SRS-0002

SOFTWARE REQUIREMENT SPECIFICATION

Human Resource Management for Practicum Laboratory

for:
Informatics Lab

Prepared By:

Muhammad Aufa Anasin	(1301180497)
Adrian Putra Perdana	(1301170538)
Akmal Ariq Santoso	(1301174738)
Said Muhammad Firdaus	(1301153619)
Lalu M. Riza Rizky	(1301184521)

Bachelor of Informatics – Faculty of Informatics (School of Computing)
Telkom University
Jalan Telekomunikasi Terusan Buah Batu, Bandung
Indonesia

List of Changes

Revision	Description
A	Changes in software perspective and functions, user profile and characteristics, functional requirement, use case diagram, use case scenario, software interface, software quality attributes, database requirement, and analysis model attachment.
B	Changes in use case scenario and analysis model attachment.
C	
D	
E	

INDEX	-	A	B	C	D	E	F	G
DATE	March 20, 2020	April 26, 2020	May 11, 2020					
Written by	Lalu M. Riza R.	Lalu M. Riza R.	Lalu M. Riza R.					
Checked by								
Approved by								

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

List of Changes Page

Page	Revision	Page	Revision
16 - 44	Actor detailing for use case scenario		
51	Added cardinality for entity relations		

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Table of Content

List of Changes 3

List of Changes Page 4

Table of Content 5

Preliminary 8

Purpose of Writing Document 8

Document Scope / Coverage 8

Definition, Abbreviation and Acronym 8

Software Global Description 9

Software Statement of Objective 9

Software Perspective and Function 9

User Profile and Characteristic 10

Operation Environment 11

Software and System boundaries 11

Assumptions and Dependency 12

Software Detailed Description 12

Requirement Description 12

Functional Requirement 12

Non Functional Requirement 14

Analysis Model 15

Use Case Diagram 15

Use Case Scenario 16

Login 16

Create Account 17

Authorize 18

Upload Document 19

Input Salary 20

View Assistant Salary 21

Input Ticketing 22

Input Assistant Schedule 23

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Upgrade Account 24
Announce meeting or recruitment 25
Information overview 26
Edit personal account 27
View assistant schedule 28
View recruitment info management 29
Delete Ticketing 31
Input Warning 32
View Ticketing 33
Input Recruitment Result 34
View Warning 35
Request Replacement 37
View Personal Account 38
Manage User Account 39
Deauthorize 40
Confirm Replacement 41
View Announcement 42
View and Confirm Assistant Attendance 43
Confirm Next Phase Candidate 44
Class Diagram 46

External Interface Requirement 47
User Interface 47
Hardware interface 47
Software Interface 47
Communication Interface 47

Other Requirement 48
Performance Requirement 48
Safety Requirement 48
Security Requirement 48
Quality Software Attribute 48
Usage Requirement 49
Database Requirement 49

Attachment A : Difficult Word List 50

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Attachment B : Analysis Model **51**
Entity Relationship Diagram (ERD) 51
Class Diagram Full Resolution 51

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

1. Preliminary

1.1. Purpose of Writing Document

The main purpose of this Software Recruitment Specification (SRS) document is to specify a detailed description of the desired software (Human Resource Management System for IFLAB) and to also record any update of the specified documentations, in hope to better understand the software in future recurrence.

1.2. Document Scope / Coverage

In this SRS documentation, it is written in Times New Roman font with the size of 12pt, using align text Justify, line spacing 1.15. Furthermore, to make it easier to read and understand the contents of this documentation, several form of letters wii be used to mark the following:

- Text that is written in bold is a part that must be consider
- Text that is written in italic is writing that tends to be a term.

1.3. Definition, Abbreviation and Acronym

This software is inspired from impulse and igracias, where both share similar HR features such as presencing and scheduling. This takes the general idea of the idea of Human Resource Management System (HRMS) and implements it in the Practicum Laboratory environment. The software have features such as requirement, attendance, total work time, and finance (i.e. Salary). With the addition of a to-do list to improve scheduling of staff and assistants, and replacement requests for assistants in case of not attending a practicum, there will be a replacement for the assistant. Since there is a replacement request for practicum sessions, the software must be accessible anywhere and every time due to randomness of non supporting schedules of some assistants might have, in case for example lecture replacement schedule.

SRS : Software Requirement Specification
IEEE : Institute of Electrical and Electronics Engineers
IFLAB: Informatics Laboratory

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

2. Software Global Description

2.1. Software Statement of Objective

This software is to support the structure that has been created in IFLAB, this takes the general idea of the idea of Human Resource Management System (HRMS) and implements it in the Lab Practicum environment, the software has features such as requirement, attendance, total work time, and finance(i.e. Salary).

For registration as an assistant, students must upload some of the files that are required on the recruitment announcement page and the files that are being uploaded, only can be seen by the lecturer who is concerned and the student itself. After being selected, the lecturer will post the names that passed the selection on the web. The programming language that is used to develop this web is JavaScript.

