SYSTEM REQUIREMENT SPECIFICATION

BROKEN FACILITY SYSTEM

FOR INFORMATICS DEPARTMENT

Prepared by:

5114100070 Prasetyo Nugrohadi

5114100158 Muhammad Ghazian

Informatics Department - Institut Teknologi Sepuluh Nopember Kampus ITS Keputih Sukolilo Surabaya

Te	Jurusan	Nomor Dokumen		Halaman
	Feknik Informatika ITS	SKPL-001		1/#52
		Revisio	-	DD MM YYYY
		n		

CHANGE LIST

Revision	Description
A	
В	
C	
D	
E	
F	
G	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 2 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikl ahoratorium Rekayasa Perangkat Lunak Jurusan Teknik		

DATE INDEX	-	A	В	С	D	E	F	G
Written by								
Checked by								
Verified by								

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 3 dari 43

Page Revision List

Page	Revision	Page	Revision

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 4 dari 43

Table of Contents

1	Prelin	<u>ninary</u>
	<u>1.1</u>	<u>Tujuan Penulisan Dokumen</u>
	<u>1.2</u>	Lingkup Masalah
	1.2 1.3	<u>Definisi dan Istilah</u>
	<u>1.4</u>	Aturan Penamaan dan Penomoran
	1.4 1.5	References
	<u>1.6</u>	<u>Ikhtisar Dokumen</u>
<u>2</u>	Desk	ripsi Umum Perangkat Lunak
	<u>2.1</u>	<u>Deskripsi Umum Sistem</u>
	<u>2.2</u>	Product Function
	2.2 2.3 2.4 2.5	Karakteristik Pengguna
	<u>2.4</u>	<u>Batasan</u>
		<u>Lingkungan Operasi</u>
<u>3</u>		ripsi Umum Kebutuhan
	<u>3.1</u>	Kebutuhan antarmuka eksternal
	<u>3.1.1</u>	<u>User Interface</u>
	3.1.2	
	3.1.3	
	3.1.4	
		Functional Description
	3.2.1	Use Case Diagram
	3.2.2	Function 1: Create Account
		2.2.1 Scenario: Create Account
		Activity Diagram: Create Account
	· ·	2.2.3 Sequence Diagram: Create Account
	3.2.3	2.2.4 Object Collaboration Diagram: Create Account Function 2: Get New Password
		2.3.1 Scenario: Get New Password
		2.3.2 Activity Diagram: Get New Password
		2.3.3 Sequence Diagram: Get New Password
		3.4 Object Collaboration Diagram: Get New Password
	3.2.4	
		2.4.1 Scenario: Change Password
	· · · · · · · · · · · · · · · · · · ·	2.4.2 Activity Diagram: Change Password
	· · · · · · · · · · · · · · · · · · ·	2.4.3 Sequence Diagram: Change Password
		2.4.4 Object Collaboration Diagram: Change Password
	3.2.5	
		Scenario: Show Reports Overview
		Activity Diagram: Show Reports Overview
		Sequence Diagram: Show Reports Overview
	3.2	Object Collaboration Diagram: Show Reports Overview
	3.2.6	
	3.2	Scenario: Remove Records
		Activity Diagram: Remove Records
	3.2	2.6.3 Sequence Diagram: Remove Records
	<u>3.2</u>	6.4 Object Collaboration Diagram: Remove Records

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 5 dari 43

3.2.7	Function 6: Mark Records
<u>3.2.7.1</u>	Scenario: Mark Records
3.2.7.2	Activity Diagram: Mark Records
<u>3.2.7.3</u>	Sequence Diagram: Mark Records
<u>3.2.7.4</u>	Object Collaboration Diagram: Mark Records
3.2.8	Function 7: Check Inputted Records
3.2.8.1	Scenario: Check Inputted Records
3.2.8.2	Activity Diagram: Check Inputted Records
<u>3.2.8.3</u>	Sequence Diagram: Check Inputted Records
<u>3.2.8.4</u>	Object Collaboration Diagram: Check Inputted Records
3.2.9	<u>Function 8: File in Report</u>
<u>3.2.9.1</u>	Scenario: File in Report
<u>3.2.9.2</u>	Activity Diagram: File in Report
<u>3.2.9.3</u>	Sequence Diagram: File in Report
<u>3.2.9.4</u>	Object Collaboration Diagram: File in Report
3.2.10	<u>Function 9: Remove Inputted Records</u>
<u>3.2.10.1</u>	Scenario: Remove Inputted Records
<u>3.2.10.2</u>	Activity Diagram: Remove Inputted Records
<u>3.2.10.3</u>	Sequence Diagram: Remove Inputted Records
3.2.10.4	Object Collaboration Diagram: Remove Inputted Records
<u>3.2.11</u>	<u>Function 10: Edit Inputted Records</u>
<u>3.2.11.1</u>	Scenario: Edit Inputted Records
<u>3.2.11.2</u>	Activity Diagram: Edit Inputted Records
<u>3.2.11.3</u>	Sequence Diagram: Edit Inputted Records
<u>3.2.11.4</u>	Object Collaboration Diagram: Edit Inputted Records
	ses Description
<u>3.3.1</u>	<u>Class Diagram</u>
<u>3.3.2</u>	<u>Deskripsi Domain Persoalan</u>
3.3.3	<u>Deskripsi Kelas Pengendali</u>
<u>3.3.4</u>	Deskripsi Kelas Entity (Persisten)
<u>3.3.5</u>	<u>Deskripsi Kelas Boundary</u>
	Flow Diagram
3.5 <u>Non</u>	Functional Requirement
	san Perancangan
	kasan Kebutuhan
3.7.1	Ringkasan Kebutuhan Functiononal
<u>3.7.2</u>	Ringkasan Kebutuhan Non Functiononal

