CHAPTER IV
RESULTS AND DISCUSSION

4.1. System Design

System design is the process by which a system is designed and later to be the development of the system. The design of this system involves the estimation of physical needs, manpower and funds needed to support the development of the system as well as to support its operations after applied. The design of the system can be interpreted as, after the analysis phase of the system development cycle, defining on functional requirements, preparation for the design implementation, describing the system which will be established in the form of depiction of planning, sketching, the setting of several separate elements into a unified whole and function, and the software and hardware components of the system.

4.1.1. Objective System Design

1. Applications E-Leaning on the International Program UNIKOM Based Website is intended to facilitate the users or students for teaching and learning activities in UNIKOM.
2. With the application of E-Learning in the International Program UNIKOM Based Website, Secretariat Prodi, lecturers, and students can often access the class schedule or if there is a change in the course schedule, even with long distances and are connected to the Internet.
3. With the application of E-Learning in the International Program UNIKOM Based Website, then Lecturer Guardians and Students can conduct online guardianship so that it becomes one of the alternative solutions to problems.

4.1.2. Proposed System Overview

The proposed system for E-Learning in the International Program Website Based UNIKOM is to use the concept of client-server, to the client using the browser and the server using PHP and MySql and done online, where the user or client can access these applications using the Internet access provider or use wifi internet connection.

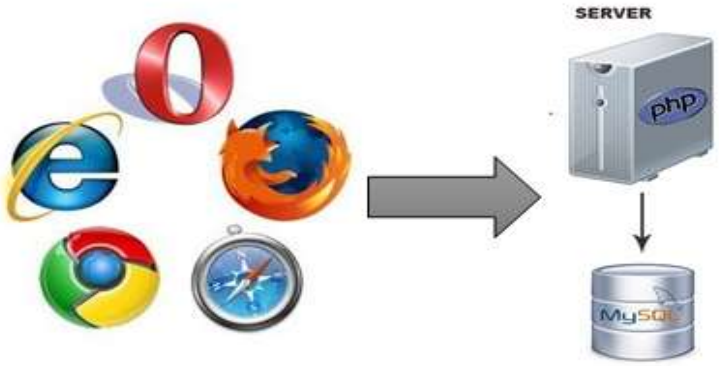


Figure 4.1 Scheme Client - Server

(Source: Programming a mobile application based smartphone and tablet PC android, Nazruddin Intercessory H, April 2012: 312)

4.1.3. Proposed Design Procedure

This design includes the use case diagrams, activity diagrams, sequence diagrams, class diagrams, collaboration diagrams, component diagrams and deployment diagrams that produce a better system. Process designed broken down into several sections which can be formed into a single unified system componen.

4.1.3.1. Use Case Diagram

Use case describes an interaction between one or more actors with information systems that will be made. Roughly speaking, the use case is used to determine what function is in an information system and who is entitled to use those functions. The following is the use case diagram of the system of E-Learning in the International Program of the proposed web-based UNIKOM.

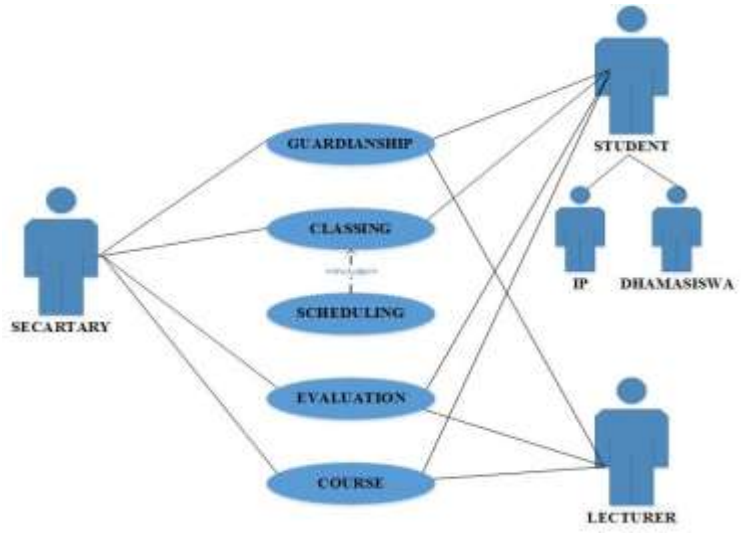


Figure 4.2 Use case diagram system E-Learning based website

4.1.3.2. Scenario Use Case.

Use case scenarios are used to make it easier to analyze scenarios that will be used in subsequent phases by assessing these scenarios, the following use case scenarios proposed.

1. Scenario Use Case Guardianship.

The use case scenario Guardianship system proposed is as follows:

1. Name of the use case : Guardianship.
2. The main actors : SecretaryProdi, Student
3. Purpose : To provide information guardianship should bedone by lecturers and students.

Table 4.1 Scenario Usecase Guardianshp

(Secretary Prodi)	System
1. Secretary fill in the username and password on the login page and enter the news menu	
	2. Displays the menu page news
3. Choose menu Lecture Guardian Selecting lecturers for each class to be the homeroom	
	4. Display message Successfully Saved Data
5. Select the subjects election boundaries and class selection menu .	
	6. Display the Form menu Setting Boundaries Course Selection and Election Form Limit Setting End Class
7. Fill limit election date subjects and Class	
	8. Display message Successfully Saved Data
Scenario Alternative	
	9. If the data is not appropriate and not complete it will display the message that the data is incomplete and does not successfully saved
10. Perform data entry back news.	

2. Scenario Use Case Classing

The use case scenario Classing in E-Learning system proposed is as follows:

1. Name of the use case : Classing.
2. Main actor : Secretary Prodi, Student
3. Purpose : to perform the data distribution of each school year class.

Tabel 4.2 Scenario Classing Usecase

(Secretary Prodi)	**System**
1. Secretary fill in the username and password on the login page and enter the Max Limit Student / Class menu .	
	2. Displaying Limit Setting Maximum Student / Class .
3. Enter the number of students per class	
	4. Display message Successfully Saved Data .
5. Select the school year	
	6. Display the data View settings School Year For Each Force
7. Choose button add	
	8. Display view Setting Academic Year For Each Force
9. Fill Data academic year and Data semester	
	10. Display message data successfully saved.
11. Select the Import Stident Menu.	
	12. Displays View Import File Excel Data Mahasiswa
13. Select file student format .xls	
	14. Display message Successfully Saved Data
Scenario Alternative	

	15. If the data is not appropriate and not complete it will display the message that the data is incomplete and does not successfully saved
16. Perform data entry back news .	

3. Scenario Use Case Schedulling.

The use case scenario logged Lecturer in E-Learning system proposed is as follows:

1. Name of the use case : Lecture,
2. Main actor : Secretary Prodi.
3. Purpose : To reschedule the course between lecturer and student classes.

Tabel 4.3 Scenario Lecture Usecase

Secretary Prodi	System
1. Secretary fill in the username and password on the login page and enter the menu lecturer	
	2. Showing page menu room class .
3. Add new row	
	4. Display form room class
5. Fill name room class	
	6. Displays message successfully
7. Add new row	
	8. Display view data class.
9. Choose menu create shcedule.	
	10. Display data view setting schedule.
11. Fill data Courses, room, Lecture, Day And hour	
	12. Display message Data successfully save.

Scenario Alternative	
	13. If the data is not appropriate and not complete it will display the message that the data is incomplete and does not successfully saved
14. Perform the setting and charging data back .	

4. Scenario Use Case Evaluation

The use case scenario logged Course in E-Learning system proposed is as follows:

1. Name of the use case : Evaluation.

2. Main actor : Lecture and Student

3. Purpose : Facility to provide the value of faculty to students

Tabel 4.4 Scenario Evaluation Usecase.