2.2. Software Perspective and Function

The following are the product function are :

- Facilitate the person that follow recruitment progress
- Provide the informations for students that might want to be an Laboratory Assistant
- Provide the Lab schedule informations to Assistants
- Provide Practicum Assistant overview information and salary information
- Provide Lecturers some communication methods through announcement creation.
- Provide Lab staff to give salary information to Practicum Assistant
- Provide Lab manager to give warning letter to Practicum Assistant
- Provide Lab Assistant to announce and schedule a meeting (for recruitment phase)
- Provide Lab staff and assistant to review students (Candidates) that registered for Practicum Assistant Recruitment
- Provide Lab Manager to Approve of the selected students (Candidates) which registered to be an Practicum Assistant

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

2.3. User Profile and Characteristic

User Category	Task
Candidates	- Account Registration - Login / logout account - Document upload - Complaints / feedback filling - View recruitment phase information until acceptance or else
Practicum Assistant	- Login / logout account - View schedule - Request replacement - Complaints / feedback filling - Document upload - View announcements and warning - View / confirm attendance - View financial info - View recruitment phase information until acceptance or else
Lecturer	- Login / logout account - Complaints / feedback filling - Create announcements
Lab assistant	- Login / logout account - Set / view schedule - Set / view attendance and warning - Manage attendance - Complaints / feedback filing - View financial info - Upgrade candidate to practicum assistant - account - View / confirm attendance - Create announcements and recruitment - Account management - Sends warning to practicum assistants
Lab staff	- Login / logout account - Financial info (Set and validate) - Complaint / feedback report validation

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	- Account management - Lab assistant schedule input - Validate attendance of assistants - Create announcements
Lab manager	- Login / logout account - Create announcements - Authorize actions - Sends warnings to assistants - View complaint / feedback - Deauthorize assistant rights based on complaints - Announce internal meeting

2.4. Operation Environment

These are the following of minimum hardware and software specifications needed to be able to run Human Resource Management for Practicum Laboratory in Telkom University:

- Hardware includes:
  - Memory 1GB RAM or more
  - Intel Core 2 Duo with Clock Speed 1.4Ghz Processor or equivalent AMD Processor
  - Ethernet LAN Adapter / Wi-Fi / Cellular Network to connect to the internet
  - Monitor size (display) 640x800
  - Compatible mouse and keyboard
- Software includes:
  - Windows 7 Home Edition Operating System or Mac OS X Leopard 10.5.7 or Linux.
  - Google Chrome Browser version 4+ / Mozilla Firefox version 3.5+ / Opera version 10.5+ / Safari version 4+.

2.5. Software and System boundaries

The boundary and implementation that is used to develop this software such as:

- Responsive view for the software
- 24/7 accessibility
- Minimum of 8 password digit and maximum of 24

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

- Minimum of 6 username characters and maximum of 10
- Password cannot contain username elements
- Candidates can create an account (one account), the account can only be authorized by Lab Assistants and Lab Manager

2.6. Assumptions and Dependency

In the conception of this SRS there hasn't been any software used for Practicum Laboratory HRMS. Therefore some assumptions are made to the scope and conception of this software, such as:

- Recruitment Phase is done biannually
- The device to access the software is online
- Maintenance is done by IFLAB representatives
- Data Store is provided by stakeholder
- Current information will be added by stakeholders (Current Lab Assistant, Staff, etc).

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3. Software Detailed Description

3.1. Requirement Description

3.1.1. Functional Requirement

No.	Requirement Code	Function	Description
1.	F-01	Login	Used by every role in the software for logging into an account in the system.
2.	F-02	Create account	This function is used by candidates to create a recruitment account.
3.	F-03	Authorize	Lab managers can authorize actions from staff and lab assistants like recruitments and candidates acceptance.
4.	F-04	Upload document	Candidates are able to upload their documents during the recruitment session, document phase.
5..	F-05	Input salary	Lab staff can input values of available salary to take and estimated total salary. Assistants able to see their salary info.
6.	F-06	View assistant salary	Assistants are able to view their available honorary salaries to take and current salary.
7.	F-07	Input ticketing	Users are able to input ticketing for complaints, feedback, and issues regarding practicum or internal issues.
8.	F-08	Input assistant schedule	Admin are able to manage schedules for assistants. Practicum assistants can only view their schedule.
9.	F-09	Upgrade account	Lab assistants can upgrade candidates accounts to practicum assistants. Lab staff can upgrade practicum assistants to lab assistant accounts. Both upgrades must be under the authorization of the lab manager.
10.	F-10	Announce meeting or recruitment	Lab assistants are able to announce based on their respective roles to others.
11.	F-11	Edit personal account	All users can alter their own user account such as: changing password.
12.	F-12	View assistant schedule	Assistants able to check their schedules.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

13.	F-13	View recruitment info management	Candidates are able to view their result for each recruitment phase.
14.	F-14	Delete ticketing	Admin can delete tickets after the issue is resolved.
15.	F-15	Input warning	Lab managers can give warnings to practicum assistant and lab assistant, while lab assistant can only give warnings to practicum assistant.
16.	F-16	View ticketing	Users can view their current ticketing process.
17.	F-17	Input recruitment result	Lab assistants can input the result of each recruitment phase.
18.	F-18	View warning	Practicum assistants can view how many warnings they have on their account.
19.	F-19	Request replacement	Practicum assistants able to request replacements if they cannot attend.
20.	F-20	View personal account	Users can see their account on the account page.
21.	F-21	Manage user account	Lab staff and lab assistants have rights to alter records of account, while others can only view or edit non institutional records.
22.	F-22	Deauthorize	Lab managers can deauthorize assistant accounts in case of fatal violations or warnings.
22.	F-23	Confirm replacement	After a practicum assistant asks for a replacement, the Lab assistant can confirm the replacement after finding a suitable replacement.
24.	F-24	View announcement	Users can view announcements.
25.	F-25	View and confirm attendance	Assistants are able to view their attendance. Assistants are able to confirm their attendance.
26.	F-26	Confirm next phase attendance	Candidates needs to confirm on their behalf whether they can or cannot come to next phase of the recruitment

