.5.1 Precondition:

The user is on any page within the software except the Home page.

4.6.5.2 Postcondition:

The user will be redirected to the desired page.

4.6.5.3 Steps:

- Click the name of the location on the location section.

4.7 Search Inventory

4.7.1 Description:

The search inventory feature will allow users to specifically search for an inventory in the laboratory inventory database system.

4.7.2 Trigger:

User clicked the search box in the inventory page.

4.7.3 Input:

Cursor pointed and clicked the search box in the inventory page, then the user will type the inventory they would like to search in the search box in the format of text.

4.7.4 Output:

The database system will send the request back to the user software, and the user will see a list of inventory that they have searched based on the inputted text.

4.7.5 Main Scenario:

Users successfully find the searched inventory.

4.7.5.1 Precondition:

The user is on the Inventory page and the search box is empty.

4.7.5.2 Postcondition:

The database system will send back the request, and it will show a list of inventory that they have searched.

4.7.5.3 Steps:

- The user is currently at the Inventory page.
- On the Inventory page the user clicked the search box on the middle of the inventory page.
- The user inputting text in the search box.

4.7.6 Exceptional Scenario 1:

Users unable to find the searched inventory.

4.7.6.1 Precondition:

The user is on the Inventory page and the search box is empty.

4.7.6.2 Postcondition:

The database system will send back the request, and it will show the text “Inventory that you have searched for is unavailable”.

4.7.6.3 Steps:

- The user is currently at the Inventory page.
- On the Inventory page the user clicked the search box on the middle of the inventory page.
- The user inputting text in the search box.

4.8 Open Inventory

4.8.1 Description:

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<i>Dokumen ini dan informasi yang ada di dalamnya adalah milik Prodi SI Teknik Informatika-Universitas Telkom dan bersifat rahasia. Dilarang untuk mereproduksi dokumen ini tanpa diketahui oleh Program Studi SI Teknik Informatika, Universitas Telkom</i>		

The open inventory feature will allow users to see the further detail of a specific inventory such as the name of the inventory, the creator of the inventory, the date of uploaded inventory, and the file type of the inventory.

4.8.2 Trigger:

Picture of the inventory on the highlighted section is clicked or the name of the inventory is clicked on the inventory list or the name of the inventory is clicked on the search result.

4.8.3 Input:

Cursor pointed and clicked either on the highlighted section or the name of inventory.

4.8.4 Output:

The database system will send back the request and the user will be directed to a new page showing further detail of the selected inventory such as the name of the inventory, the creator of the inventory, the date of the uploaded inventory and the file type of the inventory.

4.8.5 Main Scenario:

Users successfully open the details of the inventory.

4.8.5.1 Precondition:

The user is on the Inventory menu page and already finds the specific inventory that is going to be opened.

4.8.5.2 Postcondition:

The user will be directed to its inventory page and can see the details of the selected inventory on its page.

4.8.5.3 Steps:

- The user is currently at the Inventory menu page
- Find or search the inventory that is going to be opened.
- The user clicked either the picture of the inventory or the inventory name.

4.9 Highlight Inventory

4.9.1 Description:

The highlight inventory feature will allow users (Lab Assistant) to highlight selected software to be displayed on the Inventory menu page.

4.9.2 Trigger:

The Highlight inventory button on the Inventory detail page is clicked.

4.9.3 Input:

Cursor pointed and clicked the highlight inventory button on the inventory page.

4.9.4 Output:

The selected software will be displayed on the Inventory menu page on the Highlight section.

4.9.5 Main Scenario:

The user wants to highlight the selected inventory to be displayed on the Inventory menu page on the Highlight section.

4.9.5.1 Precondition

The user is currently on the Inventory detail page and there is a highlighted button on the page.

4.9.5.2 Postcondition

Highlight section on the Inventory menu page display the inventory that has been highlighted

4.9.5.3 Steps

- The user is currently on the Inventory detail page.
- The user clicked the Highlight button on the page.
- The system will display the selected inventory on the Highlight section on the Inventory menu page.

4.10 Download Inventory

4.10.1 Description:

The download inventory feature will allow the user to download the specific application that the user selected from the laboratory inventory.

4.10.2 Trigger:

The download/open button in the inventory detail page is clicked.

4.10.3 Input:

Cursor pointed and clicked the download/open button in the inventory detail page.