Lecture	System
1. Lecture fill in the username and password on the login page and enter the menu subjects .	
	2. Showing page menu teaching .
3. Give a percentage value ranging from quizzes, assignments, UTS, UAS each student and click menu view student	
	4. Showing Data Assessment
5. Fill data values quizzes, assignments, UTS, UAS. 6. Click menu save	
	7. Displays a message successfully.
Scenario Alternative	

8. Menu click cancel	
	9. Cancel for saving data.

5. Scenario Use Case Online Course.

The use case scenario logged **Online Course** in E-Learning system proposed is as follows:

1. Name of the use case : Online Course.

2. Main actor : Lecture, Student.

3. Purpose : To provide all information about tasks, announcements, material, uts, or UAS to students.

Tabel 4.5 Scenario Usecase Class Course

Lecture	System
1. Lecture fill in the username and password on the login page and enter the menu Online Courses.	
	2. Displays the menu page online Course
3. Click menu Add	
	4. Displays Form Create a New Class
5. Fill field class name and course name and click button submit	
	6. Display Message Successfully Saved Data.
Scenario Alternative	
	7. if the data is not appropriate and not complete it will display the message that the data is incomplete and does not successfully saved
8. Perform the setting and charging data back .	

Activity diagram below shows in detail the data flow logically without considering the physical environment in which the data flows. Here's a diagram of the proposed activity on the application of E- Learning in International Programs UNIKOM based websites

1. Activity Diagram Guardianship.

In this section we describe the workflow at **Guardianship** proposed system which aims to see the flow of the process that is being proposed system.

The Activity diagram is as follows:

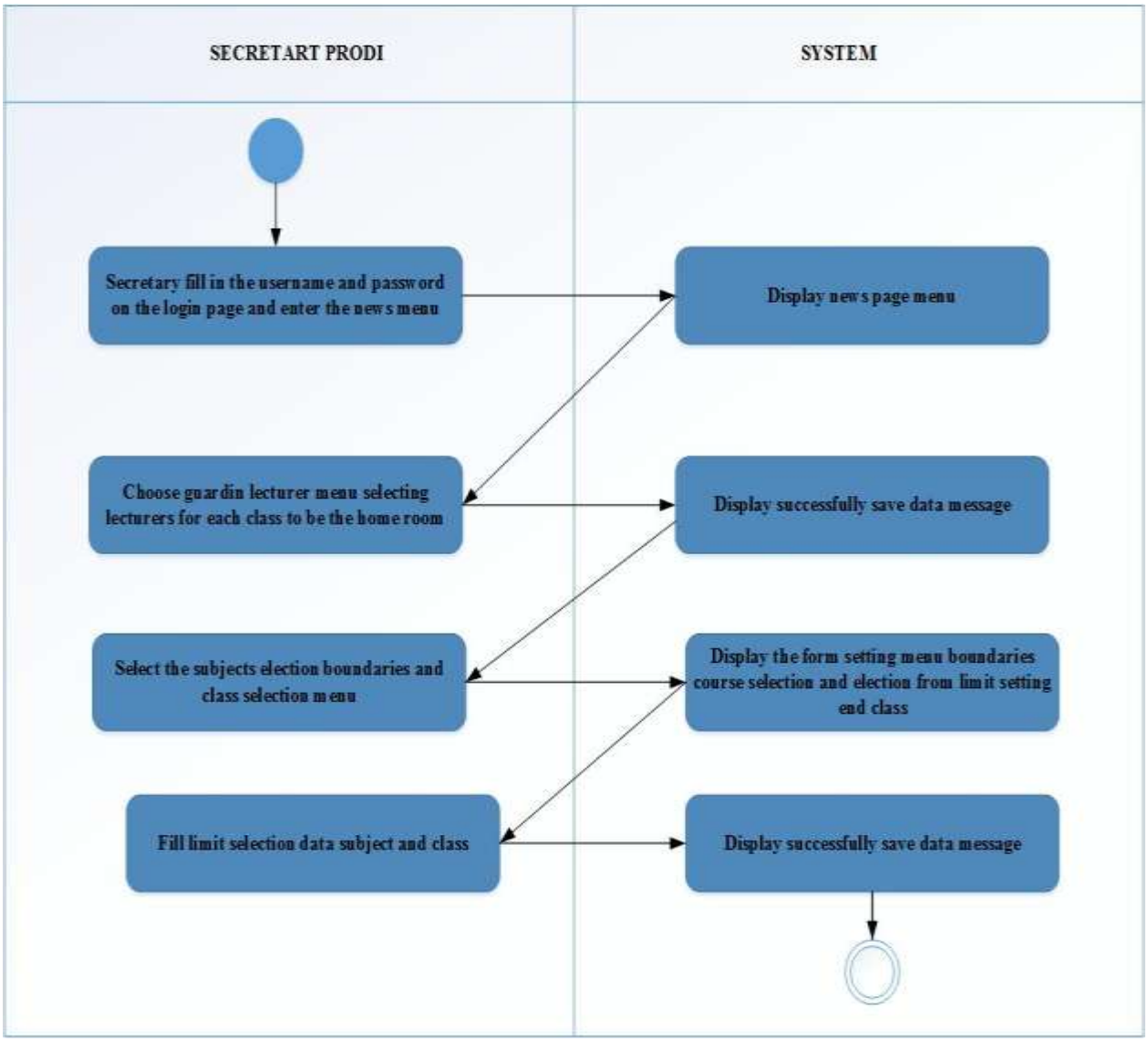


Figure 4.3 Activity Diagram guardianship

2. Activity Diagram Classing

In this section we describe the workflow in the system proposed Classing aiming to see the flow of the process that is being proposed system.