3.1.2. Non Functional Requirement

No.	Quality	Requirement Code	Description
1.	Product Requirement	N-01	HRMS for practicum laboratory that is accessible anytime. Example taken for this case is IFLAB. It is also used for recruitment for new candidates and recruitment for lab assistants. Based on this statement, the software will be web based.

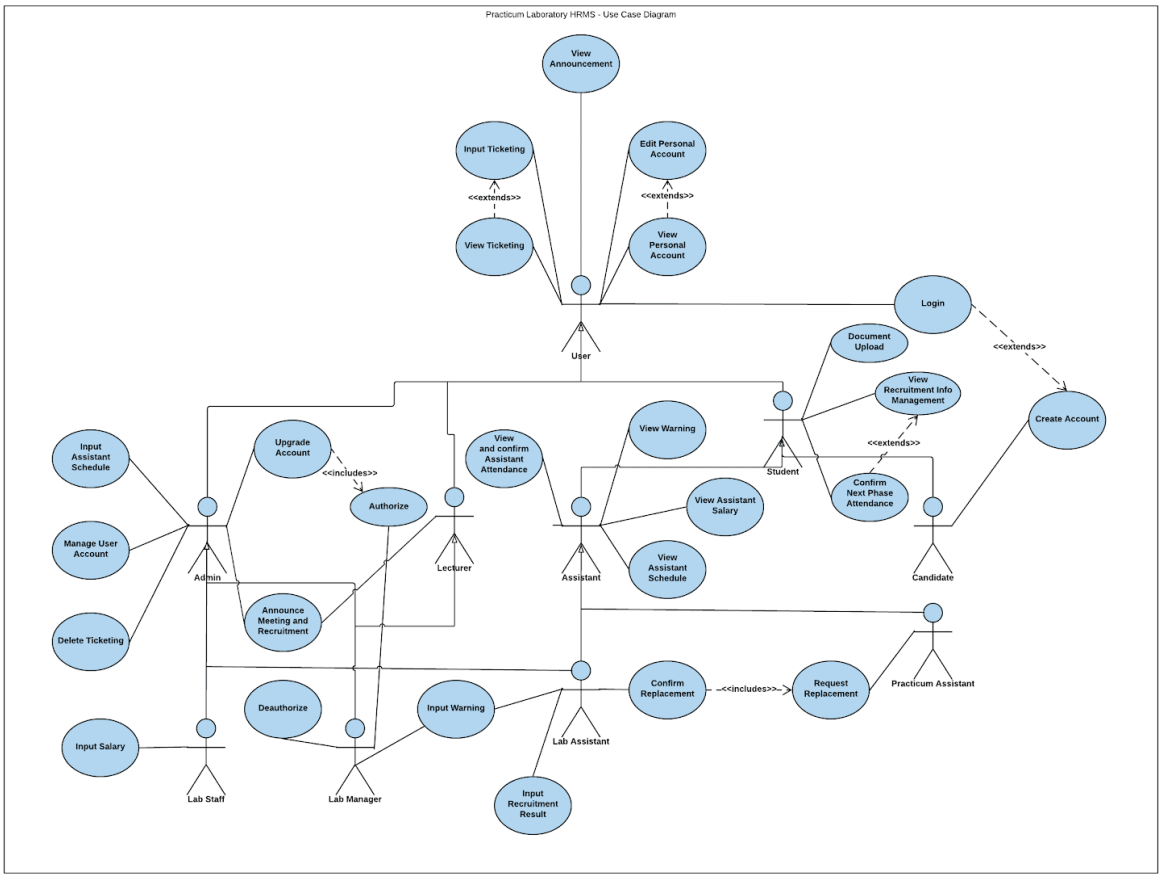
This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

2.	Organizational Requirement	N-02	Intended for use by lab managers, staff, assistants and candidates of a practicum laboratory.
3.	External Requirement	N-03	The system must be adjusted based on the local institutional law for the faculty and university (For this case School of Computing Telkom University)

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2. Analysis Model

3.2.1. Use Case Diagram



This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2. Use Case Scenario

3.2.2.1. Login

Use Case Name	Login	
Actor	Candidates, Practicum Assistant, Lecturer, Lab Assistant, Lab Staff, and Lab Manager	
Description	Role based login to software	
Pre-Condition	Actor input username and password	
Post-Condition	Actor successfully login based on their roles	
Main Scenario		
	Actor	System
	1. Actors click login button from homepage	
	2. Actors input their username and password	
		3. System checks if the login data is valid or not
		4. If valid then redirected to overview page and else back to step 2 to input data correctly
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.2. Create Account

