Software Requirement Specification Document

TEACHER STATUS SYSTEM

for:

Department of Informatics

Institut Teknologi Sepuluh Nopember

Surabaya

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1 Introduction

1.1 Purpose

This is a Software Requirement Specification Document for Teacher Status System. This document was created to give explanation about the software that is going to be built, both in general manner and in detail.

This document is going to be used as a reference for the development process and as a way to evaluate the development process. With this document , software developer will not see any ambiguity when it comes to developing teacher status system.

1.2 Scope

The Software that is being built is a teacher status system in the informatics department, Teacher Status System is an information system to check whether a lecturer is available in campus or not. The system can do functions such as:

1. Collecting Lecturer's information (e.g. Contact information, address)
2. Showing the availability status of a lecturer.

With using this software, a student or another lecturer may check whether a lecturer is available in campus or not, without having to contact the teacher or checking the lecturer's office manually

1.3 Definition, Acronyms, Abbreviations

List below shows the definitions for Acronyms and abbreviations:

- SRS : *Software Requirements Specification*
  Document that's written based on the analysis of the software requirements

1.4 Rules of Naming and Numbering

This SRS document uses Rules for naming and numbering shown on the table below

Table 1. Rules of Naming and Numbering

Part	Rules
Functional Requirements	SRS-FXX : Shows the XXth functional requirement
Nonfunctional Requirements	SRS-NFXX : Shows the XXth non functional requirement

Functional Requirements Summary	SRS-Fxxx where xxx is a 3 digit number that starts from 000
Non Functional Requirements Summary	SRS-NFxxx where xxx is a 3 digit number that starts from 000

1.5 Reference

The documents that's being used as a reference is shown below:

1. Panduan Penggunaan dan Pengisian Spesifikasi Perangkat Lunak (SKPL), Jurusan Teknik Informatika, Institut Teknologi Sepuluh November. (SKPL Template)

1.6 Overview

This Document includes 3 Chapter:

- Chapter 1 Introdcution, includes, purpose, scope of the problems and the definition of the acronyms and abbreviations also includes document overview
- Chapter 2 includes the general description of the software, which includes , system's general description, user characteristics limitation
- Chapter 3 includes the diagrams that visualize how the system work which includes , usecase diagram, activity diagram , class diagram

2 General Description of the Software

2.1 System's General Description

Teacher Status System is an information system to check whether a lecturer is available in campus or not and to show Lecturer's Contact Information. There are 3 types of user in this system, The admin of the Information system, The lecturers and the visitors. The admin has the job to register a lecturer's account whenever there's a new lecturer in Informatics department, the admin may also delete the lecturer's account when the said lecturer is no longer in Informatics department. The Lecturer has the rights to insert, delete or edit their availability status, they may also change their account details such as contact information, password and so on. The visitor can only see the profile and availability of lecturers.

The software has 3 main objectives based on the user, as explained below:

From the Admin, the system handles the registration of new lecturers and the account deletion of lecturer's that's not in Informatics anymore.

From the Lecturer's, the system can handle the insertion, update and deletion of availability status, the system can also handle the update of lecturer's account information

From the visitor, the system shows lecturer's data such as the availability status and the contact information. The system has access rights for its users that is used for the security of the system.

2.2 Product Functions

Teacher Status System has 8 main functions shown below:

1. (SRS-F1) Register a new lecturer account
2. (SRS-F2) Delete a lecturer account
3. (SRS-F3) Update lecturer account information.
4. (SRS-F4) Insert lecturer's availability status
5. (SRS-F5) Change lecturer's availability status
6. (SRS-F6) Delete lecturers' availability status
7. (SRS-F7) View lecturer's profile and availability
8. (SRS-F8) Search a lecturer

2.3 User's Characteristics

The characteristics of each users is shown on the table below:

Table 2. User's Characteristics

No	User's Category	Job	Access Rights	Skill Needed
1.	Admin	Lecturer's account registration and deletion	May add or delete lecturer's account	1. Able to operate a computer 2. Able to access the internet 3. Able to operates a website and database
2.	Lecturer	-Changing profile and availability status when needed -Accessing the information system	-Can update their own profile and availability status -Can see other lecturers availability status	1. Able to operate a computer 2. Able to acess the internet
3	Visitor	Accessing information system	Can see the lecturers information and availability status	1. Able to operate a computer 2. Able to use the internet

2.4 Limitation

Teacher availability status has limitations as shown below:

1. Teacher Status System is built using HTML,and Laravel framework.
2. The interface is a simple web interface.
3. Softwares that are being used: MySQL, Notepad++ and Sublime text 3

2.5 Operating Environment

Teacher Status System Operates in:

OS platform : Microsoft Windows
OS Version : Windows Server 2003/XP SP2/Vista/7/8/10
DBMS : MySql
Framework : Laravel PHP Framework

3 General Descriptions of the Requirements

3.1 External Interface Requirements

3.1.1 User Interface

Teacher Status System uses web front-end framework such as bootstrap.

3.1.2 Hardware Interface

Teacher Status System runs on a server computer.

3.1.3 Software Interface

Teacher Status System is written in HTML, Laravel Framework, MySql

3.1.4 Communication Interface

Teacher Status System is connected through internet.