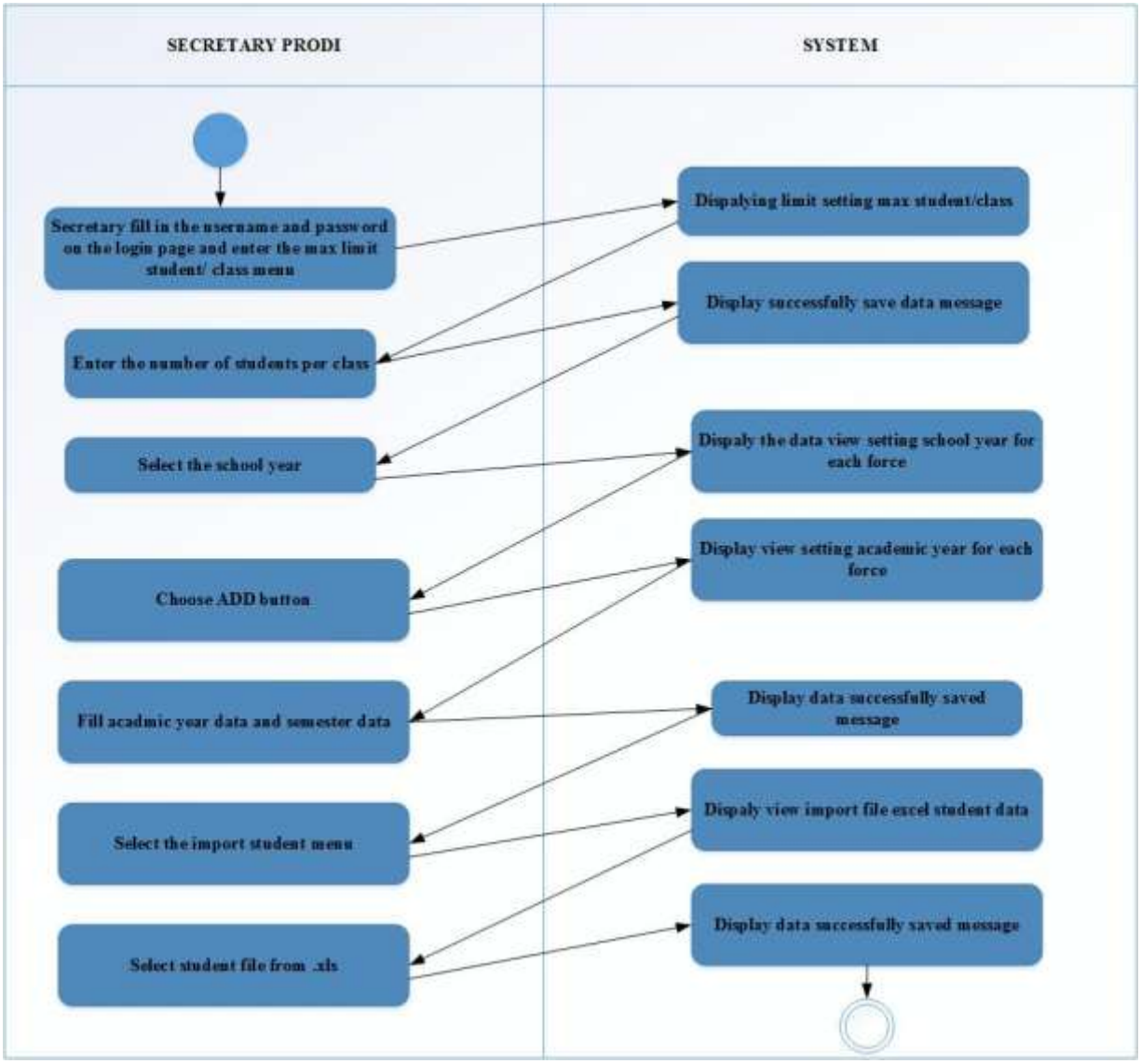


Figure 4.4 Activity Diagrams Classing proposed

3. Activity Diagram Scheduling.

In this section we describe the workflow in the system Scheduling proposed which aims to see the flow of the process that is being proposed system. The Activity diagram is as follows:

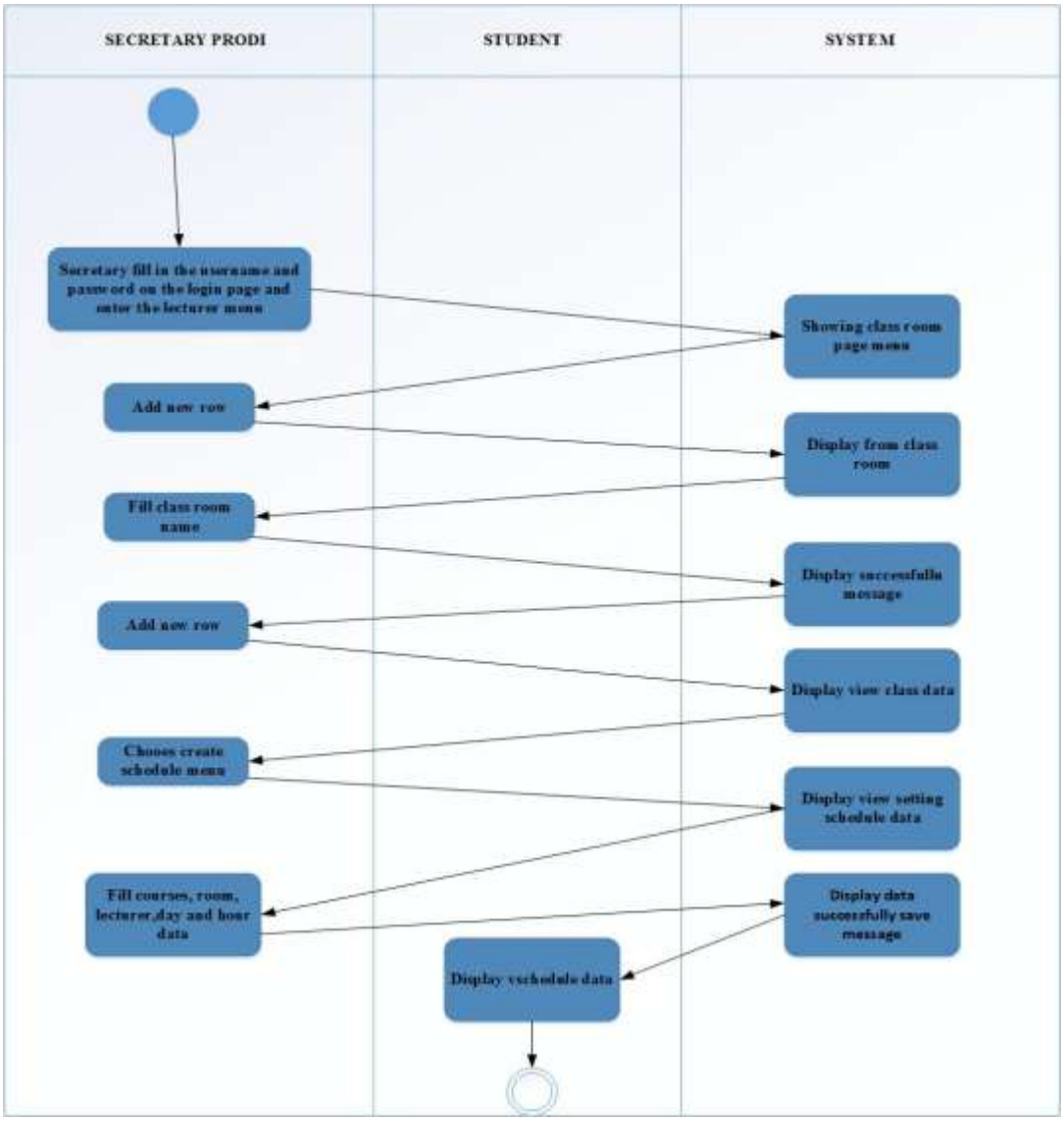


Figure 4.5 Activity Diagrams Scheduling proposed

4. Activity Diagram Evaluation.

In this section we describe the workflow in the Evaluation of the proposed system that aims to see the flow of the system that is being proposed.