Use case Name	Create Account	
Actor	Candidate	
Description	Account Creation for practicum assistant candidates	
Pre-Condition	The input data must be completed	
Post-Condition	Successfully created account for the candidates	
Main Scenario		
	Actor	System
	1. Candidate opens homepage	
		2. Candidate checks if there are any open recruitment announcement
		3. Candidate fills the required data in the form
	4. Candidate fills the required data in the form	
		5. If the data is valid, account successfully created and system stores the data in the database and candidates choose to be redirected to the overview page for candidate account or directly to homepage
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.3. Authorize

Use Case Name	Authorize	
Actor	Lab Manager	
Description	Authorize formal actions of Lab Assistants or Staffs	
Pre-Condition	An action from lab staff or lab assistant that requires authorization must exist (e.g. Recruitment Announcement)	
Post-Condition	Action is authorized and executed by the requesting actors	
Main Scenario		
	Actor	System
	1. Lab manager opens authorization request panel	
	2. Accept or reject lab assistant or staffs request for execution of an action	
	3. Confirmation of action will be directed to lab assistants and staffs account	
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.4. Upload Document

Use Case Name	Upload Document	
Actor	Candidate, Practicum Assistant, Lab Assistant	
Description	Recruitment document upload for candidates or extending assistant	
Pre-Condition	Documents required for uploading is prepared by candidates in specific format (e.g. jpeg, png, pdf)	
Post-Condition	Documents successfully uploaded	
Main Scenario		
	Actor	System
		1. After account is created, candidates can choose to upload their documents after registration or not
		2. If candidates choose to upload, candidates will be required to upload the required documents before the deadlines given. Else candidates can choose to upload later by pressing upload tab
		3. Candidates that did not have a complete document uploaded will automatically be rejected for recruitment next phase.
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.5. Input Salary

Use Case Name	Input Salary	
Actor	Lab Staff	
Description	Adds salary info to assistants information	
Pre-Condition	Input value must be available, cannot be empty	
Post-Condition	Salary information successfully added to the assistants data	
Main Scenario		
	Actor	System
	1. Lab staff opens financial page from the overview page	
	2. Lab staff finds student id and name to input the required data execution of an action	
	3. If the assistants want to take the salary, the staff can update the salary from the software for the assistants to confirm the assistant has taken the salary. If the salary has not been taken, the staff will add the old value to the latest value. Estimated salary will be subtracted or added based on the available salary. Each changes will update the update date automatically	

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.6. View Assistant Salary

Use Case Name	View Salary	
Actor	Practicum Assistant, Lab Assistant	
Description	Adds salary info to assistants information	
Pre-Condition	The salary data must be available in the database	
Post-Condition	The salary data is shown to the assistants	
Main Scenario		
	Actor	System
	1. Assistants opens the financial page	
		2. The systems database checks for the financial page
		3. If the data is available, the system will process the data as an information for the assistants to view

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.7. Input Ticketing

Use Case Name	Input Ticketing	
Actor	Candidate, Practicum Assistant, Lecturer, Lab Assistant, Lab Staff, Lab Manager	
Description	Input ticketing for issues in the system or practicum session, or personal account	
Pre-Condition	Input value cannot be empty, ticket id is unique (PRIMARY KEY)	
Post-Condition	Ticketing data successfully stored to database and is available to lab assistants, lab staff, and lab manager to view and process	
Main Scenario		
	Actor	System
	1. Respective roles opens the ticketing menu	
	2. The actor can input tickets based on the	

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	roles they have	
		3. The ticket has been stored in DB and the actors will require to wait for their ticket to be processed further by lab assistants, lab staffs, and lab manager and waits for reply
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.8. Input Assistant Schedule

Use case name	Input Assistant Schedule	
Actor name	Lab Assistant, Lab Staff, Lab Manager	
Description	Input Assistant according to their assisting lab work	
Pre-Condition	Assistant data and schedule data are fill in the schedule form	
Post-Condition	Assistant data are store in the schedule database	
Main Scenario		
	Actor	System
	1. Actor open the schedule page	
		2. System open the schedule page

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	3. Actor choose the correspondent date day and time for the assistant	
	4. Actor fill the assistant data in that day and time	
		5. System store the data in the schedule database
		6. System put assistant data in the correspondent day and time
		7. System view the assistant schedule
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.9. Upgrade Account

Use case name	Upgrade Account
Actor name	Lab Assistant, Lab Staff, Lab Manager
Description	Upgrade the chosen register student that apply to an assistant account into an assistant account
Pre-Condition	An action from admin
Post-Condition	Candidate account are successfully upgraded to Assistant account
Main Scenario	

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	Actor	System
	1. Actor choose the chosen candidate	
		2. System view the chosen candidate information
	3. Actor push the upgrade button to upgrade candidate account	
		4. System change the candidate account into an assistant account
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.10. Announce meeting or recruitment

Use case name	Announce meeting or recruitment	
Actor name	Lab Assistant, Lab Staff, Lab Manager, Lecturer	
Description	Announcing Meeting and recruitment info into all account inbox	
Pre-Condition	No announcement was sent	
Post-Condition	Announcement sent to all account	
Main Scenario		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	1. Actor open the announcement page	
	2. Actor push the new announcement button	
		3. System give a form to actor to fill
	4. Actor fill form according to its announcement type and description	
		5. System save the announcement
		6. System send the announcement to all account
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.11. Edit personal account