4.10.4 Output:

The user will receive a copy of the inventory and store it in the user's device.

4.10.5 Main Scenario:

The software successfully downloaded the inventory and the user is able to open/run the inventory.

4.10.5.1 Precondition:

The user is currently on the Inventory detail page and the file on the page is downloadable.

4.10.5.2 Postcondition:

The database system will send the required file, and the user is able to successfully download the file.

4.10.5.3 Steps:

- The user is currently at the Inventory detail page.
- The user clicked the download/open button.

4.11 Open Link Inventory

4.11.1 Description:

The open inventory feature will allow the user to open the specific software's link that the user selected from the laboratory inventory.

4.11.2 Trigger:

The download/open button in the inventory detail page is clicked.

4.11.3 Input:

Cursor pointed and clicked the download/open button in the inventory detail page.

4.11.4 Output:

The system will automatically open the software's link and direct it to the link.

4.11.5 Main Scenario:

The user successfully opens the link of the desired inventory.

4.11.5.1 Precondition:

The user is currently on the Inventory detail page and the file type of the inventory is web-based.

4.11.5.2 Postcondition:

The database system will send the inventory's link, and the user is able to successfully open the link.

4.11.5.3 Steps:

- The user is currently at the Inventory detail page.
- The user clicked the download/open button.

4.12 Input New Project

4.12.1 Description:

This feature will allow users to add new project files to the inventory.

4.12.2 Trigger:

By clicking the Input New Project input button on the Home page or Input button on the Inventory menu page.

4.12.3 Input:

The user fills in the input form. On the "Name" column the user need to input the the name of the project in the format of text, on the "Created By" column the user need to input the name of the project creator in the format of text, on the "Date" column the user need to input the date of inputting the project in the form of a date format DD/MM/YYYY, on "File Type" column the user must choose which type of file they would like to upload according to their project, the options are exe or web-based software. On the "Upload File" section, the user must input the project that is going to be added to the inventory from the user's file explorer application. In the picture section, the user must add the picture of the project in the file of .png or .jpg.

4.12.4 Output:

It will show a text that says "New project is successfully added to the Inventory" and all the data that is inputted in the Input Project form will be stored in the inventory. After that, the Input Project page will be refreshed and all the columns are empty again.

4.12.5 Main Scenario:

The user will input new inventory to the inventory. The user needs to fill in the form in the Input Project page in order to add a new project to the inventory. The new project is added to the inventory and it can be seen or accessed in the Inventory menu page.

4.12.5.1 Precondition

On the Input Project page, the form and all column fields are empty.

4.12.5.2 Postcondition

The new project is added to the inventory and shows a text that says “New project is successfully added to the Inventory”. The Input Project page will be refreshed and all the columns are empty again.

4.12.5.3 Steps

- In the Input Project page, fill in all the empty column fields.
- Upload the picture of the project.
- Upload the project file or add a link.
- Click the submit button.

4.12.6 Exceptional Scenario:

If the user does not fill one or more column fields, the system will send a short message “Please fill all the columns”.

4.12.6.1 Precondition

On the Input Project page, the user does not fill all the columns.

4.12.6.2 Postcondition

The system will send a short message “Please fill all the columns”.

4.12.6.3 Steps

- In the Input Project page, the user fills in the empty column but not all empty columns are filled.
- Upload the software photo.
- Upload the software file.
- Click the submit button.

4.13 Add Picture

4.13.1 Description:

The add photo feature will allow users to add a snapshot of the inventory they would like to submit to the laboratory inventory.

4.13.2 Trigger:

The '+' symbol in the middle top part of the Input Project page is clicked.

4.13.3 Input:

Cursor pointed and clicked the '+' symbol in the middle top part of the Input Project page. The user input the picture file from the user's file explorer.

4.13.4 Output:

The photo is uploaded, and shown in the Input Project page.

4.13.5 Main Scenario:

The photo is successfully uploaded, and shown in the Input Project page.

4.13.5.1 Precondition

The user is on the Input Project page and has the picture file on the user device. The picture file type is compatible with the software and the file is not corrupted.

4.13.5.2 Postcondition

The picture of the inventory is shown in the Input Project page.

4.13.5.3 Steps

- The user is currently on the Input Project page.
- The user clicked the '+' symbol.
- The user chose the picture they would like to upload from their file manager.