3.2 Functional Description

3.2.1 Use Case Diagram

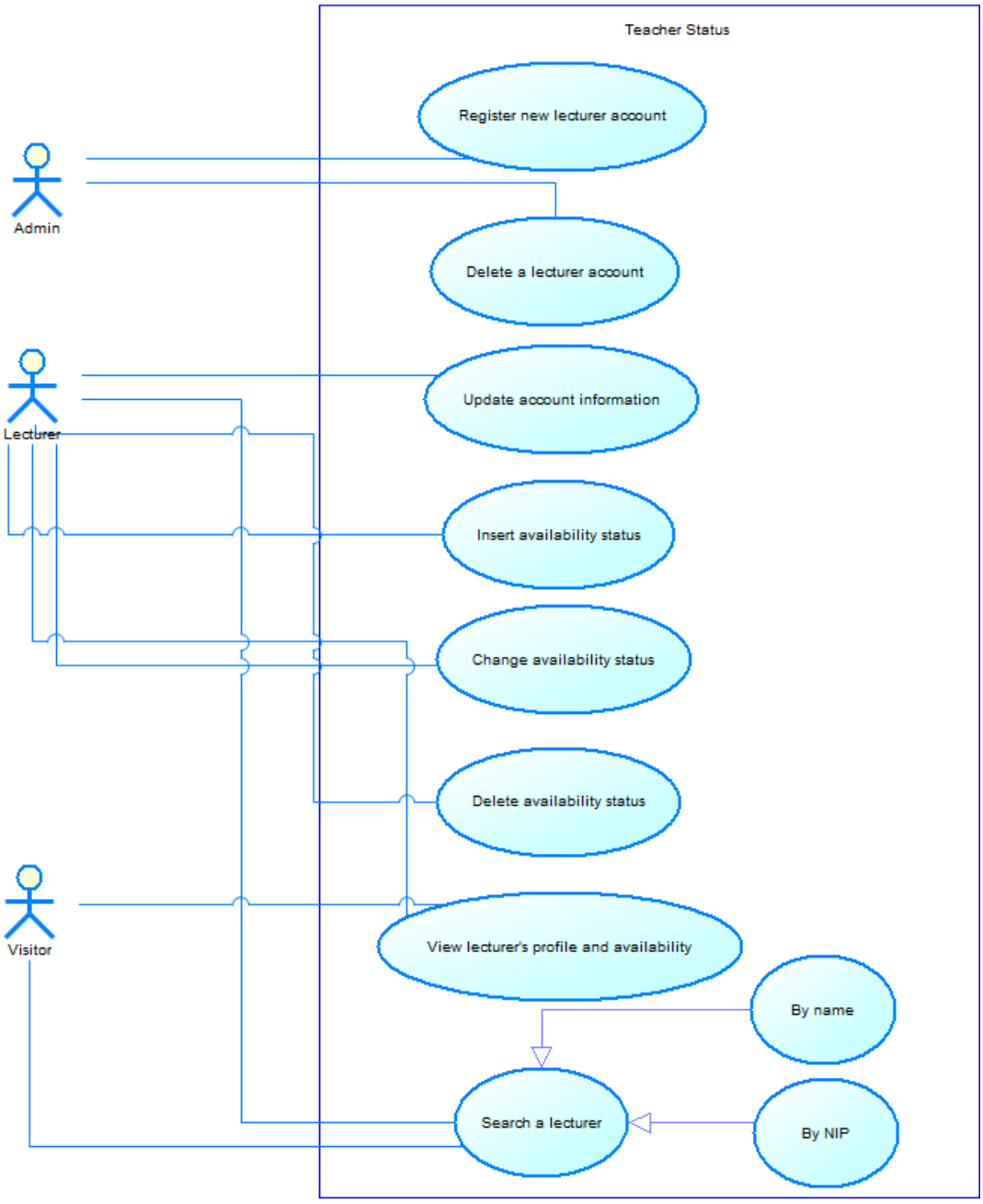


Diagram 1. Use Case Diagram

3.2.2 Function 1: Register New Lecturer Account

3.2.2.1 Scenario: Register New Lecturer Account

Use case Name	Register new lecturer account.
Actor	Admin.
Description	Register an account for a new lecturer in TC.
Pre-condition	A new lecturer in TC have sent their data to the admin, and the admin have logged into the account with admin privileges.
Main flow	
Actor	System
1. The admin opens the admin page. 3. Admin choose register function. 5. The admin will Input the new lecturer's data.	2. System display the selection of function. 4. System show the input form. 6. A password will be generated from the new lecturer's id number. 7. Save to database.
Alternate flow	-
Post condition	New account is registered.