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 6 dari 43

Table List

Table 1 Aturan Penamaan dan Penomoran

Table 2 Karakteristik Pengguna

Table 3 Deskripsi Kelas Domain Persoalan

Table 4 Deskripsi Kelas Pengendali

Table 5 Deskripsi Kelas Entity

Table 6 Deskripsi Kelas Boundary

Table 7 Deskripsi Kebutuhan Non Functiononal

Table 8 Ringkasan Kebutuhan Functiononal

Table 9 Ringkasan Kebutuhan Non Functiononal

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 7 dari 43

Figure List

Figure 1. Use Case Diagram	14
Figure 2. Activity Diagram "Create Account"	16
Figure 3. Sequence Diagram "Create Account"	17
Figure 4. Object Collaboration Diagram "Create Account"	17
Figure 5. Activity Diagram "Set New Password"	18
Figure 6. Sequence Diagram "Set New Password	19
Figure 7. Object Collaboration Diagram "Set New Password"	19
Figure 8. Activity Diagram "Change Password"	20
Figure 9. Sequence Diagram "Change Password"	21
Figure 10. Object Collaboration Diagram "Change Password"	21
Figure 11. Activity Diagram "Show Reports Overview"	22
Figure 12. Sequence Diagram "Show Reports Overview"	22
Figure 13. Object Collaboration Diagram "Show Reports Overview"	22
Figure 14. Activity Diagram "Remove Records"	24
Figure 15. Sequence Diagram "Remove Records"	25
Figure 16. Object Collaboration Diagram "Remove Records"	25
Figure 17. Activity Diagram "Mark Records"	27
Figure 18. Sequence Diagram "Mark Records"	28
Figure 19. Object Collaboration Diagram "Mark Records"	28
Figure 20. Activity Diagram "Check Inputted Record"	29
Figure 21. Sequence Diagram "Check Inputted Record"	29
Figure 22. Object Collaboration Diagram "Check Inputted Record"	29
Figure 23. Activity Diagram "File In Report"	31
Figure 24. Sequence Diagram "File In Report"	32
Figure 25. Object Collaboration Diagram "File In Report"	32
Figure 26. Activity Diagram "Remove Inputted Records"	33
Figure 27. Sequence Diagram "Remove Inputted Records"	33
Figure 28. Object Collaboration Diagram "Remove Inputted Records"	34
Figure 29. Activity Diagram "Edit Inputted Records"	35
Figure 30. Sequence Diagram "Edit Inputted Records"	36
Figure 31. Object Collaboration Diagram "Edit Inputted Records"	36
Figure 29. Class Diagram	36
Figure 30. Physical Data Model	38
Figure 31. Data Flow Diagram	40

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 8 dari 43

1 Preliminary

1.1 Document Aim

This document contains Software Requirement Specification for Broken Facility System. The creation of this document is meant for giving proper documentation about the software artifact that will be built. The system may be explained using general explanation denoted as figures, or in thorough detail.

This document will be used as starting point in developing the system and will be used as the evaluation material during developing the software and by the end of the development. By the existence of this SRS, there is high hope that the software development process would be more structured and focused, and also to prevent ambiguity for the software developer.

1.2 Scope of Problem

The software that will be built is Broken Facility System for Informatics Department ITS. It is a software in form of desktop system information. The system can be used to facilitate the report regarding any broken facility in Infomatics Department. This system is aimed to do several activities:

- 1) To facilitate the civitas academica of Informatics Department to resolve the problem about unsatisfactory condition of the facility.
- 2) As the media for the staff of Informatics Department to control the health of their facility. It is hoped that with this system, the overall condition of facilities in Informatics Department can be improved and maintained.

1.3 Glossary

The following list is the term used for the rest of this document:

o SRS : Software Requirements Specification, or

SKPL : Spesifikasi Kebutuhan Perangkat Lunak

The document containing the software specification.

o IEEE : Institute of Electrical and Electronics Engineering

International Standard for developing and designing product.

o ANSI: American National Standard Institute

American standardization institute.

o TBD : To Be Defined

o LAN : Local Area Network

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 9 dari 43	
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.			

1.4 Naming and Numbering Nomenclature

The writing of this SRS uses different naming and numbering rule for different section. The rule for naming and numbering that will be used is contained within Table 1 below.

Section/Subject	Naming/Numbering Rule
Functional Requirement	SKPL-FXX : Means the XX th functional requirement
Non Functional	SKPL-NFXX: Means the XX th non-functional requirement
Requirement	
Functional Requirement	SKPL-Fxxx where xxx is the last 3 numeric digit starting from
Summary	000
Non-functional	SKPL-NFxxx where xxx is the last 3 numeric digit starting
Requirement Summary	from 000

Table 1 Naming and Numbering Nomenclature

1.5 Reference

The documents that will be used as reference of making this SRS is as follows:

- 1) *Dokumen* Software Requirement Spesification (SRS) IEEE year 1999 by Karl E. Wiegers.
- 2) Panduan Penggunaan dan Pengisian Spesifikasi Perangkat Lunak (SKPL), Informatics Department, Institut Teknologi Sepuluh November.
- 3) Panduan Penggunaan dan Pengisian Spesifikasi Perangkat Lunak (SKPL), Informatics Department, Institut Teknologi Bandung.

1.6 Document Summary

In general, this document consists of 3 section:

- Section 1: Preliminary. This part is the introductory section of this SRS, containing the aim of the document, scope of the problem, also includes the definition and term that will be used. This part also explains about the general description about the SRS.
- Section 2: Software's Global Description. This part defines the perspective of the software along with the assumptions in consideration and any dependencies that will be used during the development of the system
- Section 3: Detailed Requirement Description. This part describes the specific needs that aroused by the system, including the external interface, functional requirement, performance requirement, development boundary, software attributes, and other requirement of Broken Facility System

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 10 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikl ahoratorium Pekayasa Perangkat Lunak Jurusan Teknik		

2 Software General Description

2.1 System General Description

The broken facility system is a system that monitors the condition of the facility in the Informatics Department of ITS. This system stores any report submitted by the privileged user. This system is mainly driven by two users, i.e. the civitas academica of Informatics Department of ITS, and the staff of Informatics Department of ITS. The civitas academica of Informatics can report whichever equipment in the campus that is not in good shape. The report then will be sent to the staff. Later on, the staff will take care of the report and check the problematic facility. In the end of the maintenance of the facility, the staff provides feedback to the report as solved, which the submitter will be able to see.