Use case name	Edit personal account
Actor name	Candidate, Practicum Assistant, Lab Assistant, Lecturer, Lab Staff, Lab Manager
Description	Function to edit actor account information
Pre-Condition	Account information remain unchanged

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Post-Condition	Account information is edited	
Main Scenario		
	Actor	System
	1. Actor open the information page	
		2. System open the information page
	3. Actor pushes the edit information button.	
		4. System redirect actor to the edit form page
	5. Actor edit their information	
		6. System save the edited information
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.12. View assistant schedule

Use case name	View assistant schedule
Actor name	Practicum Assistant, Lab Assistant
Description	View the weekly schedule to obtain the actor work schedule

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Pre-Condition	Main Page	
Post-Condition	Schedule page	
Main Scenario		
	Actor	System
	1. Actor open the schedule page	
		2. System redirect actor to schedule page
	3. Actor see their schedule in the schedule page	
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.13. View recruitment info management

Use case name	View recruitment info management
Actor name	Candidate, Practicum Assistant

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Description	Page for all recruitment information for candidate and extending assistant.	
Pre-Condition	Main page	
Post-Condition	Recruitment page	
Main Scenario		
	Actor	System
	1. Actor open the Recruitment page	
		2. System redirect actor to recruitment page
	3. Actor see their recruitment information or progress in the recruitment page	
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.14. Delete Ticketing

Use case name	Delete Ticketing	
Actor name	Lab Assistant, Lab Staff, Lab Manager	
Description	Admin Delete the searched ticket from database	
Pre-Condition	The ticket still exist in the database	
Post-Condition	The ticket has been deleted from the database	
Main Scenario		
	Actor	System
	1. Admin find the ticket that they want to delete	
		2. System find the ticket that they want to delete and found it
	3. Admin delete it from database	
		4. the ticket has been no longer exist in database
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.15. Input Warning

Use case name	Input Warning	
Actor name	Lab Assistant, Lab Staff, Lab Manager	
Description	The Admin give warning to the Practicum Assistant and The Lab Manager give the warning to the Practicum Assistant because they obey or break the rules	
Pre-Condition	The Warning is not exist on the database	
Post-Condition	The warning has been given that belongs to	
Main Scenario		
	Actor	System
	1. Admin find the person that disobey the rules	
		2. The system found and show the data that the admin wanted
	3. Admin given the warning that the person that belongs to	
		4. The system record the Admin wanted to do
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.16. View Ticketing

Use case name	View Ticketing	
Actor name	Candidate, Practicum Assistant, Lecturer, Lab Assistant, Lab Staff, Lab Manager	
Description	Show to the user the ticket that they wanted to see	
Pre-Condition	The user find the ticket that they wanted	
Post-Condition	The user found the ticket and the system show it to them	
Main Scenario		
	Actor	System
	1. The user find the ticket that they wanted to see	
		2. The system found it and show it to the user
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.17. Input Recruitment Result

Use case name	Input Recruitment Result	
Actor name	Lab Assistant	
Description	The Lab Assistant input the data that related to Recruitment result	
Pre-Condition	The Lab Assistant input the result to the database	
Post-Condition	The result has been created by Lab Assistant	
Main Scenario		
	Actor	System
	1. Lab Assistant input the recruitment result	
		2. The result is exist in the database and it can be shown if the User want to see the result
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.18. View Warning

Use case name	View Warning	
Actor name	Practicum Assistant, Lab Assistant	
Description	Show the inputted warning that given to the who break the rules	
Pre-Condition	The Lab Assistant find the warning that they wanted to see	
Post-Condition	The Lab Assistant found it and the system show the result	
Main Scenario		
	Actor	System
	1. The Lab Assistant find the warning data on the system	
		2. System show it to the Actor
Exceptional Scenario (Alternative flow)		

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.19. Request Replacement

Use case name	Request Replacement	
Actor name	Practicum Assistant	
Description	The Practicum Assistant request for replacement because there was a things that the Assistant can't attend the Practicum	
Pre-Condition	The Practicum Assistant request Replacement to the Lab Assistant	
Post-Condition	The Lab Assistant approve the request from the Practicum Assistant	
Main Scenario		
	Actor	System
	1. The Practicum Assistant request Replacement to the Lab Assistant	
		2. System record the data and send it to the Lab Assistant
	3. Lab Assistant Approve it	
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.20. View Personal Account

Use case name	View Personal Account	
Actor name	Candidate, Practicum Assistant, Lecturer, Lab Assistant, Lab Staff, Lab Manager	
Description	User can see their personal account (username, password, gender, descriptions) in the user tab	
Pre-Condition	User has logged in	
Post-Condition	User can see their Personal Info	
Main Scenario		
	Actor	System
	1. User login to HRMS	
		2. Verify the account and will be directed to the homepage
	3. User see Personal Info in account page	
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.21. Manage User Account