3.2.2.2 Activity Diagram: Register New Lecturer Account

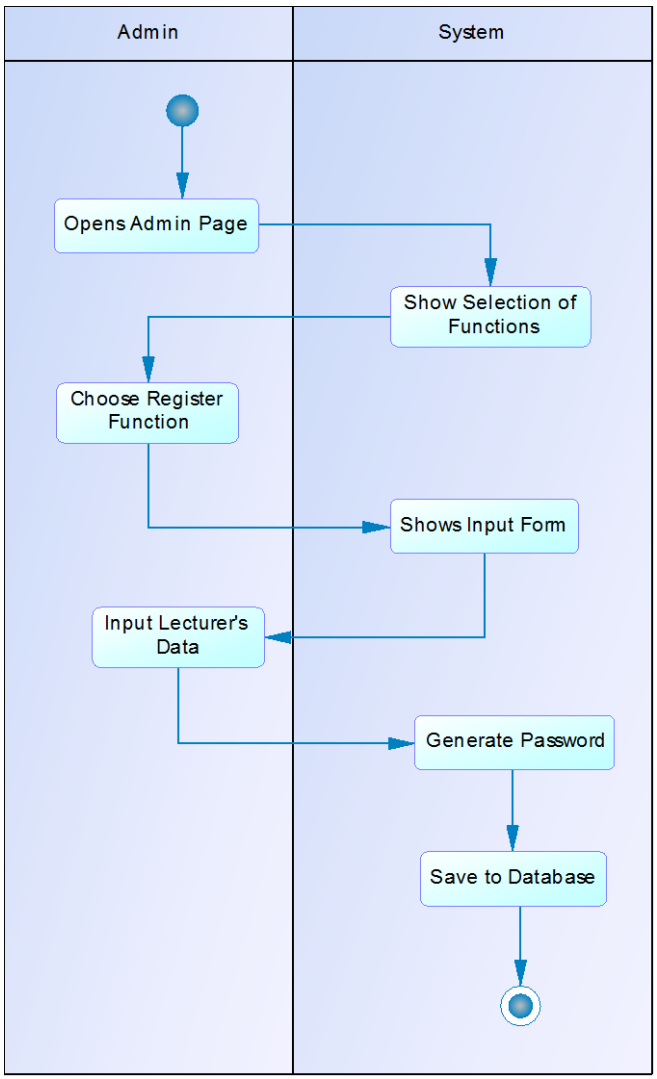


Diagram 2. Activity Diagram “Registering Lecturer’s Account”

3.2.2.3 Sequence Diagram: Register New Lecturer Account

3.2.2.4 Collaboration Diagram: Register New Lecturer Account

3.2.3 Function 2: Delete A Lecturer Account

3.2.3.1 Scenario: Delete A Lecturer Account

Use Case Name	Delete a lecturer's account.
Actor	Admin.
Description	Delete an account for a lecturer that's already resigned from TC.
Pre-condition	A lecturer have resigned from TC, admin have logged in.
Main flow	
Admin	System
1. Admin opens the admin page. 3. Admin choose delete function. 5. Admin may search the lecturer's name based on id or name. 7. The system will show confirmation message for deleting the account. A1 Admin choose "no"	2. System display the selection of function. 4. System show the list of lecturers. 6. The system will show confirmation message for deleting the account. 8. Saved to the database.
Alternate flow	
Admin	System
A1 1. Cancel deleting an account	
Post condition	The account is deleted.

3.2.3.2 Activity Diagram: Delete A Lecturer Account

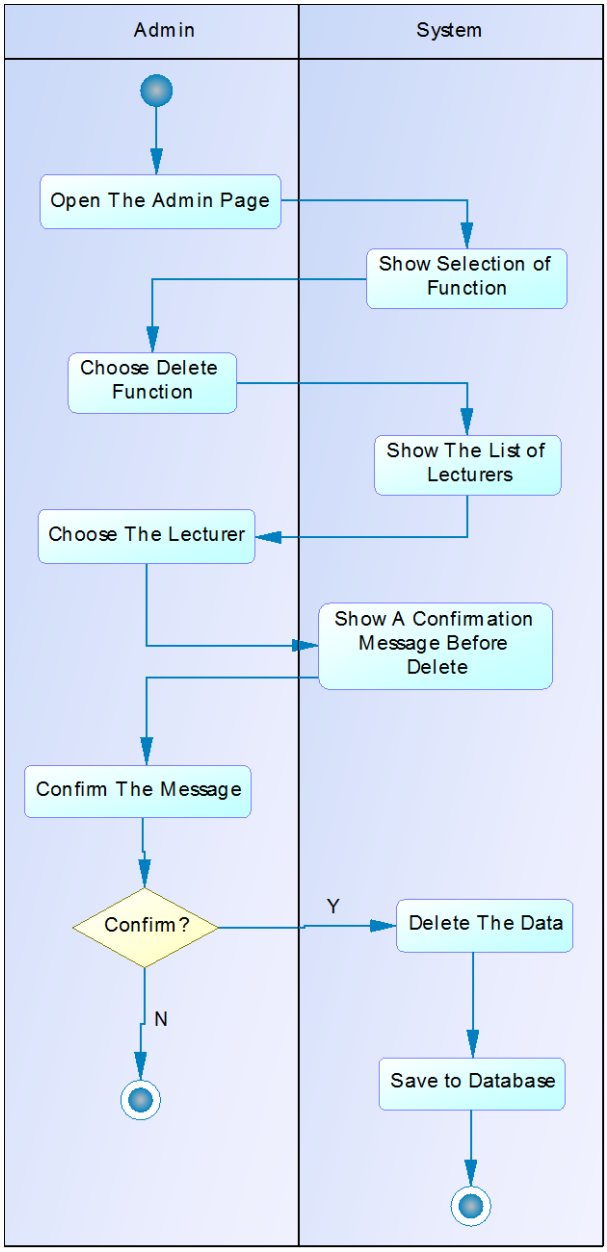


Diagram 3. Activity Diagram “Deleting Lecturer’s Account”