The developed software system has several components based on the user. The said components are as follows:

- 1) From the user's perspective (i.e. civitas academica of Informatics), the system facilitates them to report any damaged equipment or any other facility which not in good condition. This helps them to reach to the management such that the matter is to be resolved quickly. The benefit of this system is that the user does not have to go to the staff office directly only to inform the facility's condition. The user also may see whether the matter has been resolved or not. Since the system needs authentication to limit the report only comes from the civitas academica of Informatics Department, the user needs to have an account, and the system supports the user to request for account creation.
 - 2) From the staff's perspective, the system helps them to monitor the overall condition of the campus's facilities. By facilitating the user to file in report about unsatisfactory condition of the facility, the workload to manage the facility decreases. Also, the staff may create other account, may that be for another staff or for the user. In case there are any incoming account creation request from the user, the staff can validate which request are to be processed further, and which are discarded

2.2 Product's Function

The broken facility system has several main functions, that is:

- 1. (SKPL-F1) Both user and staff can log into the system.
- 2. (SKPL-F2) Department staff possess overview about conditions of the department's equipment.
- 3. (SKPL-F3) User can submit a report about broken equipment.

2.3 User Characteristics

The characteristics of the user related to the broken facility system is explained in the following table :

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 11 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS.

No	User Category	Task	Privilege	Preliminary Skill
1.	Administration Staff	Manage the information system	May process the report or delete it. Also processes the account creation	1.Able to operate computer 2.Able to operate web and database
2.	Civitas Academica	Access the information system	May file in report and check whether the report is resolved or not	1.Able to operate computer 2.Able to use internet

2.4 Boundary

The development of the information system has several limitation as follows:

- 1. The Broken Facility System uses website, hence the development will use HTML, PHP, CSS, and related framework that supports the development.
- 2. Interface is simplistic.
- 3. The supporting software that will be used is XAMPP, Sublime, Notepad++, and Visual Studio Code.

2.5 Operating Environment

The application will operate in environment with several specification:

Platform sistem operasi : Microsoft Windows Versi sistem operasi : Windows 7/8/10

DBMS : MySQL

Kerangka kerja : Laravel or CodeIgniter

3 Requirement General Description

3.1 External interface requirement

3.1.1 User interface

Broken Facility System uses graphical user interface (GUI). User can enter the input using keyboard and mouse, and operate it using Windows operation system.

3.1.2 Hardware interface

System runs on a computer server. Any computer that will be connected to the system must connected with LAN.

3.1.3 Software Interface

Broken Facility System will be built using HTML, CSS, PHP and MySQL.

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 12 dari 43

3.1.4 Communication Interface

Broken Facility System is a system that connected to internet connection.

3.2 Functional Description

3.2.1 Use Case Diagram

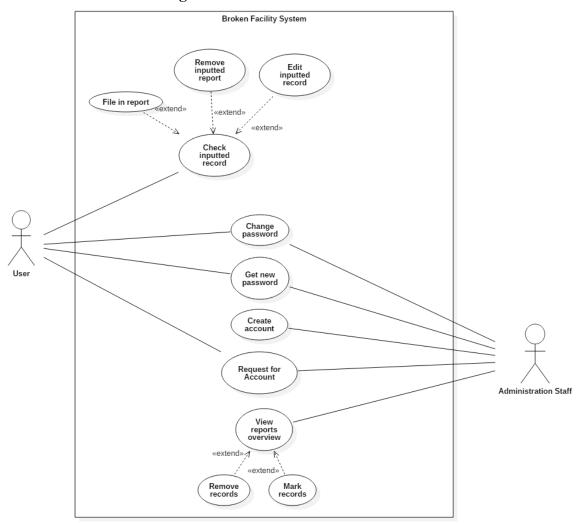


Figure 1. Use Case Diagram

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 13 dari 43
		orium Rekayasa Perangkat Lunak Jurusan Teknik

Perangkat Lunak Jurusan Teknik Informatika-ITS.

3.2.2 Function 1: Create Account

3.2.2.1 Scenario: Create Account

Use Case ID	UC 1		
Use Case Name	Create Account		
Description	User create his account		
Relationship	-		
Related actor	User, Administrator		
Pre-condition	Has the application Network connection		
Post-condition	User account registered		
	Normal Flow		
	Actor	System	
1. User press creat	te account		
3. User fill the data	a requirement	System open create account page System validate the inputted data	
5. Admin check the	e data	,	
6. User's account of	created		
		Alternate Flow	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 14 dari 43

3.2.2.2 Activity Diagram: Create Account

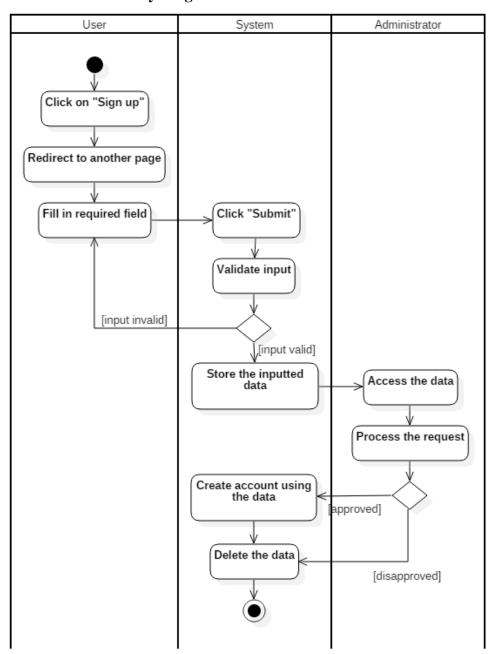


Figure 2. Activity Diagram "Create Account"

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 15 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		I torium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa Iformatika-ITS.