4.13.6 Exceptional Scenario:

The picture failed to upload, and it is not shown in the Input Project page.

4.13.6.1 Precondition

The picture file type is not compatible with the software, or the picture file has been corrupted.

4.13.6.2 Postcondition

The file is unable to be uploaded and the software will notify the user that the file type is either not supported or corrupted.

4.13.6.3 Steps

- The user is currently on the input project page.
- The user clicked the '+' symbol.
- The user chose the snapshot they would like to upload from their file manager.
- The software alerts the user that the file is either not supported or corrupted.

4.14 Add File

4.14.1 Description:

The add file feature will allow the creator of the project to attach their work, for everyone else to download and use.

4.14.2 Trigger:

The "Add File" button in the input project page is clicked.

4.14.3 Input:

Cursor pointed and clicked the "Add File" button in the input project page. The user chooses the project file from the file explorer in their computer.

4.14.4 Output:

The project file is uploaded, and the name of the file is shown in the input project page.

4.14.5 Main Scenario:

The file is successfully uploaded, and the name of the file is shown in the input project page.

4.14.5.1 Precondition

The user is on the Input Project page and has the project file on the user device. The project file type is compatible with the software and the file is not corrupted.

4.14.5.2 Postcondition

The name of the project file is shown in the Input Project page next to the upload file

4.14.5.3 Steps:

- The user is currently on the Input Project page.
- The user clicked the '+ Add File' button.

- The user chose the file they would like to upload from their file manager.

4.14.6 Exceptional Scenario:

If the user does not fill one or more column fields, the system will send a short message “Please fill all the columns”.

4.14.6.1 Precondition

On the Input Project page, the form and all column fields are empty.

4.14.6.2 Postcondition

The system will send a short message “Please fill all the columns”.

4.14.6.3 Steps:

- In the Input Project page, the user fills in the empty column but not all empty columns are filled.
- The user Upload the software file.
- Click the submit button.

4.15 Input Equipment

4.15.1 Description:

The input equipment feature will allow the user (lab assistant) to input equipment data to the inventory.

4.15.2 Trigger:

The “Input Equipment” button on the Home page is clicked.

4.15.3 Input:

The user needs to fill out a form consisting of six columns. The columns are “Name” where the user input the name of the content in the format of text, “Type” where the user choose the type of the inventory whether it is Equipment or Furniture in the form of text, “Brand” where the user input the brand of the content in the format of text, “Date of Entry” where the user input the date when is the content enter the lab in the form of a date format DD/MM/YYYY, “Quantity” where the user input the number of the content that are going to be added on the lab in the format of number and “Description” where the user give an explanation about the content in the format of text.

4.15.4 Output:

It will show a text that says “Equipment is successfully added to the Inventory” and all the data that is inputted in the Input Equipment form will be stored in the inventory. After that, the Input Equipment page will be refreshed and all the columns are empty again.

4.15.5 Main Scenario:

All of the equipment data is all correctly filled, and the equipment will be stored in the laboratory inventory.

4.15.5.1 Precondition

On the Input Equipment page, the form and all column fields are empty.

4.15.5.2 Postcondition

The new equipment is added to the inventory and shows a text that says “New equipment is successfully added to the Inventory”. The Input Equipment page will be refreshed and all the columns are empty again.

4.15.5.3 Steps:

- In the Input Equipment page, fill in all the empty column fields.
- Click the submit button.

4.15.6 Exceptional Scenario:

If the user does not fill one or more column fields, the system will send a short message “Please fill all the columns”.

4.15.6.1 Precondition

In the Input Equipment page, the user does not fill all the columns.

4.15.6.2 Postcondition

The system will send a short message “Please fill all the columns”.

4.15.6.3 Steps :

- In the Input Equipment page, the user fills in the empty column but not all empty columns are filled.
- Upload the software photo.
- Upload the software file.
- Click the submit button.

4.16 Input Borrow Request

4.16.1 Description:

The input borrow request allows lab members to borrow equipment from the laboratory inventory. They can select which inventory they would like to borrow, how many of the inventory they would like to borrow, and how long they would like to borrow the inventory. With this feature lab members are able to request for a borrow anytime without interrupting any lab assistant.

4.16.2 Trigger:

In the lab member Home page, the borrow request button is clicked.