3.2.3.3 Sequence Diagram: Delete A Lecturer Account

3.2.3.4 Collaboration Diagram: Delete A Lecture Account

3.2.4 Function 3: Updating Account Information

3.2.4.1 Scenario: Updating Account Information

Use Case Name	Update account information.
Actor	Lecturer.
Description	Update account info for lecturer that’s already registered in the system.
Pre-condition	Lecturer have logged-in.
Main flow	1. The lecturer clicks the button. 2. The lecturer fills out the form that needs to be updated/changed and click save. 3. Before the lecturer’s input is updated into the system, the system will ask to enter the password for the account.
Lecturer	System
1. The lecturer opens his own profile page. 3. Lecturer choose to change account info. 5. The lecturer update the form.	2. The system displays current info and a button to change account info. 6. The system show update form. 7. Ask for password. A1 wrong password 8. Saved to database.
Alternate flow	
Lecturer	System
1. The lecturer update the form.	2. Ask for password. A1 wrong password 3. Saved to database.

Post condition	The lecturer's account info is updated.

3.2.4.2 Activity Diagram: Updating Account Information

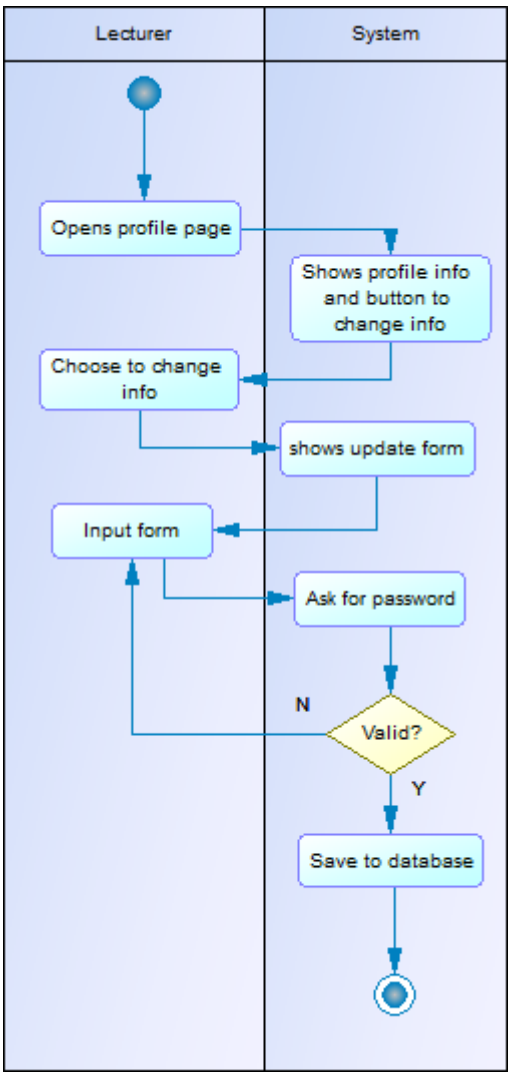


Diagram 4. Activity Diagram "Updating Account Information"

3.2.4.3 Sequence Diagram: Updating Account Information

3.2.4.4 Collaboration Diagram: Updating Account Information

3.2.5 Function 4: Insert Availability Status

3.2.5.1 Scenario: Insert Availability Status

Use Case Name	Insert Availability Status
Actor	Lecturer.
Description	Lecturer can insert a new availability status
Pre-condition	Lecturers are logged in
Main Flow	
Lecturer	System
1. Opens Profile 3. Chooses Availability Tab 5. Chooses Input availability 7. Inputs Data	2. Shows Lecturer's Profile page 4. Shows Availability Tab 6. Shows Input Form 8. Validate A1 Invalid 9. Save to Database
Alternate Flow	
Lecturer	System
A1 1. Inputs Data	A1 2. Validate A1 Invalid A1 3. Save to Database
Post Condition	A new availability is added to database