3.2.2.3 Sequence Diagram: Create Account

Figure 3. Sequence Diagram "Create Account"

3.2.2.4 Object Collaboration Diagram: Create Account

Figure 4. Object Collaboration Diagram "Create Account"

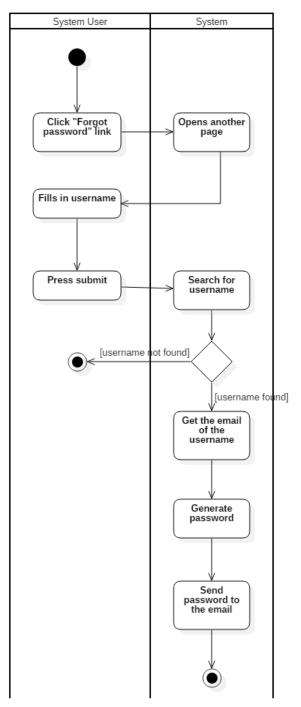
3.2.3 Function 2: Get New Password

3.2.3.1 Scenario: Get New Password

Use Case Id	UC 2		
Use Case Name	Get New Password		
Description	Retrieves new password generated by the system and send it to the email which registered for the corresponding account		
Relationship	-		
Related Actor	User, Administrator		
Pre-condition	Actor is on the main page while	not logged in	
Post-condition	The password is sent to the actor's email		
	N	ormal Flow	
Actor	System		
 Actor clicks 'Forgot password' link System open the forgot password Actor fills in the username of his account Actor clicks 'Submit' button 		2. System open the forgot password form	
5. System check the inputted username6. System generate new password			
Alternate Flow			
Alternate Flow	Alternate Flow		
Exception	Exception 4.a The username is not found. The flow ceases		

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 16 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Tekr Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		n ini tanpa diketahui oleh Laboratorium Rekayasa

Activity Diagram: Get New Password



Jurusan Teknik Informatika ITS	SKPL-001	Halaman 17 dari 43

3.2.3.2 Sequence Diagram: Get New Password

Figure 6. Sequence Diagram "Get New Password"

3.2.3.3 Object Collaboration Diagram: Get New Password

Figure 7. Object Collaboration Diagram "Get New Password"

3.2.4 Function 3: Change Password

3.2.4.1 Scenario: Change Password

Use Case Id	UC 3		
Use Case Name	Change Password		
Description	Change password for an account		
Relationship	-		
Related Actor	Administrator, user		
Pre-condition	Actor has to be logged in		
Post-condition	The password of the user or adminis	strator is changed	
	Norm	al Flow	
Actor		System	
Actor opens 'Account' tab on navigation bar Actor clicks 'Change Password' button Actor fills his current password, new password, and another password field to confirm the new password 6. Actor presses 'Submit' button		2. System open account page 4. System open change password page 7. System validate the input 8. System change the user's password	
	Alternate flow		
Actor		System	
4.a. Actor filled in wrong current password.		4.a.1. Actor redirected to previous page with error message,	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 18 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		I orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS.

4.b. Actor filled in invalid new password such as too short etc. with error message	
	4.b.1. Actor redirected to previous page, continue with normal flow (4)
4.c. Actor filled in wrong new password confirmation.	
	4.c.1. Actor redirected to previous page, continue with normal flow (4)
Exception	-

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 19 dari 43

3.2.4.2 Activity Diagram: Change Password

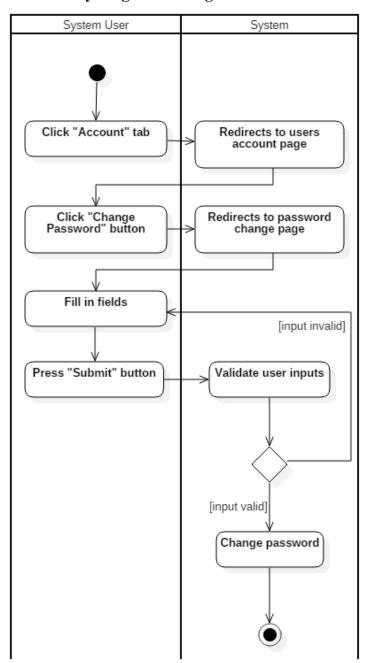


Figure 8. Activity Diagram "Change Password"

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 20 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		I torium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa nformatika-ITS.

3.2.4.3 Sequence Diagram: Change Password

Figure 9. Sequence Diagram "Change Password"

3.2.4.4 Object Collaboration Diagram: Change Password

Figure 10. Object Collaboration Diagram "Change Password"

3.2.5 Function 4: Show Reports Overview

3.2.5.1 Scenario: Show Reports Overview

Use Case Id	UC 4			
Use Case Name	Show reports overview			
Description	This page shows the user inputted solved or unsolved	This page shows the user inputted records about broken facility, along each of its state: solved or unsolved		
Relationship	-			
Related Actor	Administrator			
Pre-condition	Administrator has to be logged in			
Post-condition	Administrator in reports overview	page		
	Norma	l Flow		
Actor		System		
Administrator presses the 'Overview' tab on the navigation bar		System shows up a page containing necessary information about user reports		
Alternate Flow				
Actor		System		
1.a. Administrator just logged in into the system		1.a.1. System immediately redirects administrator to 'Overview' section continue to Normal Flow (2)		
Exception		-		

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 21 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Tekn Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		n ini tanpa diketahui oleh Laboratorium Rekayasa

3.2.5.2 Activity Diagram: Show Reports Overview

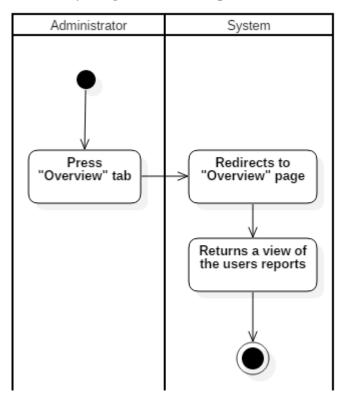


Figure 11. Activity Diagram "Show Reports Overview"

