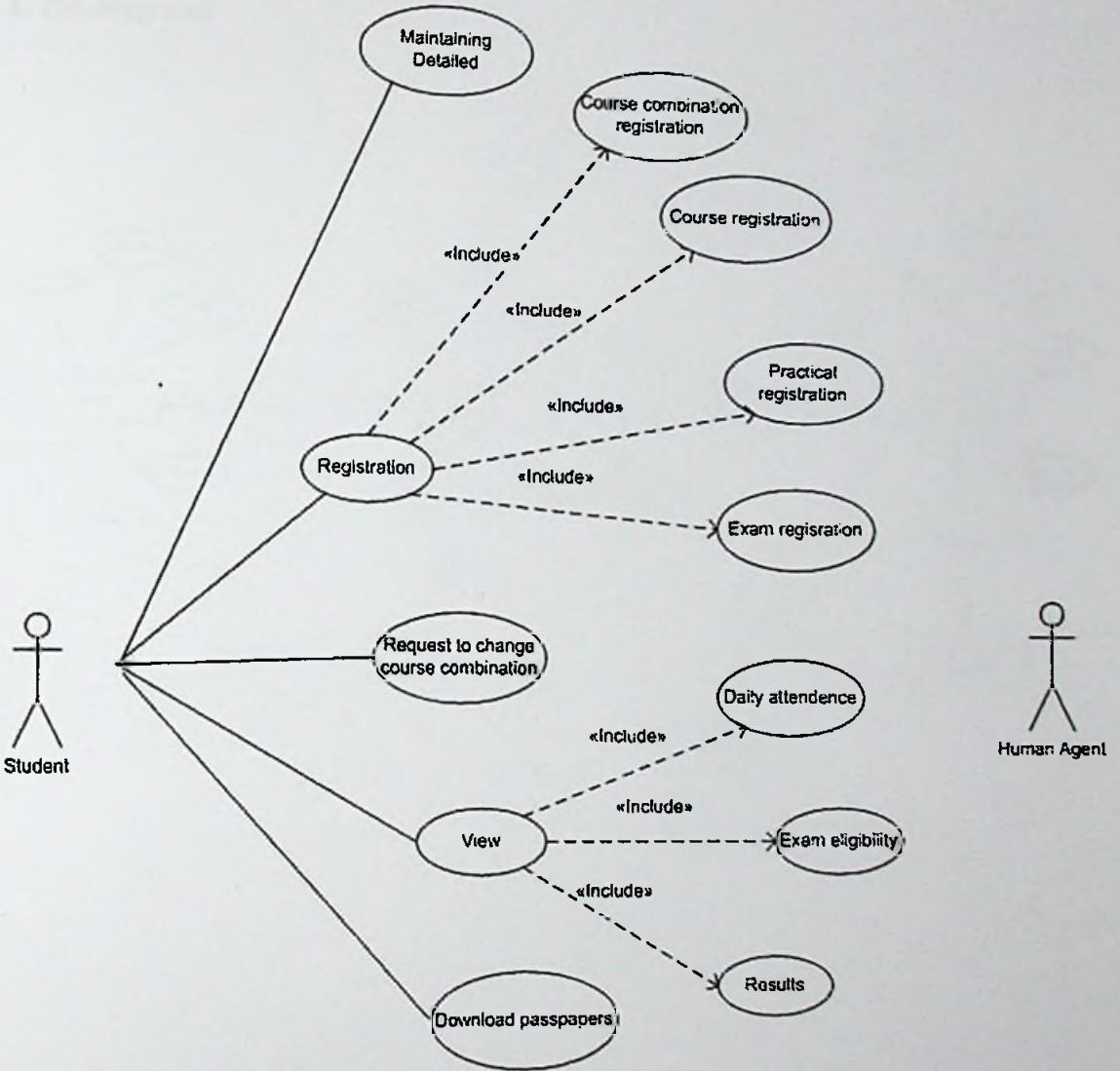# References
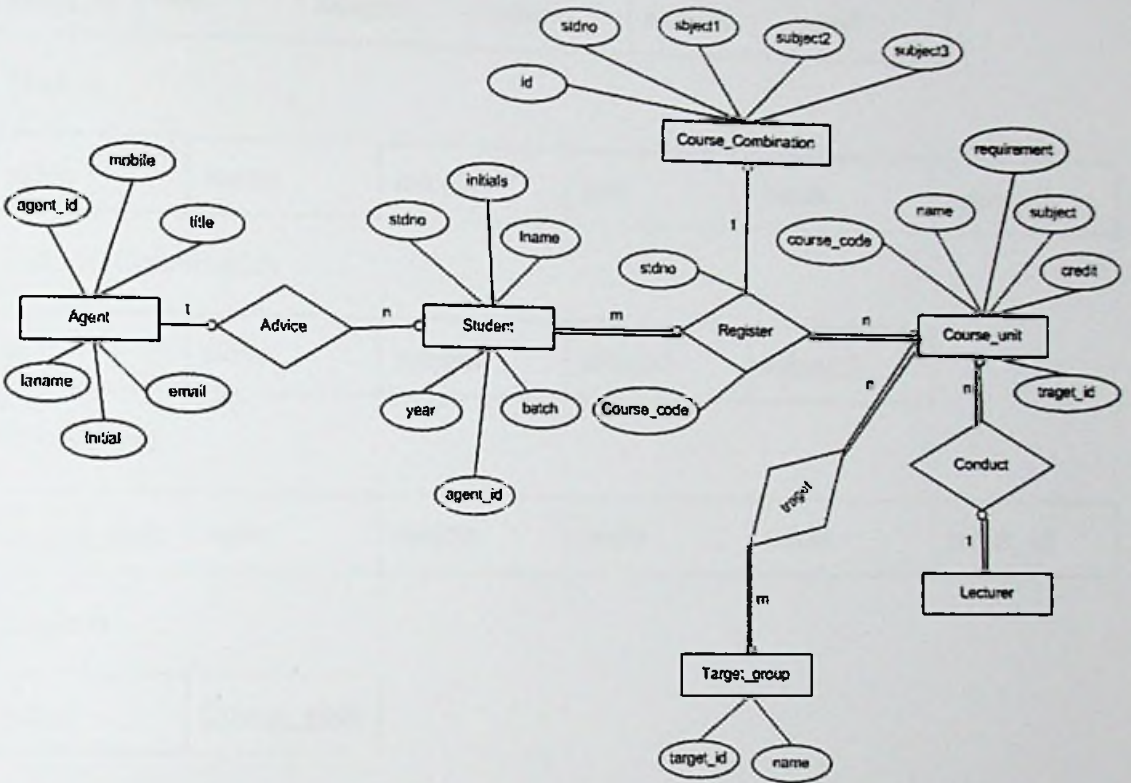
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Appendix A System Design