3.2.5.2 Activity Diagram: Insert Availability Status

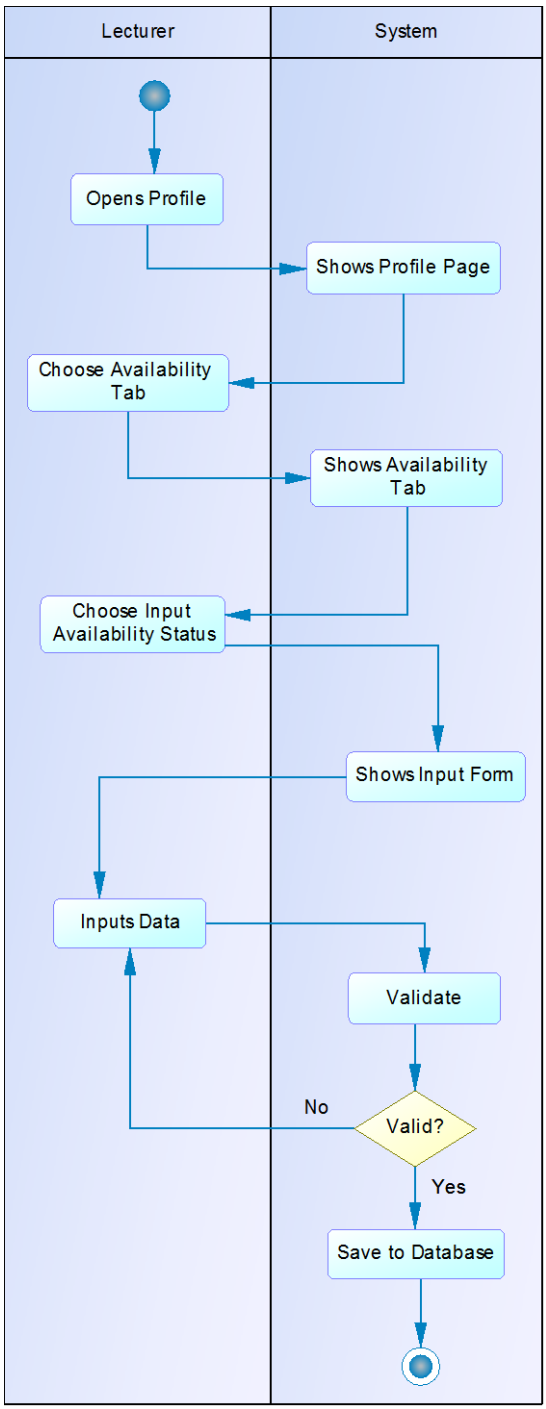


Diagram 5. Activity Diagram "Insert Availability Status"

3.2.5.3 Sequence Diagram: Insert Availability Status

3.2.5.4 Collaboration Diagram: Insert Availability Status

3.2.6 Function 5: Edit Availability Status

3.2.6.1 Scenario: Edit Availability Status

Use Case Name	Edit Availability Status
Actor	Lecturer
Description	Lecturer can Edit an existing availability status
Pre-condition	Lecturers are logged in
Main Flow	
Lecturer	System
1. Opens Profile 3. Chooses Availability Tab 5. Chooses Edit availability 7. Inputs Data	2. Shows Lecturer's Profile page 4. Shows Availability Tab 6. Shows Edit Form 8. Validate A1 Invalid 9. Save to Database
Alternate Flow	
Lecturer	System
A1 1. Inputs Data	A1 2. Validate A1 Invalid A1 3. Save to Database
Post Condition	An Existing Availability status is edited

3.2.6.2 Activity Diagram: Edit Availability Status

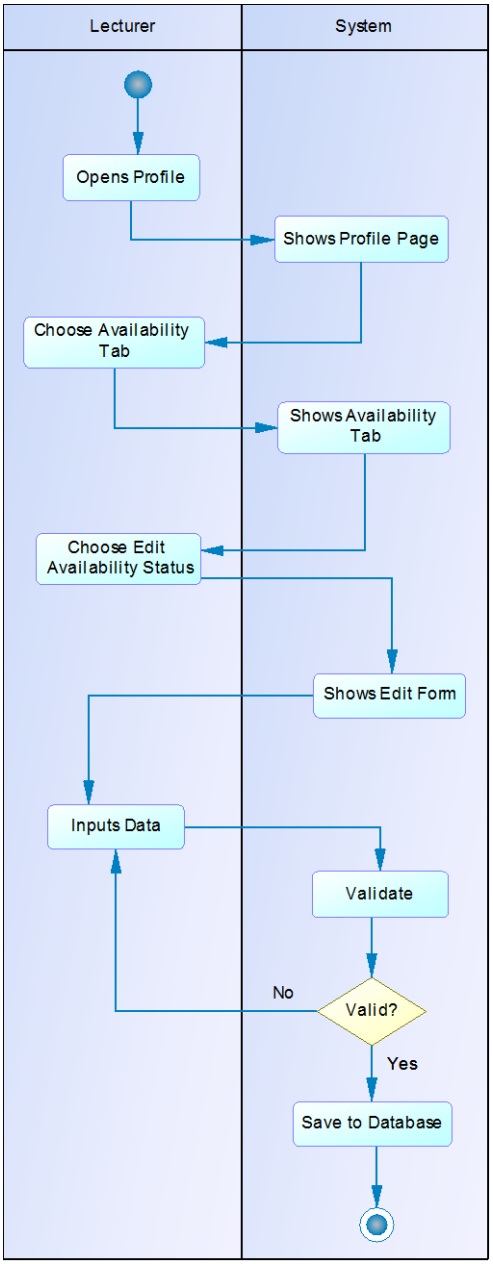


Diagram 6. Activity Diagram "Edit Availability Status"

3.2.6.3 Sequence Diagram: Edit Availability Status

3.2.6.4 Collaboration Diagram: Edit Availability Status

3.2.7 Functon 6: Delete Availability Status

3.2.7.1 Scenario: Delete Availability Status

Use Case Name	Delete Availability Status
Actor	Lecturer
Description	Lecturer can delete an existing availability status
Pre-condition	Lecturers are logged in
Main Flow	
Lecturer	System
1. Opens Profile. 3. Chooses Availability Tab. 5. Chooses Delete availability.	2. Shows Lecturer's Profile page. 4. Shows Availability Tab. 6. Save to Database.
Alternate Flow	-
Post Condition	An existing availability status is deleted