3.2.5.3 Sequence Diagram: Show Reports Overview

Figure 12. Sequence Diagram "Show Reports Overview"

3.2.5.4 Object Collaboration Diagram: Show Reports Overview

Figure 13. Object Collaboration Diagram "Show Reports Overview"

3.2.6 Function 5: Remove Records

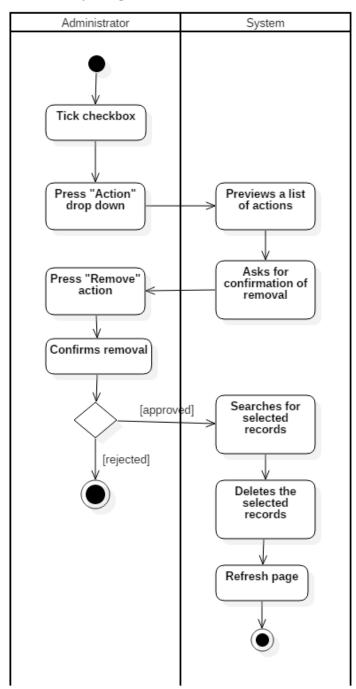
3.2.6.1 Scenario: Remove Records

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 22 dari 43

Use Case Id	UC 5		
Use Case Name	Remove records		
Description	Remove user inputted records about broken facility. The removal may be done for many records at once		
Relationship	Extends "Show reports overview	"	
Related Actor	Administrator		
Pre-condition	Administrator has to bePage 'Overview' is oper		
Post-condition	The marked (i.e. ticked) report is	s no longer exist and will not show in 'Overview' page	
	Norm	nal Flow	
Actor		System	
 Administrator ticks checkbox that is presented inline with the records which will be removed Administrator presses 'Action' drop down located below the list of records Administrator chooses 'Remove' action Administrator confirms the removal 		3. System shows drop down of possible action 5. The system prompts administrator to confirm removal 7. System remove the records, page refreshed ate Flow	
A . 1	Alterna		
1.a.1. A located above the l	ator filters the record beforehand dministrator presses 'Filter' button ist of records dministrator supplies the ch will be used as the filter dministrator presses 'Filter' button	1.a.2. System redirect to interface with filtering components 1.a.5. System retrieves data that qualifies the specified filter, interface shows list of recoreds, then	
Exception		continue to normal flow (1) 6.a. Administrator cancels the removal. The flow ceases	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 23 dari 43

3.2.6.2 Activity Diagram: Remove Records



Jurusan Teknik Informatika ITS	SKPL-001	Halaman 24 dari 43

3.2.6.3 Sequence Diagram: Remove Records

Figure 15. Sequence Diagram "Remove Records"

3.2.6.4 Object Collaboration Diagram: Remove Records

Figure 16. Object Collaboration Diagram "Remove Records"

3.2.7 Function 6: Mark Records

3.2.7.1 Scenario: Mark Records

Use Case Id	UC 6	
Use Case Name	Mark records	
Osc Case Ivallie		
Description	Mark records as solved or unso	olved. The marking can be done for many records at once
Relationship	Extends "Show reports overvie	w"
Related Actor	Administrator	
Pre-condition	Administrator has to be	pe logged in
	 Page 'Overview' is open 	ened
Post-condition	The marked (i.e. ticked) report has its state changed	
	Nor	mal Flow
Actor		System
inline with the record 2. Administrator pres above the list of reco	oses one of the 'Mark' action	3. System shows drop down of possible action5. The system prompts administrator to confirm marking6. System mark the records, page refreshed
	Altor	nate Flow
	Aitei	
Actor		System
1.a. Administrator filters the record beforehand 1.a.1. Administrator presses 'Filter'		

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 25 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS.

button located above the list of records	
1.a.2. Administrator is redirected to	
interface with filtering components	
1.a.3. Administrator supplies the	
information of which will be used as the filter	
1.a.4. Administrator presses 'Filter'	
button	1.a.5. System retrieves data that qualifies the specified filter, interface refreshed and show list of records then continue to normal flow (1)
4.a. Administrator chooses 'Mark as solved'	
	4.a.1. System will change the marked data as 'Solved', then continue to normal flow (5)
4.b. Administrator chooses 'Mark as unsolved'	
	4.b.1. System will change the marked data as
	'Unsolved', then continue to normal flow (5)
Exception	6.a. The administrator cancels the marking. The flow
	ceases

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 26 dari 43

3.2.7.2 Activity Diagram: Mark Records

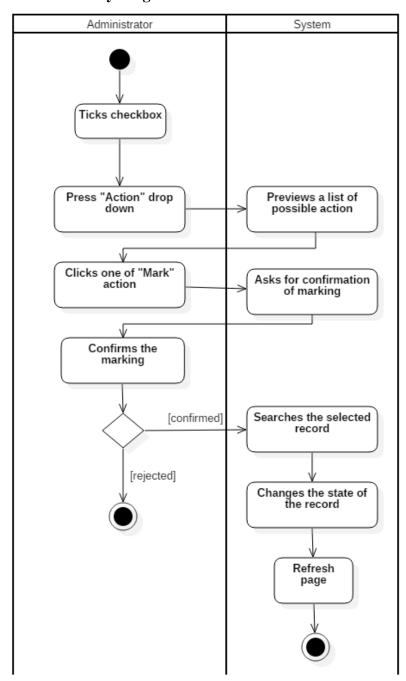


Figure 17. Activity Diagram "Mark Records"

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 27 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS.