Use case diagram showing Student and Human Agent actors. Student is connected to: Maintaining Detailed, Registration, Request to change course combination, View, and Download passpapers. Registration includes Course combination registration, Course registration, Practical registration, and Exam regisration. View includes Daily attendence, Exam eligibility, and Results.

Appendix B Database design

1. ER diagrams

2. Database schema

Agent

agent_id	title	laname	initials	mobole	emil

Student

stdno	lname	initials	year	batch	agent_id

Cousse_Combination

id	stdno	subject1	subject1	subject3

Course_unit

course_code	name	subject	credit	credit	target_id

Register

stdno	Course_code

Target_group

target_id	name

Appendix C System appraisal

1. System Appraisal Form (User view)

System Appraisal Form

Online Course Management System for the FHSS, University of Ruhuna

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For office use only

User type:

Administrator ☐   User ☐   Guest ☐

Administrator has system administrative privilege

User has privilege for data entry and notification

Guest has privilege for viewing data

Instructions to fill the form

Please study the system carefully. Select appropriate answer and underline on your satisfaction about the system.

1. Course Management System – Overall Assessment

1.1 User friendliness

a. Very good level   b. Good   c. Normal   c. Not up to expected

1.2 Speed

a. Very good level   b. Good   c. Normal   d. Not up to expected

1.3 Appearance

a. Very good level b. Good c. Normal d. Not up to expected

1.4 Security

a. Very good level b. Good c. Normal d. Not up to expected

2. Course Management System – Subsystems Assessment

2.1 Login operations

a. Very good level b. Good c. Normal d. Not up to expected

2.2 Course menu operations

a. Very good level b. Good c. Normal d. Not up to expected

2.3 Registration menu operations

a. Very good level b. Good c. Normal d. Not up to expected

2.4 Examination menu operations

a. Very good level b. Good c. Normal d. Not up to expected

2.5 Administration menu operations

a. Very good level b. Good c. Normal d. Not up to expected

2.6 Agent details

a. Very good level   b. Good   c. Normal   d. Not up to expected

(Optional)

Name with initials: …………………………………

Designation: …………………………………………

Thank you very much for your cooperation.

2. System Appraisal Results

2.1 System assessment values for Standard user (in percentages)

Overall system assessment		Responses % out of a Sample of 10				
		Very Good	Good	Normal	Not up to the expected level	Total
1	User friendliness	0.0	30.0	70.0	0.0	100.0
2	Speed	70.0	20.0	10.0	0.0	100.0
3	Appearance	20.0	60.0	20.0	0.0	100.0
4	Security	40.0	60.0	0.0	0.0	100.0
Functionalities of subsystems						
1	Access Control	10.0	60.0	30.0	0.0	100.0
2	Student Details	0.0	80.0	20.0	0.0	100.0
3	Course	0.0	60.0	40.0	0.0	100.0

4	Registration	10.0	70.0	20.0	0.0	100.0
5	Examination	20.0	60.0	20.0	0.0	100.0
6	Administration	40.0	50.0	10.0	0.0	100.0
7	Agent	10.0	40.0	50.0	0.0	100.0