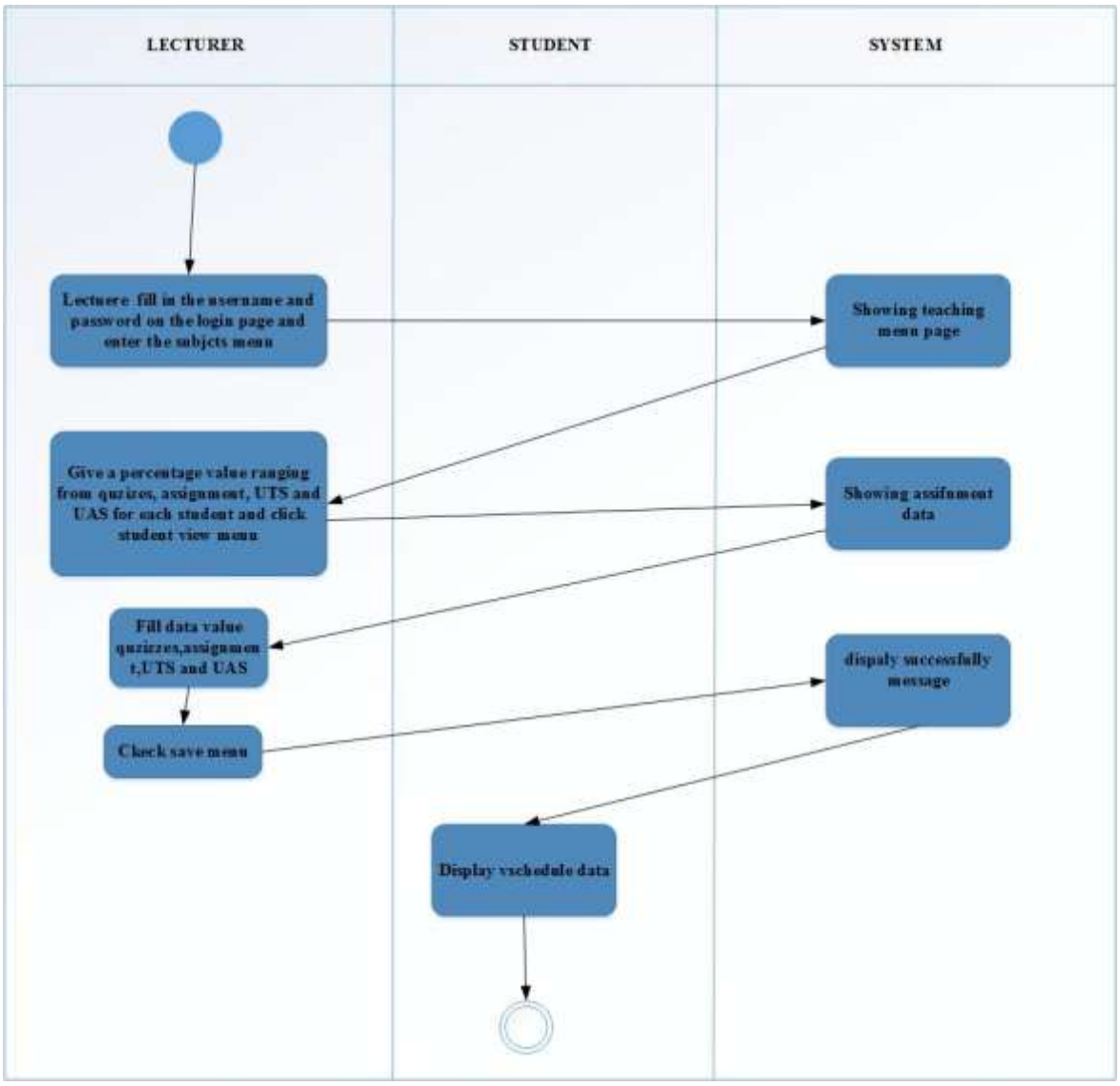


Figure 4.6 Activity Diagram Subjects proposed Scheduling

5. Activity Diagram Online Courses

In this section we describe the workflow in system Online Courses proposed.

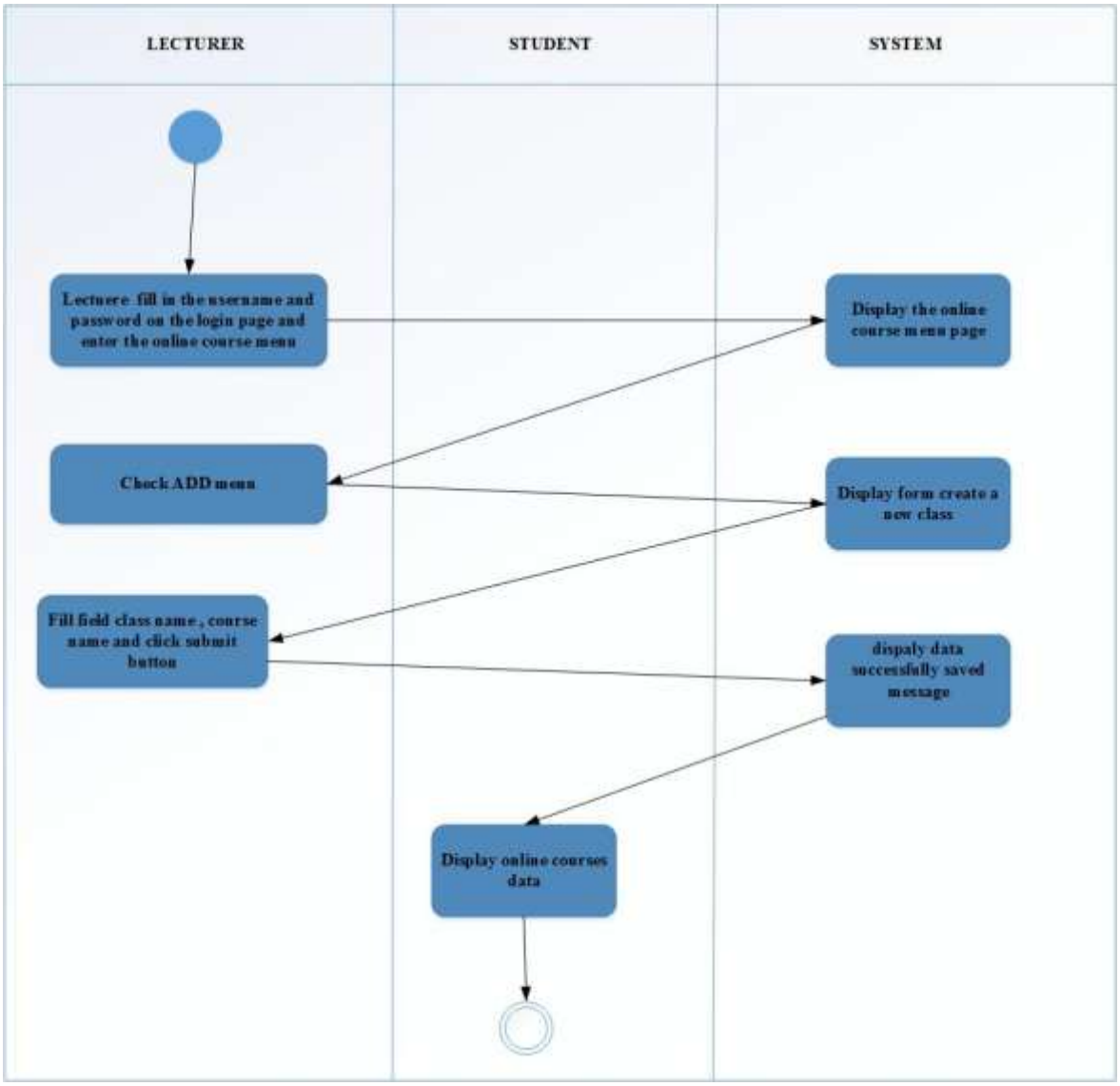


Figure 4.7 Activity Diagram Proposed Online Course

4.1.3.3. Class Diagram

Class diagrams aims to describe the static structure of classes in the system. Class used to represent something that is handled by the system. Here Class Diagram Applications E-Learning in International Web-Based Program UNIKOM

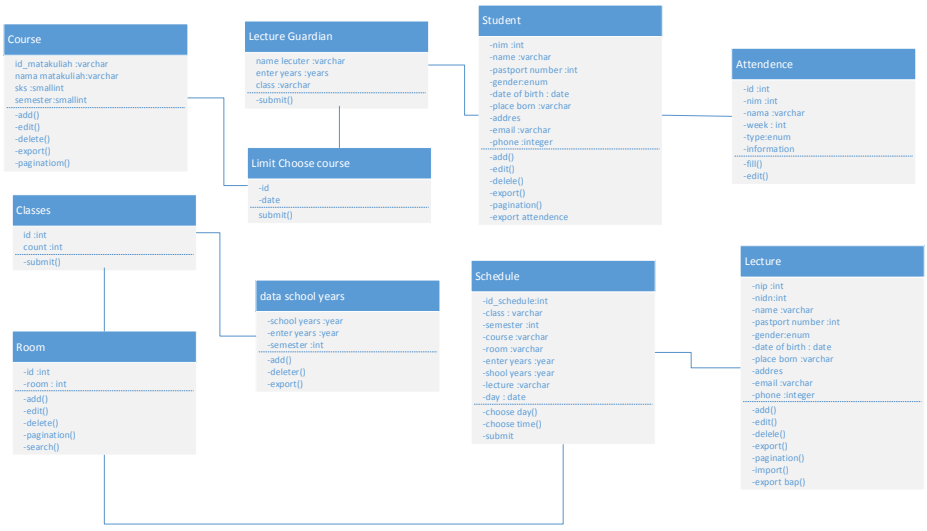


Figure 4.8 class diagram

4.1.3.4. Deployment Diagram

Deployment / physical diagrams describe in detail how the components be deployed in the infrastructure system, where the components will be located (on the machine, server or hardware).