4.16.3 Input:

The user needs to fill out a form consisting of six rows. The rows are “Name” in which the system will automatically inputted the name of the borrower based on the user account in the format of text, “Equipment Name” where the user need to select which equipment they would like to borrow in the format of text, “Quantity” where the user need to input how many of the equipment they would like to borrow in the format of number, “Start Date” where the user need to input the date when they would like to begin borrowing the equipment in the form of a date format DD/MM/YYYY, “End Date” where the user need to input the date when they planned to finished borrowing the equipment in the form of a date format DD/MM/YYYY, “Borrowing Reason” where the user can type some description of the reason they would like to borrow that equipment this sections need to be able to receive words, numbers, as well as special characters.

4.16.4 Output:

A text is shown saying “Borrow Request successfully submitted to the Lab Assistance” and all the data that is inputted in the Input Borrow request form will be sent to the lab assistance borrow request feature. After that, the Input Equipment page will be refreshed and all the columns are empty again.

4.16.5 Main Scenario:

All of the Input Borrow Request data is all correctly filled, and the form will be sent to the lab assistance borrow request feature.

4.16.5.1 Precondition:

On the input borrow request page, the form and all column fields are empty.

4.16.5.2 Postcondition:

The Input borrow request is sent to the lab assistance borrow request feature and shows a text that says “Borrow Request successfully submitted to the Lab Assistance”. The Input Borrow Request page will be refreshed and all the columns are empty again.

4.16.5.3 Steps:

- In the Input Borrow Request page, fill in all the empty column fields.
- Click the submit button.

4.16.6 Exceptional Scenario 1:

If the user does not fill one or more column fields, the system will send a short message “Please fill all the columns”.

4.16.6.1 Precondition:

In the Input Equipment page, the user does not fill all the columns.

4.16.6.2 Postcondition:

The system will send a short message “Please fill all the columns”.

4.16.6.3 Steps:

- In the Input Borrow Request page, the user fills in the empty column but not all empty columns are filled.
- Click the submit button.

4.17 Accept/Decline Borrow Request

4.17.1 Description:

This feature is used by the user (Lab Assistant and Lab Supervisor) to give a permission about the borrowing request.

4.17.2 Trigger:

If lab member users use an Input Borrow Request feature and submit it, on the Lab assistant borrow request page, the inputted request will be shown here and in the status column there will be two options for the Lab Assistant user to choose.

4.17.3 Input:

The user will choose the check mark if the request is accepted or choose the cross mark if the request declined.

4.17.4 Output:

Whatever the choice, the system will send a notification to the requester to tell the result of the request. If the request is accepted, the status column will change to “Being Borrowed” or if the request is declined, the status column will change to “Rejected”.

4.17.5 Main Scenario:

The Lab Assistant user decides about the permission of the request.

4.17.5.1 Precondition:

The user is on the Borrow Request page and there is a request that needs to be decided.

4.17.5.2 Postcondition:

The system will send a notification to the requester to tell the result of the request. If the request is accepted, the status column will change to “Being Borrowed” or if the request is declined, the status column will change to “Rejected”.

4.17.5.3 Steps:

- The user (Lab Assistant) is on the Borrow Request page.
- Choose one mark for the request.

4.18 See Borrow Request Status

4.18.1 Description:

The Lab member user can see the status of the borrowing request on the Borrow Request page.

4.18.2 Trigger:

By clicking the Borrow Request button on the Home page.

4.18.3 Input:

Cursor pointed and clicked the Borrow Request button in the Home page

4.18.4 Output:

The user will be directed to the Borrow Request page.

4.18.5 Main Scenario:

The Lab member user will be able to see the status of his/her request regarding the borrowing request.

4.18.5.1 Precondition:

The user is on the Home page of the software.

4.18.5.2 Postcondition:

The user will be directed to the Inventory page.

4.18.5.3 Steps:

- The user is currently at the Home page.
- Click the inventory button/logo on the Home

5. Non-Functional Requirements

5.1 Quality Attribute

5.1.1 Availability

The user can access the software via website.

5.1.2 Capacity

The system supports 150 simultaneous users during 8-12 AM; 50 simultaneous users at all other times.

5.1.3 Flexibility

The Software can be accessed over various Operating Systems such as Windows, Mac OS and Linux.

5.1.4 Security

Only registered lab users that can use the software. The system includes all available safeguards from viruses, worms, Trojan Horses, etc.

5.1.5 Useability

The software should be easy enough to learn quickly