Legend:
- User friendliness
- Speed
- Appearance
- Security

Legend:
- Access Control
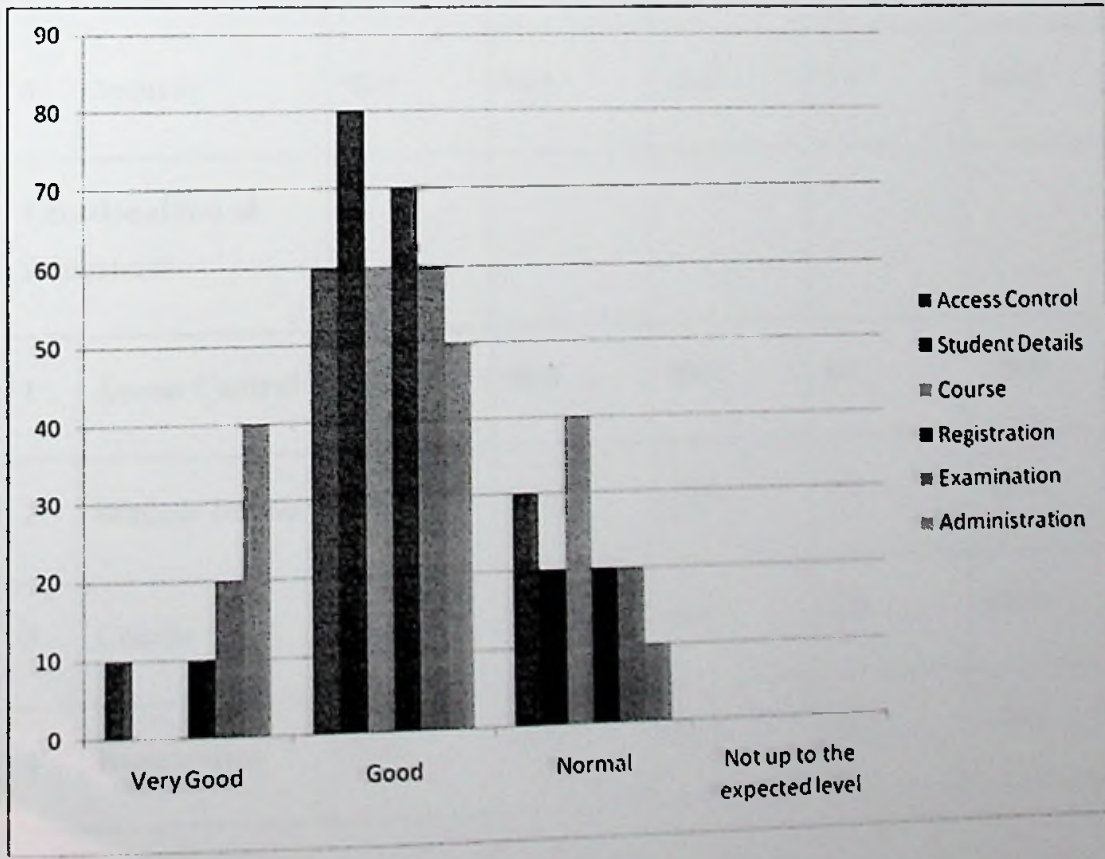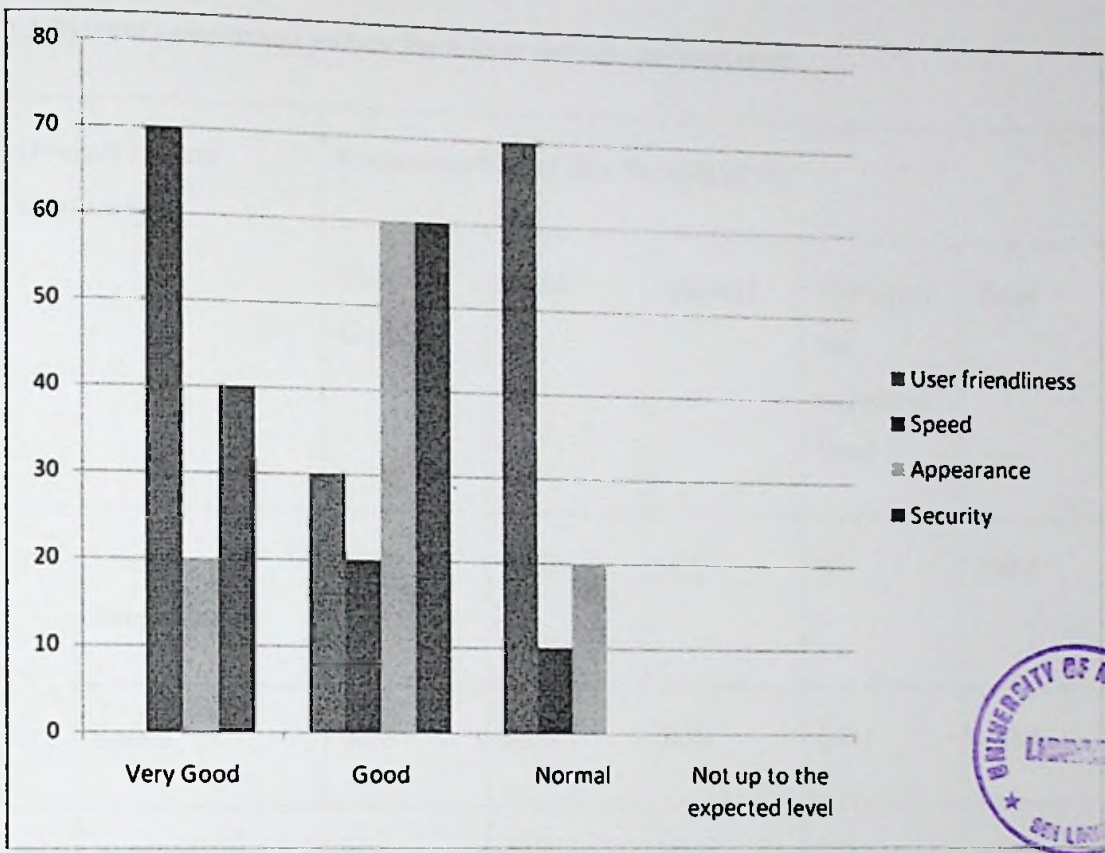- Student Details
- Course
- Registration
- Examination
- Administration