Use case name	Manage User Account	
Actor name	Lab Assistant, Lab Staff, Lab Manager	
Description	Admin can choose which user to edit (basic CRUD function)	
Pre-Condition	Selected user account has been created and is in the user database.	
Post-Condition	The selected account has been modified	
Main Scenario		
	Actor	System
	1. Admin choose an account to be modified	
	2. The selected account then will be read and/or modified by the admin	
		3. The modified account will be updated in the database
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.2.22. Deauthorize

Use case name	Deauthorize	
Actor name	Lab Manager	
Description	Lab Manager can deauthorize accounts, deauthorized accounts cannot access HRMS.	
Pre-Condition	The Lab Manager has selected an account to be deauthorized, and is in the database.	
Post-Condition	The selected account is now deauthorized	
Main Scenario		
	Actor	System
	1. Lab Manager choose an account to be deauthorized and is in the database	
	2. The Lab Manager select the Deauthorized button	
		3. The accounts authorization has been revoked. The revoked account will be automatically deleted in 30 days.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.23. Confirm Replacement

Use case name	Confirm Replacement	
Actor name	Lab Assistant	
Description	This function is used for accepting a replacement request by Practicum Assistant	
Pre-Condition	A Request Replacement has been inquired	
Post-Condition	The Request Replacement has been confirmed to be applied	
Main Scenario		
	Actor	System
	1. Lab Assistant login to HRMS	
		2. Verify the account and will be directed to the homepage
		3. A request Replacement has been inquired
	4. Lab Assistant verify the Request	

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	5. The Lab Assistant confirmed the request.	
		6. The confirmed request will be passed on
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.24. View Announcement

Use case name	View Announcement	
Actor name	Candidate, Practicum Assistant, Lecturer, Lab Assistant, Lab Staff, Lab Manager	
Description	User can see announcements in HRMS	
Pre-Condition	User has logged in HRMS	
Post-Condition	User saw announcement	
Main Scenario		
	Actor	System
	1. User login to HRMS	
		2. Verify the account and will be directed to the homepage
	3. User see announcement in homepage	

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.25. View and Confirm Assistant Attendance

Use case name	View and Confirm Assistant Attendance	
Actor name	Practicum Assistant	
Description	Practicum Assistant can see their attendance, and confirm those attendance if there are no inaccuracy	
Pre-Condition	Practicum Assistant has logged in HRMS	
Post-Condition	Practicum Assistant confirmed the attendance	
Main Scenario		
	Actor	System
	1. Practicum Assistant logging into the HRMS	
		2. System will verify the account and

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

		logged in the account
	3. Practicum Assistant will see and confirm the attendance	
		4. The confirmation will be passed on
Exceptional Scenario (Alternative flow)		
	Actor	System

3.2.2.26. Confirm Next Phase Candidate

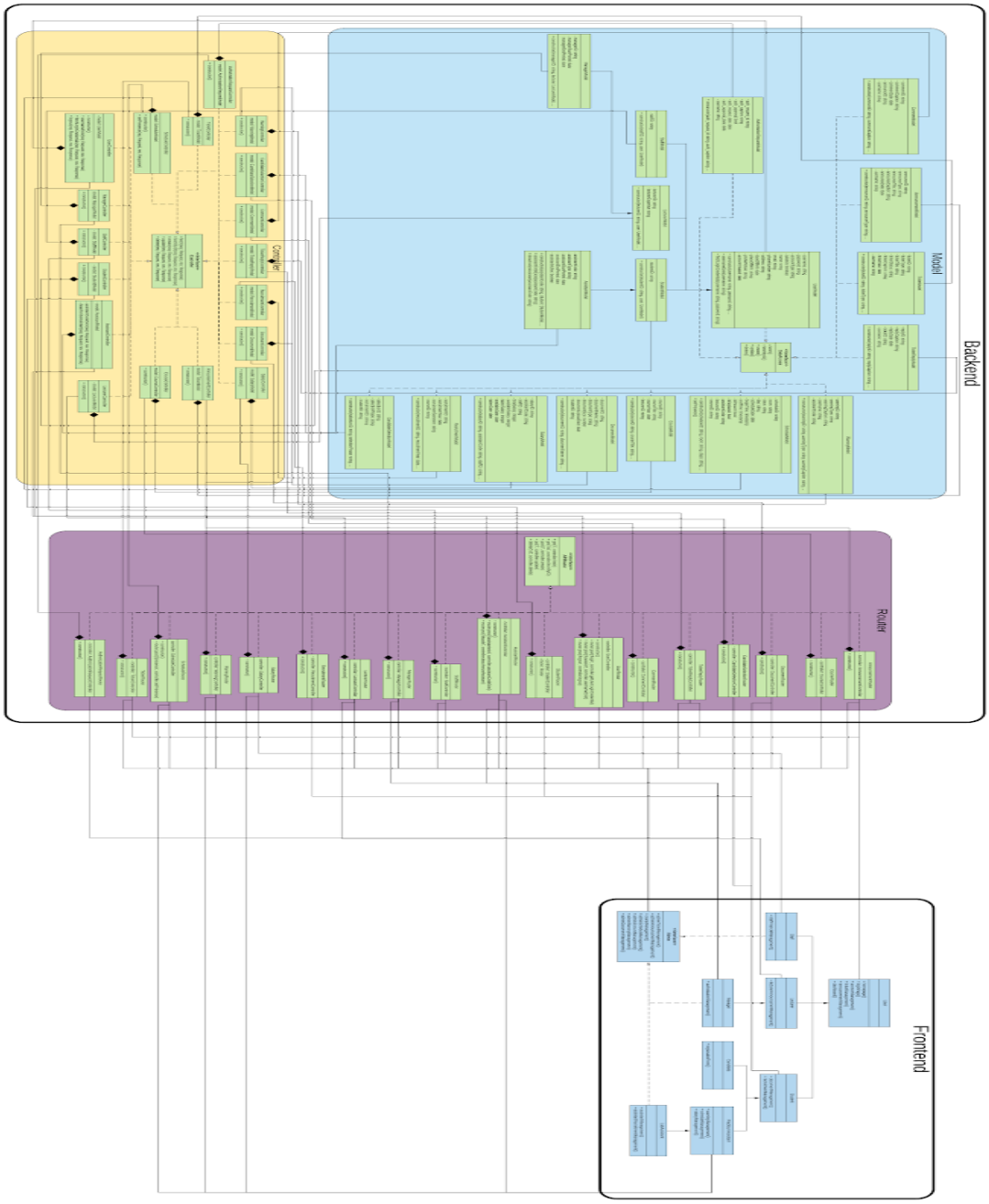
Use case name	Confirm Next Phase Candidate	
Actor name	Candidate, Practicum Assistant	
Description	Candidates and extending assistants that have been accepted are obligated to confirm their commitment to go to the next phase of the recruitment.	
Pre-Condition	Candidate or extending assistant has been accepted	
Post-Condition	Confirmation of the attendance has been confirmed	
Main Scenario		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