3.2.7.2 Activity Diagram: Delete Availability Status

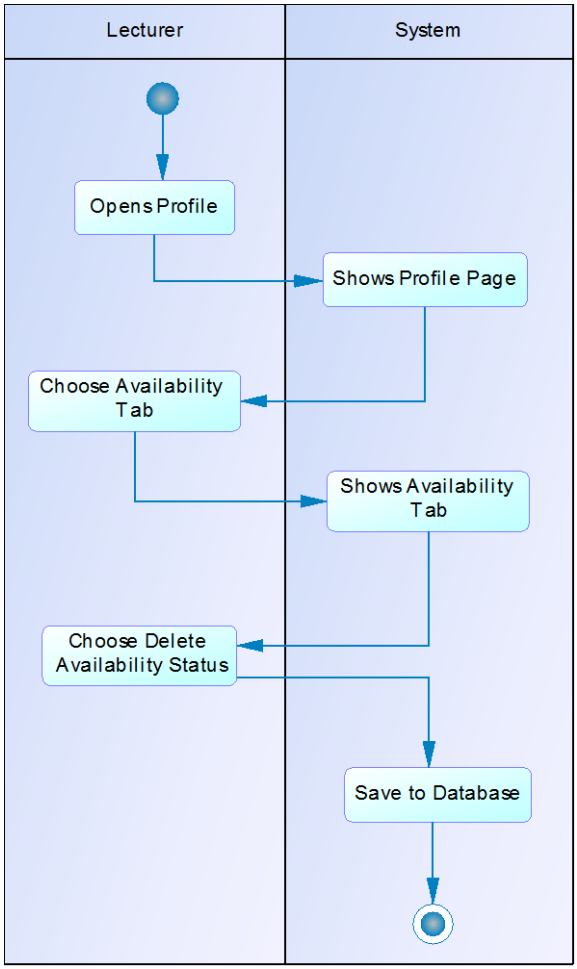


Diagram 7. Activity Diagram "Delete Availability Status"

3.2.7.3 Sequence Diagram: Delete Availability Status

3.2.7.4 Collaboration Diagram: Delete Availability Status

3.2.8 Function 7: View Lecturer's Profile and Availability

3.2.8.1 Scenario: View Lecturer's Profile and Availability

Use Case Name	View lecturer's profile & availability

Actor	Visitor & lecturer.
Description	Visitor & lecturer can view lecturer profile & availability status.
Pre-condition	Visitor and lecturer visit a lecturer's profile.
Main Flow	
Lecturer	System
1. Opens the list of lecturers page. 3. Chooses the lecturer.	2. Shows list of lecturers. 4. Shows lecturer profile and availability status.
Alternate Flow	-
Post Condition	Visitor and lecturer can view lecture's availability status.

3.2.8.2 Activity Diagram: View Lecturer's Profile and Availability

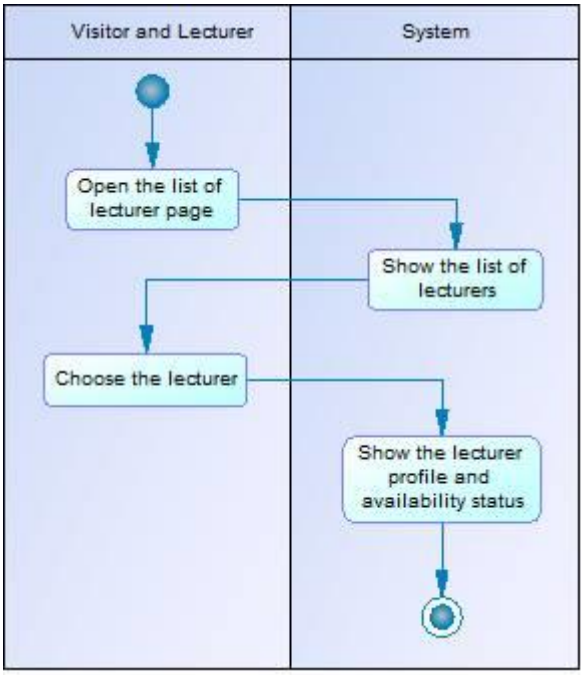


Diagram 8. Activity Diagram "View Lecturer's Profile and Availability"

3.2.8.3 Sequence Diagram: View Lecturer's Profile and Availability

3.2.8.4 Collaboration Diagram: View Lecturer's Profile and Availability

3.2.9 Function 8: Search A Lecturer

3.2.9.1 Scenario: Search A Lecturer

Use Case Name	Search a lecturer
Actor	Visitor & lecturer.
Description	Visitor & lecturer can search lecturer's profile.
Pre-condition	Visitor and lecturer visit teacher status website.
Main Flow	
Lecturer	System
1. Opens the list of lecturers page. 3. Chooses between by id or by name and input.	2. Shows List of lecturers and a search button. 4. Shows the data.
Alternate Flow	-
Post Condition	Visitor & lecturer can view lecturer's profile.