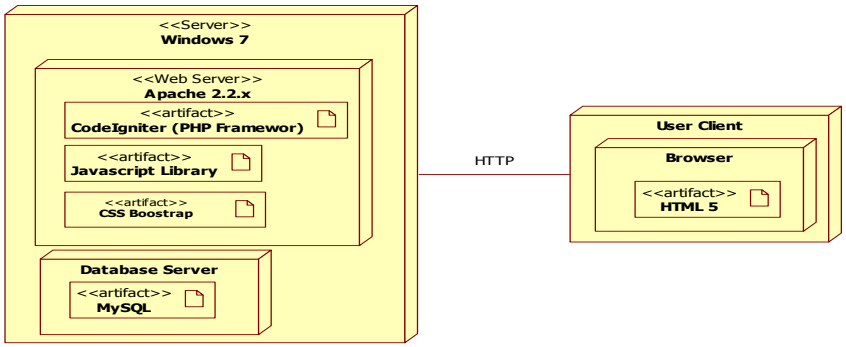


Figure 4.9 Deployment Diagram

4.2 Implementation

Applications prototype implementation on E-Learning in International Master Program Web Based performed using the programming language PHP and CodeIgniter Framework and MySQL as the database, the PHP programming language can run on various operating systems and hardware,

The purpose of implementation of this system is to explain the procedures for the use of applications to any user who will use it. So that the user is able to respond well and what has been shown to provide input to the system application developers to make improvements to the system will be made for the better again.

4.1.4. Implementation limits

The limit on the implementation of E-Learning in International UNIKOM program based websites, including is:

1. Implementation of the application is given only three types of access that the Secretariat Prodi, lecturers and students.
2. Implementation of an application built specifically only students International Program UNIKOM.

4.1.5. Software Implementation

Implementation of software is with a PC or laptop operating systems Windows, Mac, Ubuntu, Linux and connected to the Internet. The software implementation is as follows:

Implementation of software PC / Laptop:

1. Operating System Windows XP / 7 / Windows 8 ..
2. XAMPP 1.7.4 for Internet and local database storage.
3. Adobe Dreamweaver CS3, Sublime Text to write coding in PHP program.

4. CodeIgniter Framework 2.0
5. Mozilla Firefox 11 as a browser :

4.1.6. Hardware Implentation

To be able to run applications designed it takes hardware as a supporter. The hardware requirements are as follows:

Hardware implementation:

1. Processor: Intel (R) 2:10 GHz Core2Duo
2. Memory: 1024MB RAM
3. Hard drive: 250GB Seagate
4. VGA: Intel (R) HD Graphics
5. Monitor: 15 "Advance

4.1.7. Database Implementation (syntax SQL)

Database Implementation taken based on the design of a database created previously. The following table structure implemented in the database:

1. “ms_lecturer”

```
CREATE TABLE IF NOT EXISTS `ms_lecturer` (
  `nip` varchar(25) NOT NULL,
  `nidn` varchar(12) NOT NULL,
  `lecturer_name` varchar(50) NOT NULL,
  `gender` enum('MALE','FEMALE') NOT NULL,
  `address` varchar(60) NOT NULL,
  `phone` varchar(13) NOT NULL,
  `email` varchar(40) NOT NULL,
  `status` enum('TETAP','LB') NOT NULL,
  `date_of_birth` varchar(12) NOT NULL,
  `place_of_birth` varchar(25) NOT NULL,
  `marital_status ` enum('MARRIED','SINGLE') NOT NULL,
  `education` text NOT NULL,
  PRIMARY KEY (`nip`)
)
```

2. “ms_news_category”

```
CREATE TABLE IF NOT EXISTS `ms_news_category` (
  `news_category_id` int(11) NOT NULL AUTO_INCREMENT,
  `news_category_name` varchar(25) NOT NULL,
  `added_date` datetime NOT NULL,
  PRIMARY KEY (`id_katberita`)
)
```

3. “ms_student”

```
CREATE TABLE IF NOT EXISTS `ms_student` (
  `nim` varchar(10) NOT NULL,
  `student_name` varchar(35) NOT NULL,
  `gender` enum('MALE','FEMALE') NOT NULL,
  `date_of_birth` varchar(12) NOT NULL,
  `place_of_birth` varchar(25) NOT NULL,
  `address` varchar(35) NOT NULL,
  `email` varchar(30) NOT NULL,
  `phone` varchar(13) NOT NULL,
  `collage_entry_year` year(4) NOT NULL,
  `nationality` varchar(15) NOT NULL,
  `religion` varchar(15) NOT NULL,
  `father_name` varchar(35) NOT NULL,
  `mother_name` varchar(35) NOT NULL,
  `parents_address` varchar(35) NOT NULL,
  `student_class_id` varchar(10) NOT NULL,
  PRIMARY KEY (`nim`)
)
```

4. “ms_subject”

```
CREATE TABLE IF NOT EXISTS `ms_subject` (
  `subject_id` varchar(11) NOT NULL,
  `subject_name` varchar(40) NOT NULL,
  `subject_semester` smallint(2) NOT NULL,
  `credit_hour ` smallint(2) NOT NULL,
  PRIMARY KEY (`subject_id`))
```

5. “ms_room”

```
CREATE TABLE IF NOT EXISTS `ms_room` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `room_no` varchar(11) NOT NULL,
  PRIMARY KEY (`id`))
```

6. “tr_absent”

```
CREATE TABLE IF NOT EXISTS `tr_absent` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `list_id` int(11) NOT NULL,
  `nim` varchar(10) NOT NULL,
  `week` int(2) NOT NULL,
  `type` enum(' THEORY ',' PRACTICE ') NOT NULL,
  `explanation` enum('S','I','A','M') NOT NULL,
  PRIMARY KEY (`id`),
  KEY `list_id` (`list_id`),
  KEY `nim` (`nim`))
```

7. “tr_limit_setting”

```
CREATE TABLE IF NOT EXISTS `tr_limit_setting ` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `limit_setting_date` date NOT NULL,
  PRIMARY KEY (`id`))
```

8. “tr_limit_course_setting”

```
CREATE TABLE IF NOT EXISTS `tr_limit_course_setting` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `study_year` varchar(10) NOT NULL,
  `school_year` year(4) NOT NULL,
  `smester`
enum('1','2','3','5','6','7','8','9','10','11','12','4')
NOT NULL,
  `time_ditentukan` datetime NOT NULL,
  PRIMARY KEY (`id`))
```

9. "tr_news"

```
CREATE TABLE IF NOT EXISTS `tr_berita` (
`id_berita` int(11) NOT NULL AUTO_INCREMENT,
`judul_berita` text NOT NULL,
`judul_berita_eng` text NOT NULL,
`isi_berita_eng` text NOT NULL,
`isi_berita` text NOT NULL,
`tgl_posting` datetime NOT NULL,
`gambar_berita` varchar(60) NOT NULL,
`id_katberita` int(11) NOT NULL,
`hit_berita` int(11) NOT NULL,
PRIMARY KEY (`id_berita`),
KEY `id_tipeberita` (`id_katberita`))
```

10. "tr_lecturer_news"

```
CREATE TABLE IF NOT EXISTS `tr_lecturer_news` (
`news_id` int(11) NOT NULL AUTO_INCREMENT,
`nip` varchar(25) NOT NULL,
`news_headline` text NOT NULL,
`fill_news` text NOT NULL,
`posting_date` datetime NOT NULL,
`news_picyure` varchar(60) NOT NULL,
`hit` int(11) NOT NULL,
PRIMARY KEY (`news_id`),
KEY `nip` (`nip`))
```

11. "tr_ guardian_lecturer"

```
CREATE TABLE IF NOT EXISTS `tr_guardian_lecturer` (
`nip` varchar(25) NOT NULL,
`entry_year` year(4) NOT NULL,
`class_id` varchar(10) NOT NULL,
KEY `nip` (`nip`))
```