	1. Candidate go to recruitment page	
	2. Candidate check the box to confirm their attendance	
		3. The confirmation is passed on to the system
Exceptional Scenario (Alternative flow)		
	Actor	System

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

3.2.3. Class Diagram



This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

4. External Interface Requirement

4.1. User Interface

User will be able to access the system that we make using web browser, user will be able to access the web and can immediately see the information provided base on user role,such example as the assistant lab can see their overview information and salary information, they can also announce and schedule a meeting to the other assistant and review the recruit information, the general user will be able to register to be an assistant at the open recruitment time and see the registration information. Other roles such as Lab manager can give warning letters to assistants and authorize the selected student to be an assistant. Lab managers can also review students that register to be an assistant and send salary information to the assistant.

4.2. Hardware interface

To access this website, users need hardware such as computers or laptops that are equipped with internet connections to access them. Here are some of the hardware that might be needed to access the online application that we make:

- Memory 512 MB RAM or more
- Dual-core Intel processor / comparable or higher
- Ethernet LAN Adapter / Wi-Fi / Cellular Network for internet connection
- Monitor size (display) 800 x 600, Mouse and keyboard compatible.

For web access, it is recommended to fulfill the minimum requirements above, if the hardware owned is more than the minimum requirements above, then it is better for the performance process.

4.3. Software Interface

HRMS for Practicum Laboratory is a program that will be built with JavaScript with Nuxt.js framework, HTML & CSS with Bootstrap framework and will run with any commonly used OS like Windows, Mac OS X, Linux, Android, and iOS with supported web browsers like, Google Chrome and Mozilla Firefox.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

4.4. Communication Interface

The web that we make is to help the lab to do human resource work because it can help users in registering to be an assistant,reviewing the register student,accepting their registration,give salary information,give schedule information,and announce a meeting. one of the provided features such as the salary information can give assistent their salary information directly on the web instead of always asking the lab staff in real life.

On this website we also provide scheduling features to make it easier for the assistant to change their work schedule and create a meeting. We also provide the announcement feature so the assistant can see if there are a meeting,salary information,warning letter or their schedule change are approve

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

5. Other Requirement

5.1. Performance Requirement

The system should take less than 45 seconds to access every page. For search queries should take less than 90 seconds and doing data manipulation should not take more than 75 seconds.

5.2. Safety Requirement

The system shall be built based on consciousness of safety based on user requirements. Every user has the rights and policy for securing the system to ensure that the system is functioning properly when the user is accessing.

5.3. Security Requirement

The system is protected through encryption technique from the server, the encryption is used for user data protection. Administrator rights shall only be granted on Lab Manager, Staffs, and Lab Assistants for the ability doing maintenance to the system. The session for login will be stored while a user is in logged in status.

5.4. Software Quality Attributes

- The system will be developed fully using Javascript with Node.js for server-side and Nuxt.js for client-side with addition of mandatory web elements such as HTML and CSS.
- The system will use a SQL Database, MySQL for its ease of use, robustness, and open-source.
- The server will use either Windows or Linux (e.g. Ubuntu) operating system.

5.5. Usage Requirement

- User interface in this system from the client's side is in the form of website pages that can be accessed through any OS by using a supported web browser.
- Language used in this system is english.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

5.6. Internationalization Requirement

As mentioned in the usage requirement that the system will use english as the default language, since generally many systems globally use english and there can be unfamiliar terms in other languages while the user only understands such terms in english. Therefore, it is necessary to use the most common language used in many computers, which is english.