3.2.7.3 Sequence Diagram: Mark Records

Figure 18. Sequence Diagram "Mark Records"

3.2.7.4 Object Collaboration Diagram: Mark Records

Figure 19. Object Collaboration Diagram "Mark Records"

3.2.8 Function 7: Check Inputted Record

3.2.8.1 Scenario: Check Inputted Record

Use Case Id	UC 7		
Use Case Name	Check Inputted Record		
Description	Shows the overview of the reports t	hat has been filed in by the corresponding user	
Relationship	-		
Related Actor	• User		
Pre-condition	User is logged in		
Post-condition	User is in 'Overview' page		
	Norm	al Flow	
Actor	System		
1. User clicks on '	1. User clicks on 'Overview' tab on navigation bar		
		2. System shows a page with lists of inputted report is shown	
	Alterna	ate Flow	
Actor		System	
1.a. User just	logged in		
		1.a.1. System immediately redirect to 'Overview' page, then continue to normal flow (2)	
Exception -		-	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 28 dari 43
Informatika-ITS dan bersifat rahasia. Dilarang		 orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS

3.2.8.2 Activity Diagram: Check Inputted Record

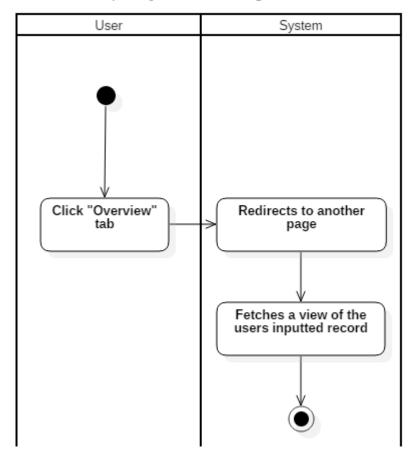


Figure 20. Activity Diagram "Check Inputted Record"

3.2.8.3 Sequence Diagram: Check Inputted Record

Figure 21. Sequence Diagram "Check Inputted Record"

3.2.8.4 Object Collaboration Diagram: Check Inputted Record

Figure 22. Object Collaboration Diagram "Check Inputted Record"

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 29 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		

3.2.9 Function 8: File In Report

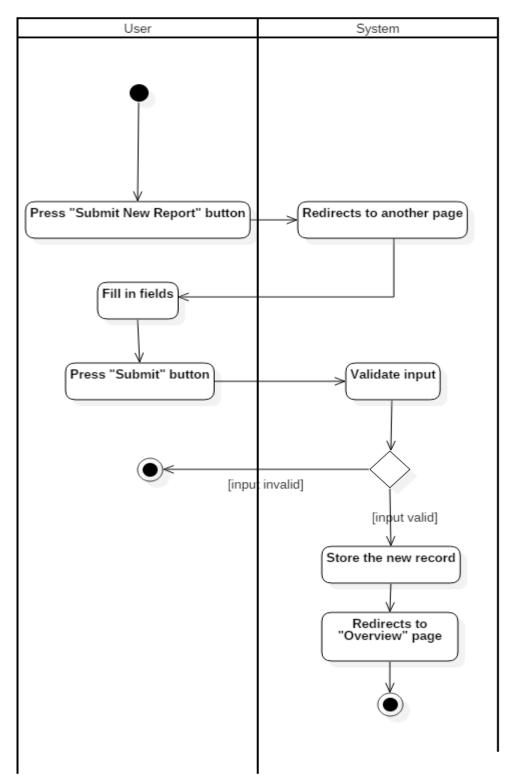
3.2.9.1 Scenario: File In Report

	<u> </u>		
Use Case Id	UC 8		
Use Case Name	File in Report		
Description	Checks all the file that are report	ed broken	
Relationship	Extends "Check Inputted Records	s"	
Related Actor	User		
Pre-condition	User is logged in		
Post-condition	A new report is submitted		
	No	ormal Flow	
Actor	Actor System		
 User presses 'Submit new report' button User supplies necessary information to the given form User presses 'Submit' 		2. System redirected to another page	
		5. System redirect to 'Overview' page	
	Alte	ernate Flow	
Alternate Flow		4.a. Information supplied is incorrect. 4.a.1. User is redirected to previous page with error message 4.a.2. The flow then goes to Basic Flow (3) 4.b. Information supplied is not complete i.e. some necessary field is not filled. 4.b.1. User is redirected to previous page with error message 4.b.2. The flow then goes to Basic Flow (3)	
Exception		-	

3.2.9.2 Activity Diagram: File In Report

Figure 23. Activity Diagram "File In Report"

SKPL-001	Halaman 30 dari 43
	orium Rekayasa Perangkat Lunak Jurusan Teknik n ini tanpa diketahui oleh Laboratorium Rekayasa formatika-ITS.
	likinyaadalahmilikLaborat g me-reproduksi dokumer



Jurusan Teknik Informatika ITS	SKPL-001	Halaman 31 dari 43

3.2.9.3 Sequence Diagram: File In Report

Figure 24. Sequence Diagram "File In Report"

3.2.9.4 Object Collaboration Diagram: File In Report

Figure 25. Object Collaboration Diagram "File In Report"

3.2.10 Function 9: Remove Inputted Record

3.2.10.1 Scenario: Remove Inputted Record

Use Case Id	UC 9			
Use Case Name	Remove Inputted Record			
Description	Remove the user inputted report. The	he removal may be done for many records at once		
Relationship	Extends "Check Inputted Record"			
Related Actor	User			
Pre-condition	User is in 'Overview' page			
Post-condition	The chosen data is removed			
	Normal Flow			
Actor	Actor System			
records which wi	ve' button located below the list of	3. Prompts user to confirm removal		
		5. Refreshes page 'Overview'		
	Altern	ate flow		
	1.a. User filters the	e record beforehand		
Actor Syst		System		
list of records	es 'Filter' button located above the es the information of which will be	1.a.2. Redirect to interface with filtering components		

Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		
J		

1.a.4. User presses 'Filter' button	
	1.a.5. System retrieves data that qualifies the specified
	filter
	1.a.6. System refreshes the interface where user is in
	1.a.7. System shows the interface consisting a list of
	records
	1.a.8. The flow then goes to Basic Flow (1)
2.a. No record is marked	
Actor System	
	2.a.1. System redirects to previous page with error
	message
	2.a.2. The flow then goes to Basic Flow (1)
Exception	-

	Jurusan Teknik Informatika ITS	SKPL-001	Halaman 33 dari 43
۱			

3.2.10.2 Activity Diagram: Remove Inputted Record

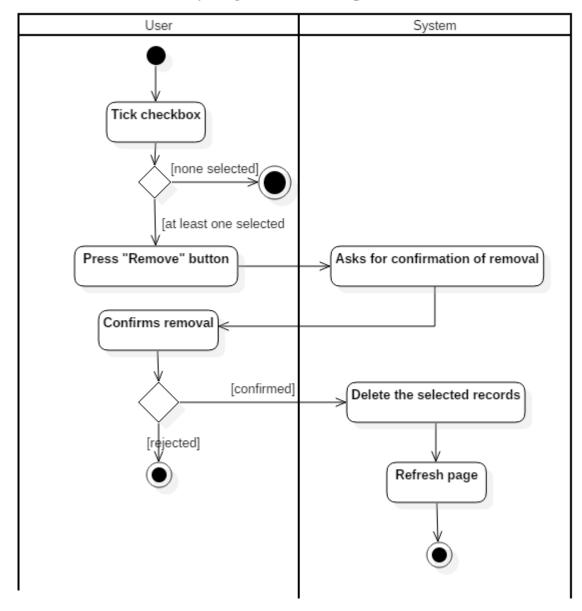


Figure 26. Activity Diagram "Remove Inputted Record"

3.2.10.3 Sequence Diagram: Remove Inputted Record

Figure 27. Sequence Diagram "Remove Inputted Record"

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 34 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		

3.2.10.4 Object Collaboration Diagram: Remove Inputted Record

Figure 28. Object Collaboration Diagram "Remove Inputted Record"

3.2.11 Function 10: Edit Inputted Record

3.2.11.1 Scenario: Edit Inputted Record

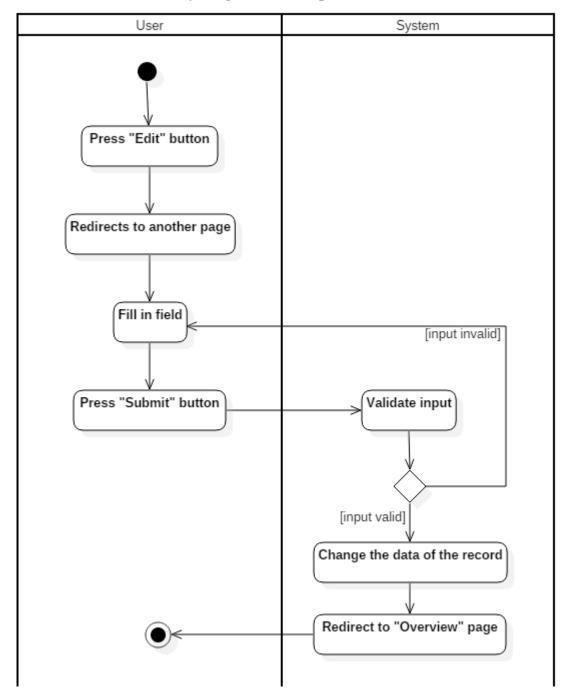
Use Case Id	UC 10			
Use Case Name	Edit Inputted Record			
Description	Edits the information supplied of the	Edits the information supplied of the previously inputted report by the corresponding user		
Relationship	Extends "Check Inputted Record"			
Related Actor	User			
Pre-condition	User is in 'Overview' page			
Post-condition	The corresponding record has its dat	a changed		
	Norm	al Flow		
Actor		System		
 User clicks 'Edit' button that is placed inline with the record that will be edited User supplies necessary revisionon to the form User presses 'Submit' button 		System redirects to another page that contains the form with the data of the edited record		
		5. System redirects to 'Overview' page		
Alterna		ate flow		
1.a. User filters the record beforehand				
Actor		System		
list of records 1.a.3. User supplie	s 'Filter' button located above the	1.a.2. Redirect to interface with filtering components		
used as the filter 1.a.4. User presses	'Filter' button	1.a.5. System retrieves data that qualifies the specified		
		filter		

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 35 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		

	1.a.6. System refreshes the interface where user is in
	1.a.7. System shows the interface consisting a list of
	records
	1.a.8. The flow then goes to Basic Flow (1)
4.a. The revision is not complete	e i.e. some necessary field is not filled
Actor System	
	4.a.1. System redirects to previous page with error message
	4.a.2. The flow then goes back to Basic Flow (3)
4.b The rev	vision is incorrect
Actor	System
	4.b.1. System redirects to previous page with error message
Exception	4.b.2. The flow then goes back to Basic Flow (3)

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 36 dari 43

3.2.11.2 Activity Diagram: Edit Inputted Record



Jurusan Teknik Informatika ITS	SKPL-001	Halaman 37 dari 43

3.2.11.3 Sequence Diagram: Edit Inputted Record

Figure 30. Sequence Diagram "Edit Inputted Record"

3.2.11.4 Object Collaboration Diagram: Edit Inputted Record

Figure 31. Object Collaboration Diagram "Edit Inputted Record"

3.3 Classes Description

3.3.1 Class Diagram

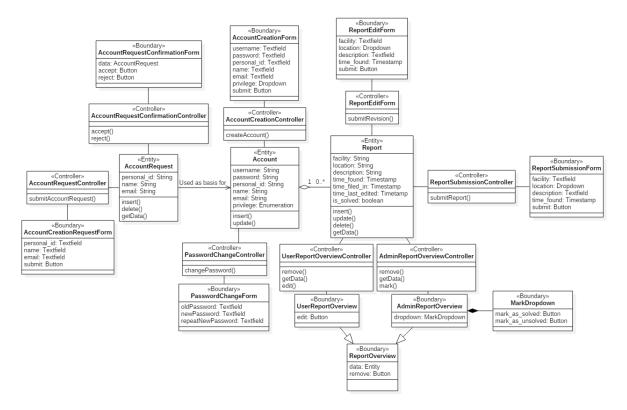


Figure 29. Class Diagram

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 38 dari 43
Template dokumen ini daninformasi yang dimilikinyaadalahmilikLaboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS dan bersifat rahasia. Dilarang me-reproduksi dokumen ini tanpa diketahui oleh Laboratorium Rekayasa Perangkat Lunak Jurusan Teknik Informatika-ITS.		