12. “tr_ schedule”

```
CREATE TABLE IF NOT EXISTS `tr_schedule` (
  `schedule_id` int(11) NOT NULL AUTO_INCREMENT,
  `subject_id` varchar(11) NOT NULL,
  `nip` varchar(25) NOT NULL,
  `class` varchar(10) NOT NULL,
  `room_id` int(11) NOT NULL,
  `smester` smallint(2) NOT NULL,
  `teachings_year` varchar(10) NOT NULL,
  `start_hour` time NOT NULL,
  `end_hour` time NOT NULL,
  `day` enum('MONDAY',' TUESDAY',' WEDNESDAY',
'THURSDAY',' FRIDAY',' SATURDAY',' SUNDAY') NOT NULL,
  `assignment ` smallint(3) NOT NULL,
  `quiz ` smallint(3) NOT NULL,
  `midtest` smallint(3) NOT NULL,
  `finaltest` smallint(3) NOT NULL,
  `pres` smallint(3) NOT NULL,
  PRIMARY KEY (`schedule_id `),
  KEY `subject_id` (`subject_id`),
  KEY `nip` (`nip`),
  KEY `room_id` (`room_id`))
```

13. “tr_student_schedule”

```
CREATE TABLE IF NOT EXISTS `tr_student_schedule` (
  `student_schedule_id` int(11) NOT NULL AUTO_INCREMENT,
  `nim` varchar(10) NOT NULL,
  `subject_id` varchar(10) NOT NULL,
  `teachings_year` varchar(11) NOT NULL,
  `schedule_id` int(11) NOT NULL,
  `subject_assignment` decimal(4,2) NOT NULL,
  `subject_quiz` decimal(4,2) NOT NULL,
  `subject_midtest` decimal(4,2) NOT NULL,
  `subject_finaltest` decimal(4,2) NOT NULL,
  `status ` smallint(1) NOT NULL,
  PRIMARY KEY (`student_schedule_id`),
  KEY `schedule_id` (`schedule_id`))
```

14. “tr_lecturer_class”

```
CREATE TABLE IF NOT EXISTS `tr_lecturer_class` (
  `lecturer_class_id` int(11) NOT NULL AUTO_INCREMENT,
  `nip` varchar(25) NOT NULL,
  `class_name` varchar(25) NOT NULL,
  `subject_name` varchar(25) NOT NULL,
  `password` varchar(255) DEFAULT NULL,
  PRIMARY KEY (`lecturer_class_id`))
```

15. "tr_student_select_subject"

```
CREATE TABLE IF NOT EXISTS `tr_student_select_subject` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `nim` varchar(10) NOT NULL,
  `subject_id` varchar(11) NOT NULL,
  `semester_taken` smallint(2) NOT NULL,
  `status` enum('yes','no') NOT NULL,
  PRIMARY KEY (`id`),
  KEY `nim` (`nim`,`subject_id`),
  KEY `subject_id` (`subject_id`))
```

16. "tr_entry_class"

```
CREATE TABLE IF NOT EXISTS `tr_entery_class` (
  `nim` varchar(10) NOT NULL,
  `lecturer_class_id` int(11) NOT NULL,
  KEY ` lecturer_class_id ` (`lecturer_class_id `),
  KEY `nim` (`nim`))
```

17. "tr_material"

```
CREATE TABLE IF NOT EXISTS `tr_material` (
  `material_id` int(11) NOT NULL AUTO_INCREMENT,
  `class_id` int(11) NOT NULL,
  ` explanation ` varchar(35) NOT NULL,
  `posting` datetime NOT NULL,
  `file` varchar(60) DEFAULT NULL,
  PRIMARY KEY (`material_id`),
  KEY `class_id` (`class_id`))
```

18. "tr_class_limit"

```
CREATE TABLE IF NOT EXISTS `tr_class_limit` (
  `id` int(1) NOT NULL,
  `total` int(3) NOT NULL,
  PRIMARY KEY (`id`))
```

19. "tr_announcement"

```
CREATE TABLE IF NOT EXISTS `tr_announcement` (
  `announcement_id` int(11) NOT NULL AUTO_INCREMENT,
  `class_id` int(11) NOT NULL,
  `schedule` varchar(25) NOT NULL,
  `fill` text NOT NULL,
  `posting` datetime NOT NULL,
  PRIMARY KEY (`announcement_id`),
  KEY `class_id` (`class_id`))
```

20. "tr_task"

```
CREATE TABLE IF NOT EXISTS `tr_task` (
  `task_id` int(11) NOT NULL AUTO_INCREMENT,
  `class_id` int(11) NOT NULL,
  ` explanation ` varchar(25) NOT NULL,
  `collecation_limt` datetime NOT NULL,
  `lecturer_task` varchar(45) NOT NULL,
  PRIMARY KEY (`task_id`),
  KEY `class_id` (`class_id`))
```

21. "tr_student_task"

```
CREATE TABLE IF NOT EXISTS `tr_student_task` (
  `student_task_id` int(11) NOT NULL AUTO_INCREMENT,
  `task_id` int(11) NOT NULL,
  `nim` varchar(10) NOT NULL,
  `subjek` text NOT NULL,
  `task_file` varchar(255) NOT NULL,
  `dead_line` datetime NOT NULL,
  `value ` decimal(4,2) NOT NULL,
  PRIMARY KEY (`student_task_id `),
  KEY `task_id` (`task_id`),
  KEY `nim` (`nim`))
```

22. "usr_admin"

```
CREATE TABLE IF NOT EXISTS `usr_admin` (
  `username` varchar(25) NOT NULL,
  `password` varchar(64) NOT NULL))
```

23. "usr_lecturer"

```
CREATE TABLE IF NOT EXISTS `usr_lecturer` (
  `nip` varchar(25) NOT NULL,
  `password` varchar(64) NOT NULL,
  KEY `nip` (`nip`))
```

24. "usr_student"

```
CREATE TABLE IF NOT EXISTS `usr_student` (
  `nim` varchar(10) NOT NULL,
  `password` varchar(64) NOT NULL,
  KEY `nim` (`nim`))
```

4.2. Implementation Interface

Implementation of E-Learning Interface applications in the International Program UNIKOM based website consists of 3 access is Secretariat Prodi, lecturers, and students.

1.3.1 Following the implementation of the interface Secretariat Prodi:

a. Login

An initial appearance after opening the E-Learning application, the user must first be entered on the account login form Secretariat Prodi, then enter your Username and Password and then directly enter the main menu by selecting the Submit button.



Figure 4.10 Login Page Secretary Prodi.

Once logged in successfully Prodi Secretariat then the main page that will appear is in figure 4.9

b. Main Home Secretary Prodi Menu.



Figure 4.11 Main Page Secretary Prodi

c. Student Menu

In the menu there are several submenus student provided include a master student, import and export attendance.



Figure 4.12 Student Menu

d. Master Student Menu.

In the menu there are several submenus student provided include a master student, import and export attendance



Figure 4.13 Master Student Menu

e. Import Menu

In this menu available browse button, where the function is intended to refer to the location in the form of an excel file that you want to import, after the discovery of the secretariat Prodi can press the upload button



Figure 4.14 Import Menu

f. export attedence Menu

In this menu secretariat Prodi can print each class attendance data based on the subjects that diampuh by lecturers.



Figure 4.15 export Attedence Menu

g. Lecture Menu.

In this menu there are several submenus that Master lecturer, import, export BAP, and Lecturer Guardian.



Figure 4.16 Lecture Menu

h. Master Lecture

In this menu secretariat study program students can add data as needed by clicking the Add button, then it will provide student data entry form.



Figure 4.17 Master Lecture

i. Import Menu.

In this menu available browse button, where the function is intended to refer to the location in the form of an excel file that you want to import, after the discovery of the secretariat Prodi can press the upload button



Figure 4.18 import Menu

j. Export BAP Menu

In this menu secretariat Prodi can print the data dossier of each semester based courses that diampuh by lecturer.



Figure 4.19 Export BAP Menu

k. Lecture Guardian Menu.

This menu provides the facility to which the lecturer setting that will be used as faculty trustee for each class.