3.2.9.2 Activity Diagram: Search A Lecturer

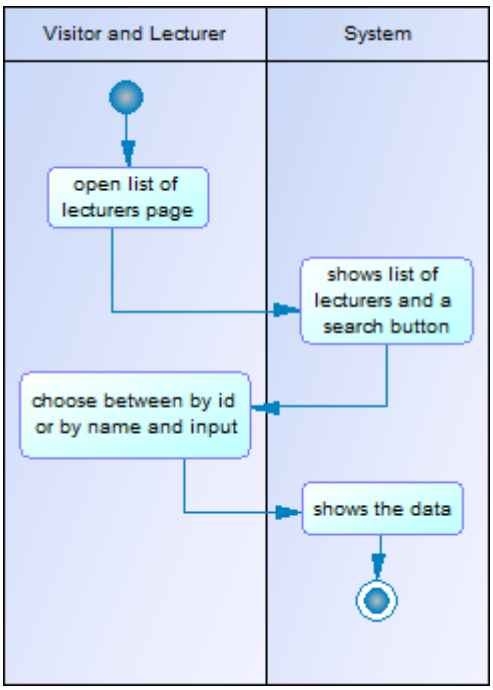


Diagram 9. Activity Diagram "Search a Lecturer"

3.2.9.3 Sequence Diagram: Search A Lecturer

3.2.9.4 Collaboration Diagram: Search A Lecturer

3.3 Classes Description

3.3.1 Class Diagram

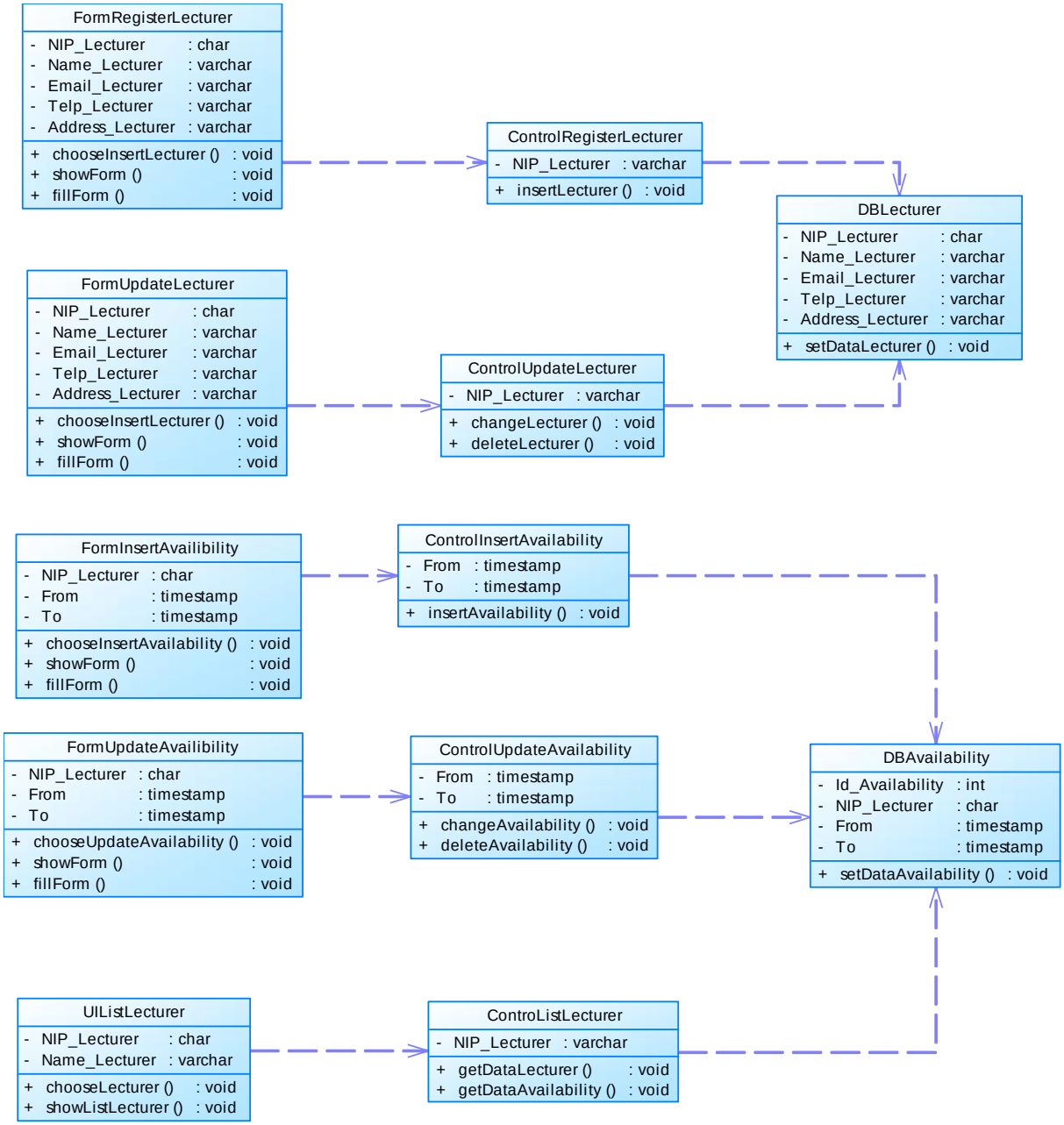


Diagram 10. Class Diagram

3.3.2 Problem Domain Description

Table 3 Problem Domain Description

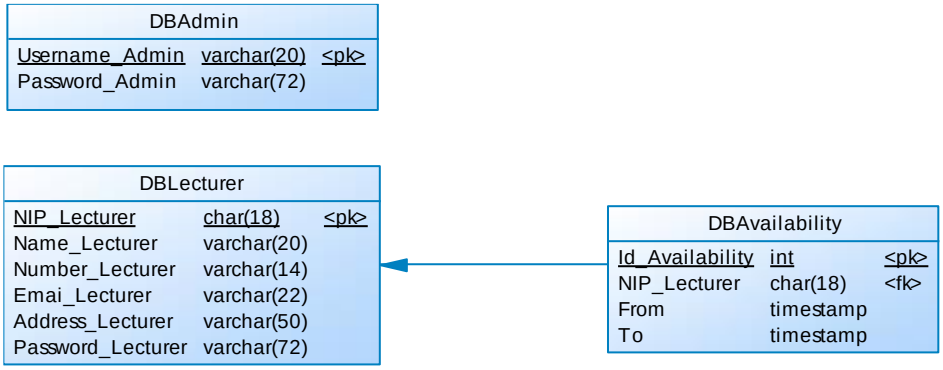
No.	Nama	Metode	Atribut	Tugas

3.3.3 Controller Class Description

Table 4 Controller Class Description

Num.	Name	Method	Attribute	Task
1.	Insert data control to DBLecturer.	insertLecturer()		Insert data to DBLecturer.
2.	Change data control in DBLecturer.	changeLecturer()		Change the data in DBLecturer.
3.	Remove data control in DBLecturer.	deleteLecturer()		Remove the data in DBLecturer.
4.	Insert data control to DBAvailability.	insertAvailability()		Insert data to DBAvailability.
5.	Change data control in DBAvailability.	changeAvailability()		Change the data in DBAvailability.
6.	Remove data control in DBAvailability.	deleteAvailability()		Remove the data in DBAvailability.
7.	Get lecturer data control in DBAvailability	getDataLecturer()		Get lecturer data in DBAvailability.
8.	Get availability data control in DBAvailability	getDataAvailability()		Get availability data in DBAvailability.

3.3.4 Entity Class Description *(Persistent)*



Gambar 30. Physical Data Model

Table 5 Entity Class Description

No.	Nama	Atribut	Metode	Tugas
1.	DBPetugas	ID_Petugas : char Nama_Petugas : varchar Alamat_Petugas : varchar Status_Petugas: varchar Password : varchar	konfirmasiPemesanan() daftarPemesanan() dataHapus() dataKonfirmasi()	Untuk mengatur pemesanan yang telah terjadi
2.	DBFasor	Id_Fasor : char Nama_Penyewa : varchar Email_Penyewa : varchar Telp_Penyewa : varchar Waktu_Pesan : time Tanggal_Pesan : date Pesan_Penyewa : varchar Konfirmasi : smallint	setDataFasor()	Untuk menambah/mengurangi/mengubah data pada DBFasor