5.7. Database Requirement

The database, as explained in the software quality attribute, will be using MySQL as the database. MySQL is an open-source Relational DBMS that is widely used as a web database due to its known high performance, security, and scalability.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

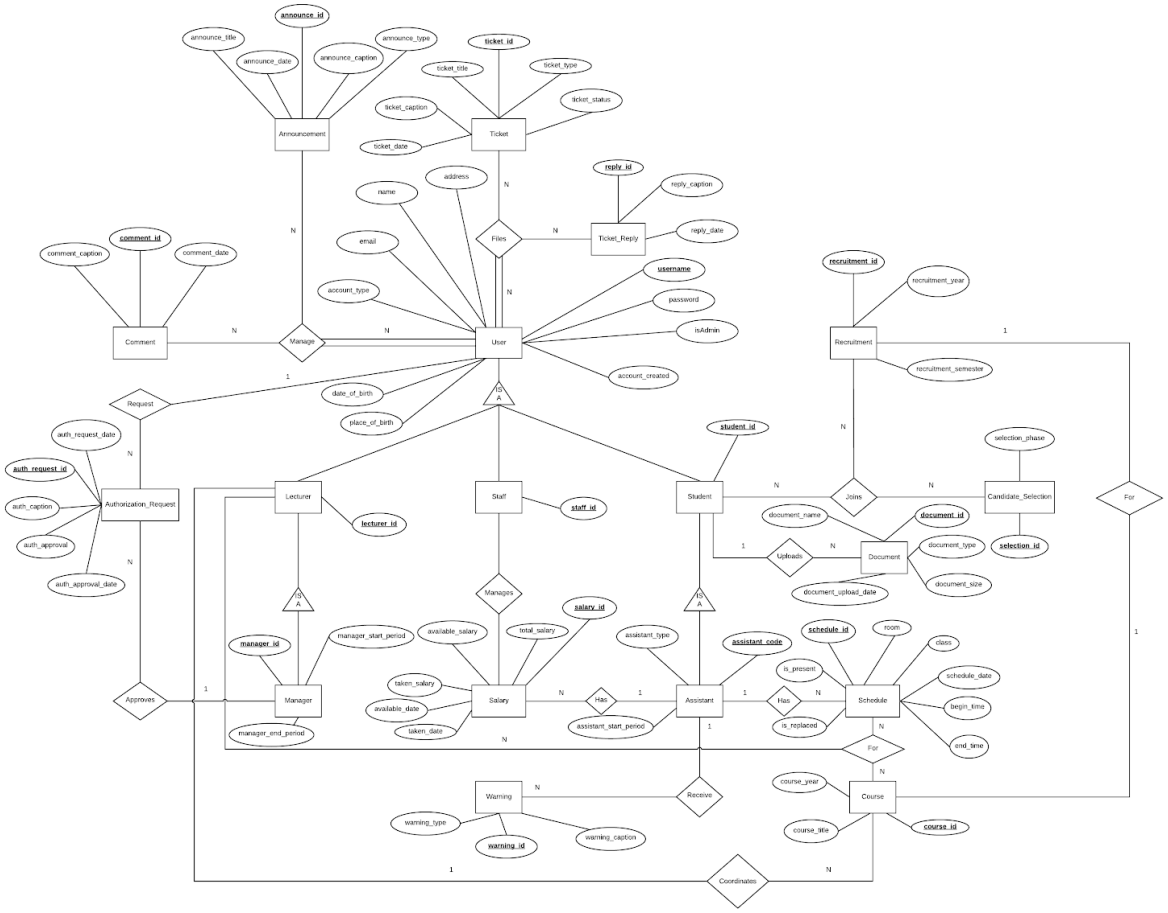
Attachment A : Difficult Word List

- Actor: A human entity/machine that interacts with the system to do some work.
- Hardware: Computer hardware includes the physical parts of a computer, such as the case, central processing unit, monitor, keyboard, computer data storage, graphics card, sound card, speakers and motherboard.
- Software: Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
- Login: logging in is the process by which an individual gains access to a computer system by identifying and authenticating themselves.
- SRS: A software requirements specification is a description of a software system to be developed. It is modeled after business requirements specification, also known as a stakeholder requirements specification.
- Use Case: a use case is a list of actions or event steps typically defining the interactions between a role and a system to achieve a goal. The actor can be a human or other external system.
- Class Diagram: a class diagram in the Unified Modeling Language is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects.
- User: a person who uses or operates something, especially a computer or other machine.
- Website: A website is a collection of web pages and related content that is identified by a common domain name and published on at least one web server.
- Admin: is a person who is responsible for the upkeep, configuration, and reliable operation of computer systems; especially multi-user computers, such as servers.
- Client: A client is a piece of computer hardware or software that accesses a service made available by a server.
- Server: A server is a computer program or device that provides a service to another computer program and its user, also known as the client.

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University

Attachment B : Analysis Model

- **Entity Relationship Diagram (ERD)**



https://www.lucidchart.com/publicSegments/view/aea6fa96-c503-4b55-889e-28c583b0c081/image.png

- **Class Diagram Full Resolution**
  https://www.lucidchart.com/publicSegments/view/d5756656-d24f-496c-85fc-f2dd85cb3af4/image.png

This document and the information contained therein are property of the Informatics Engineering Study Program-Telkom University and are confidential. It is forbidden to reproduce this document without being noticed by the S1 Informatics Engineering Study Program, Telkom University