Figure 4.20 Lecture Guardian Menu

l. Course Menu

In the menu there are several submenus include master courses, master courses and lecture and import.



Figure 4.21 Course Menu

m. Master Course

In this menu secretariat study program students can add data as needed by clicking the Add button, then it will provide student data entry



Figure 4.22 Master Course Menu

n. Import Menu

In this menu available browse button, where the function is intended to refer to the location in the form of an excel file that you want to import, after the discovery of the secretariat Prodi can press the upload button



Figure 4.23 Import Menu

o. Trusteeship



Figure 4.24 Trusteeship Menu.

p. Schedule All Data Menu

This menu provides scheduling data along with menu view attendance devoted to view attendance data.



Figure 4.25 Schedule All Data Menu

q. Class and set schedule Menu.

This menu provides a menu where the secretariat Prodi makes scheduling based on class.



Figure 4.26 class and set schedule menu

r. Data School Years Menu

This menu is a menu that provides the data activation ajaraan year by each generation is also accompanied with the delete menu.



Figure 4.27 Data School Years menu

s. Electoral Boundaries Course Menu

This menu is a menu that provides facilities for activation when subjects electoral boundaries



Figure 4.28 Electoral Boundaries Course

t. Limit Class Selection Menu

This menu provides the facility to set limits taking classes to do



Figure 4.29 Limit Class Selection

u. Maximum Limit Setting Student/Class Menu

This menu is provided to set the number of students in one class.

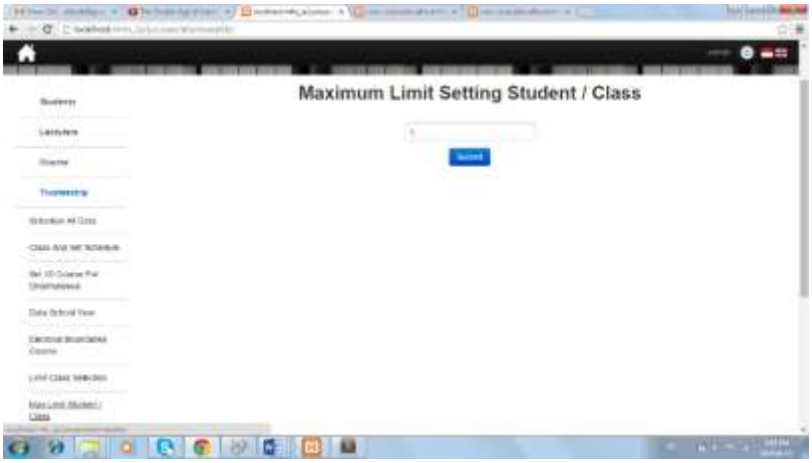


Figure 4.30 Maximum Limit Setting Student/Class

v. Classroom menu.

This menu is provided to perform additional room that will be used as a class to teach, and the menu is provided a menu of links to edit and delete.

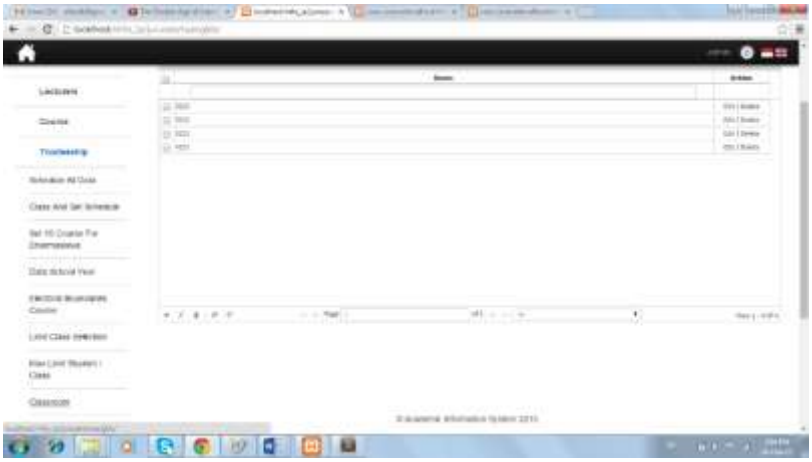


Figure 4.31 Classroom Menu

1.3.2 The following interface implementation Lecturer Page.

a. Lecture Login

This page is for accessing the menu in order to enter the main to page lecturer.



Figure 4.32 Lecturer Login Menu

If successful login it will show the main page figure 4:31

b. Lecturer Home



Figure 4.33 Home Lecturer Menu.

c. Teaching

This page enables the assessment of data subjects contains quizzes, assignments, uts and UAS students accompanied view, view attendance and edit menu



Figure 4.34 Teaching Menu.

d. Lecturer Guardian Menu.

This page provides data display guardianship students who will perform accompanied by faculty trustee to view menus and menu acc student.



Figure 4.35 Lecturer Guardian Menu

e. Courses Online Menu

This page provides for the creation of a class by a lecturer who will be followed by the student with the add button class.



Figure 4.36 Courses online menu

f. News Menu

This page provides for the making of an announcement that will be read by students and provided the add button



Figure 4.37 Courses Online Menu

1.3.3 Following the implementation of the student interface.

a. Login Student

This page is created to display the student access page, when students will access the main page.



Figure 4.38 Student Login menu

If the student successfully logged in, the student will be able to access the main page Figure 4.41.

b. Home Menu



Figure 4.39 Home Menu

c. Class Menu



Figure 4.40 Class Menu

d. History value Menu

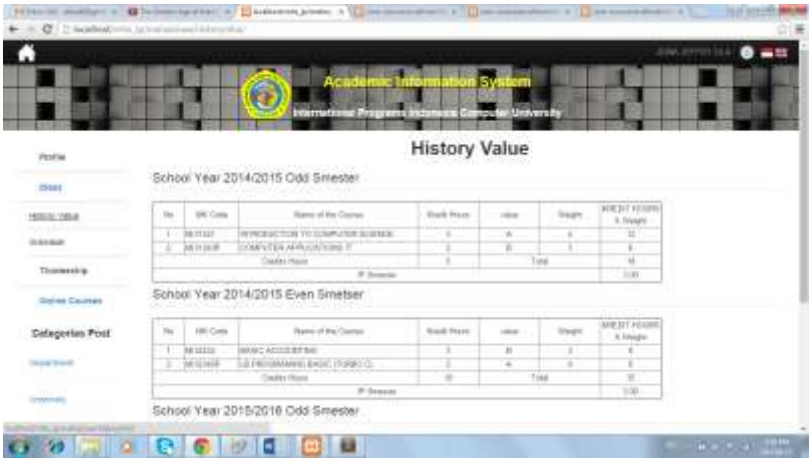


Figure 4.41 histroy Value menu

i. Schedule Menu .



Figure 4.42 Schedule Menu

e. Trusteeship Menu.



Figure 4.43 Trusteeship Menu

f. Select Course Menu

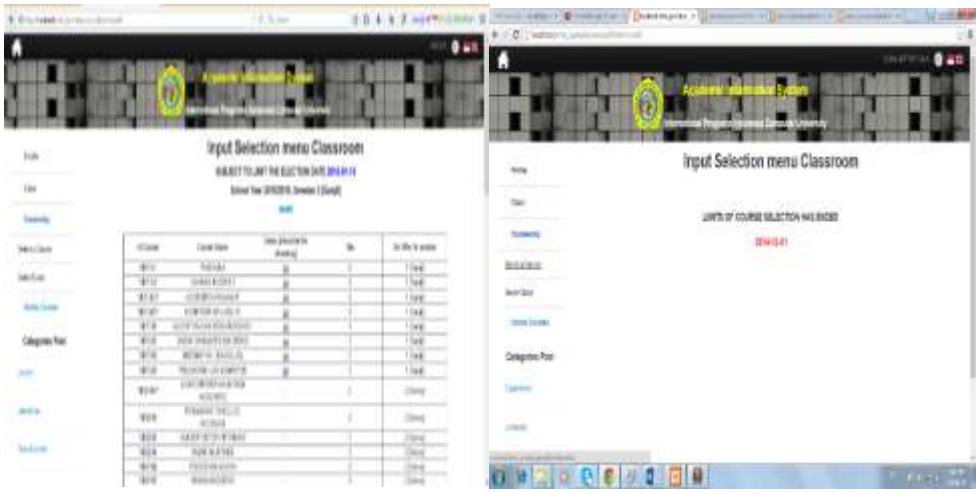


Figure 4.44 Select Course Menu

g. Select Class Menu



Figure 4.45 Select Class Menu.

h. Online Courses Menu



Figure 4.46 Online Courses Menu

4.3. Testing

In this study tests performed on the system that is functionally testing. The method used in this testing is black box testing focuses on the functionality of the system in the wake.