3.3.2 Problem Domain Description

Table 3 Problem Domain Class Description

No	Nama	Metode	Atribut	Tugas
	_	_	_	
	_	_	_	
	_	_	_	

3.3.3 Class Controller Description

Table 4 Class Controller Description

No	Name	Method	Attribute	Responsibility
1.	AccountRequest Controller	submitAccountRequest()		Inserts a request regarding accoung creation request
2.	AccountRequest ConfirmationCo ntroller	accept() reject()		Accept or reject any account request
3.	AccountCreatio nController	createAccount()		Creates a new record of account with given data
4.	ReportEditForm	submitRevisionon()		Updates the state of one record
5.	ReportSubmissi onController	submitReport()		Inserts the record of report
6.	Control Report Submission	submitReport()		Inserts the record of report
7.	UserReportOver viewController	remove() getData() edit()		Does general bookkeeping of existing reports with limited privilege, also as navigator
8.	AdminReportO verviewControll er	remove() getData() mark()		Does general bookkeeping of existing reports with full privilege

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 39 dari 43

0	PasswordChang	changePassword()	Manages password
9.	eController		changing

3.3.4 Entity Class Description

Figure 30. Physical Data Model

Table 5 Entity Class Description

N	Name	Attribute	Method	Responsibility
0.				
1.	Report	facility: String	insert()	Manages reports
		location: String	update()	i.e. insertion,
		description: String	delete()	removal, etc.
		time_found: Timestamp	getData()	
		time_filed_in: Timestamp		
		time_last_edited:		
		Timestamp		
		is_solved: boolean		
2.	Account	username: String	insert()	Serves as
		password: String	update()	authentification
		personal_id: String		and authorization
		name: String		
		email: String		
		privilege: Enumeration		
3.	AccountReque	personal_id: String	insert()	A request such that
	st	name: String	delete()	an account is made
		email: String	getData()	using information
				given

3.3.5 Boundary Class Description

Table 6 Boundary Class Description

N o.	Name	Attribute	Meth od	Responsibility
1.	AccountRequestConfirm ationForm	data: AccountRequest accept: Button reject: Button		Interface to confirm account request
2.	AccountCreationForm	username: Textfield password: Textfield		Interface to create account

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 40 dari 43

		personal_id: Textfield name: Textfield email: Textfield privilege: Dropdown submit: Button	
3.	ReportEditForm	facility: Textfield location: Dropdown description: Textfield time_found: Timestamp submit: Button	Interface to edit existing report
4.	ReportSubmissionForm	facility: Textfield location: Dropdown description: Textfield time_found: Timestamp submit: Button	Interface to make a new report
5.	AccountCreationRequest Form	personal_id: Textfield name: Textfield email: Textfield submit: Button	Interface to make a request for account creation
6.	PasswordChangeForm	oldPassword: Textfield newPassword: Textfield repeatNewPassword: Textfield	Interface to change password
7.	ReportOverview	data: Entity remove: Button	General class of ReportOverview
8.	UserReportOverview	edit: Button	Interface to see the overview of user's existing report
9.	AdminReportOverview	dropdown: MarkDropdown	Interface to see the overview of existing report
10	MarkDropdown	mark_as_solved: Button mark_as_unsolved: Button	Component for marking the report

3.4 Data Flow Diagram

Figure 31. Data Flow Diagram

3.5 Non Functional Requirement

Table 7 Non Functional Requirement Description

SKPL-Id	Parameter	Requirement
SKPL-N01	Ergonomy	The presentation is responsive and easy to
		understand. System also provides visual
		aspect to differentiate between solved

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 41 dari 43

		reports and unsolved reports	
SKPL-N02	Response time	Time needed to retrieve the data is	
		noticeably small	
SKPL-N03	Security	Authorization is done based on the privilege	
		the user's account has. Passwords are	
		managed very securely	
SKPL-N04	Language	Uses Indonesian language	
SKPL-N05	Efficiency	Data filtration is to be done efficiently	

3.6 Construction Limitation

None.

3.7 Requirements Summary

3.7.1 Functional Requirement Summary

Table 8 Functional Requierement Summary

SKPL-Id	Description
SKPL-	User can input the information about the broken facility
F000	
SKPL-	User can remove the inputted record regarding the broken facility
F001	
SKPL-	User can edit the record regarding the broken facility
F002	
SKPL-	User can see whether or not the facility has been taken care of
F003	
SKPL-	System gives a thorough overview about the report coming in such as what
F004	thing is broken, where the object can be found, how severe the damage etc.
SKPL-	Staff can filter the records using the time when the report filed in
F005	
SKPL-	Staff can remove the record regarding the broken facility
F006	
SKPL-	Staff can mark a record as solved or unsolved
F007	
SKPL-	System supports creating account for both user and staff
F008	
SKPL-	System supports changing password for both user and staff
F009	
SKPL-	System able to generate new password for user and staff

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 42 dari 43

F010	
L(1) 1 (1)	
1.010	
_ 0 _ 0	

3.7.2 Non Functional Requirement Summary

Table 9 Non Functional Requirement Summary

SKPL-Id	Description	
SKPL-NF001	Uses username and password	
SKPL-NF002	Guarantees that every account has distinct username	

Jurusan Teknik Informatika ITS	SKPL-001	Halaman 43 dari 43