3.	DBLaporan	Jumlah_Pemesanan : int	setDataLaporan()	Untuk menambah/mengur

		Bulan_Laporan : varchar Tahun_Laporan : int Total_Harga : int Total_Pendapatan : int		angi/mengubah data pada DBLaporan
4.	DBLapangan	Id_Lapangan : int Nama_Lapangan : int Alamat_Lapangan : int Harga_Lapangan : int Jumlah_Lapangan : int	setDataLapangan()	Untuk menambah/mengurangi/mengubah data pada DBLapangan

3.3.5 Class Boudary Description

Table 6 Class Boundary Description

No.	Nama	Atribut	Metode	Tugas
1.	Melihat Jadwal		showListLecturer ()	Display the list of lecturer.
2.	Form		showForm()	Display the form interface.

3.4 Data Flow Diagram

Diagram 11. Data Flow Diagram

3.5 Non Functional Requirement

Table 7 Non Functional Requirement

SRS-Id	Parameter	Requirement
SRS-N01	Availability	This app must operate within 24 hours, especially at the class time.
SRS-N02	Ergonomy	*Teacher status system* has good UI and UX Design.
SRS-N03	Portability	Teacher status system can be implement for more than 50 device.
SRS-N04	Security	This app has specific access for each actor. This app also uses encrypted user password.
SRS-N05	Language	This app uses Bahasa Indonesia

3.6 Limitation of Design

a. System can only be access from web browser.
b. System can only be access from device with internet access.

3.7 Summary of Requirement

3.7.1 Summary of Functional Reqirement

Table 8 Summary of Functional Requirement

SRS-Id	Information
SRS-F000	Register New Lecturer Account
SRS-F001	Delete A Lecturer Account
SRS-F002	Update Account Information
SRS-F003	Insert Availability Status
SRS-F004	Change Availability Status
SRS-F005	Delete Availability Status
SRS-F006	View Lecturer's Profile and Availability
SRS-F007	Search A Lecturer

3.7.2 Summary of Non Functional Reqirement

Table 9 Summary of Non Functional Requirement

SRS-Id	Information
SRS-NF001	System can prevent admin from insert lecturer data with same NIP.
SRS-NF002	System can be accessed from every device that have a web browser.
SRS-NF003	System can prevent login access from unauthorized user.