4.3.1. Testing plan

The system test plan that will be tested with blackbox testing techniques that will be grouped in the table below. Here are the results of the testing of Applications E-Learning in the International Program UNIKOM Based Website.

a. Tabel 4.6 Testing Plan Page Admin

No	The Component Tested	Submenu	Scenario Test Item	Testing Results
1	Display user Login secretariat Prodi	Menu Student	Displays the login form to the user	BlackBox
2	Main Menu Secretariat Prodi		Displays the student registration form	BlackBox
			Displaying student data excel file menu	BlackBox
			Displaying the form of export attendance	BlackBox
		Menu Lecture	Showing page master lecturer	BlackBox
			Displaying Import Excel File Data Lecturer	BlackBox
			Displaying FORM EXPORT BAP	BlackBox
			Input Settings menu displays Lecturer Guardian	BlackBox
		Course	Displaying Menu Master Class	BlackBox
			Displaying Import Excel File Data subjects	BlackBox
		Guardianship	Displays schedule teaching faculty	BlackBox
			Displays the menu for the manufacture of class	BlackBox
			Displaying the data arrangement of the school year	BlackBox
			Displays Form Setting Boundaries Course Selection	BlackBox
			Displaying limit class election	BlackBox
			Featuring Max Limit Student / Class	BlackBox

			Displaying classroom	BlackBox

b. **Table 4.7** Testing Plan Page Lecturer

No	The Component Tested	Submenu	Scenario Test Item	Testing Results
1	Display user Login Lecturer		Displays the login form to the user lecturer	Blackbox
2	Main Menu Lecture	Teaching	Displays the subjects list which givin by lecturers	Blackbox
		Lecture Guardian	Displays the login form to the user lecturer	Blackbox
		Online Class	Displays the menu for the manufacture of a class based courses held	Blackbox
		News	Displays menu to make the news	blacbox

c. Tabel 4.8 Testing Plan Student Page

NO	The Component Tested	Submenu	Scenario Test Item	Testing Results
1	Display user Login Student		Displays the login form to the user lecturer	Blackbox
2	Menu Student	Class	Display the history and value of the lecture schedule	blacbox
		Guardianship	Displays menu guardianship classes and courses	blacbox
		Online Class	Displays menu guardianship classes and courses	blacbox

4.4. Cases and Test Results

Here is a case to test the software that has been constructed using the method based on table blackbox testing plans that have been made previously,

a. Tabel 4.9 Cases and Test Results section Prodi Secretary

No	Menu	Test Cases	Scenario Test Item	Expected Results	Testing Results
1	Secretary Prodi	Display user Login	Choosing a login form to the user	When you first open the app will bring up the login form to the user	[ ] Accepted [ ] Denied
2	Menu Student	Display master student	Selecting form student added	When choosing registers, will bring added form students	[ ] Accepted [ ] Denied
		Display Menu export	Choosing a File Import Excel Data Students	When selecting the menu raises the browse button and upload.	[ ] Accepted [ ] Denied

		Display export attedence	Choosing menu export attedence	When selecting the menu then appears along with the absence of export form export button	[ ] Accepted [ ] Denied
	Menu Lecture	Display master lecture	Select a menu to add the data lecturer	When selecting the menu, the lecturer added show up form along with the plus	[ ] Accepted [ ] Denied
		Import menu display lecturer	Select a menu to import data from excel lecturer	When selecting a menu will appear browse button and upload	[ ] Accepted [ ] Denied
		Export menu display lecturer	Selecting export data menu lecturer	When select the menu will appear along with key faculty export form export.xls	[ ] Accepted [ ] Denied
		Display Menu Lecturer guardian	Selecting a menu guardianship faculty trustee	When selecting the menu will display a form Input Settings Lecturer Guardian accompanied submit button	[ ] Accepted [ ] Denied
	Courses	Display master menu college	Select a menu to add the data subject	When select the menu will bring up the subject of data input form with the plus	[ ] Accepted [ ] Denied
		Import menu display student	Select a menu to add the data through excel file	Select a menu to add the data is through an excel file	[ ] Accepted [ ] Denied
	Guardianship	Schedule menu display all data	Selecting all the data that has been created schedule	When the select menu will display all of the data scheduling ongoing lecture	[ ] Accepted [ ] Denied

		Display the menu and set the class schedule	Select the class and set the schedule	When the class and set the schedule it will bring class data with a button for schedule	[ ] Accepted [ ] Denied
		Display Data menu academic year	Select the Data menu academic year	When select the menu will bring up the Data Settings School Year For Each Force and with the delete button	[ ] Accepted [ ] Denied
		Course selection menu display limit	Select the subject election limit	When select the menu will bring up the Form Setting Boundaries Course Selection with the submit button	[ ] Accepted [ ] Denied
		Class selection menu display limit	Select the class electoral boundaries	When selecting the menu will show Form Setting Deadline for Class Selection accompanied submit button	[ ] Accepted [ ] Denied
		Display menu max limit student / class	Select the max limit student / class	When selecting a menu will display Limit Setting the Maximum Student / Class accompanied sumbit button	[ ] Accepted [ ] Denied
		Display menu classroom	Select the classroom	When selecting the menu will display a Class That be used money in Porgram SI Study with edit and delete buttons	[ ] Accepted [ ] Denied

b. **Tabel 4.10** Cases and Test Results section Lecturer

No	Menu	Test Cases	Scenario Test Item	Expected Results	Testing Results
1	Lecture	Display user Login	Choosing a login form to the user	When you first open the app will bring up the login form to the user	[ ] Accepted [ ] Denied
2	menu teaching	Display teaching menu	Display menu teaching	When selecting the menu list lecturer show what will teach courses	[ ] Accepted [ ] Denied
4	Menu Lecture Lecturer	Display menu faculty trustee	Selecting a menu faculty trustee	When selecting the menu with the menu guardianship of data raises the value and acc history course	[ ] Accepted [ ] Denied
5	Menu Online Class	Display menu online college	Selecting a menu online college	When selecting the menu then will it moves the data class that has created a menu with a list of tasks, materials, announcements, student and delete menu also delete button	[ ] Accepted [ ] Denied

c. **Tabel 4.11** Cases and Test Results section of Students

No	Menu	Test Cases	Scenario Test Item	Expected Results	Testing Results
1	Student	Display user Login	Choosing a login form to the user	When you first open the app will bring up the login form to the user	[ ] Accepted [ ] Denied
2	Menu history Menu history value	History menu display value	Choosing the value history menu	When selecting a menu will appear to teach the history data value of each student	[ ] Accepted [ ] Denied

4	Menu schedule	Display schedule menu	Selecting a menu schedule	When selecting the menu raises schedule data with menu attedence	[ ] Accepted [ ] Denied
	Menu guardianship	Display menu guardianship	Selecting a menu guardianship	When selecting the menu will display the data classes and courses you want to take each semester	[ ] Accepted [ ] Denied
	Menu Class Online	Display menu online college	make your choice menu online college	When selecting the menu will display a list of classes that have been made by the lecturer with a menu entry class	[ ] Accepted [ ] Denied

4.4.1. Conclusion Results of Testing

. Based on test results with sample test cases above, it can be concluded that the software is free of syntax errors and functionally release the results as expected.