2.2 System assessment values for Guest user (in percentages)

Overall system assessment		Responses % out of a Sample of 10				
		Very Good	Good	Normal	Not up to the expected level	Total
1	User friendliness	10.0	30.0	60.0	0.0	100.0
2	Speed	60.0	20.0	20.0	0.0	100.0
3	Appearance	30.0	50.0	20.0	0.0	100.0
4	Security	50.0	40.0	10.0	0.0	100.0
Functionalities of subsystems						
1	Access Control	10.0	50.0	40.0	0.0	100.0
2	Student Details	10.0	70.0	20.0	0.0	100.0
3	Course	20.0	50.0	30.0	0.0	100.0
4	Registration	20.0	60.0	20.0	0.0	100.0

5	Examination	30.0	50.0	20.0	0.0	100.0
6	Administration	25.0	50.0	25.0	0.0	100.0
7	Agent	20.0	30.0	30.0	0.0	100.0
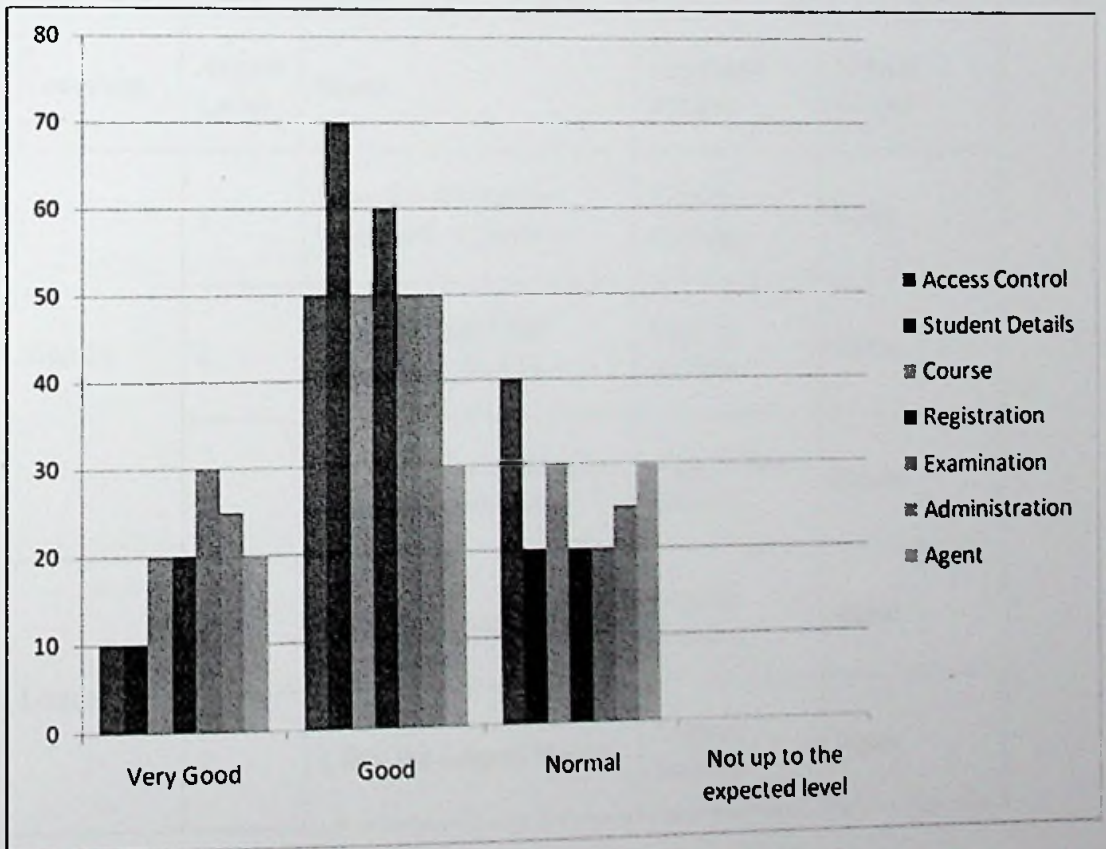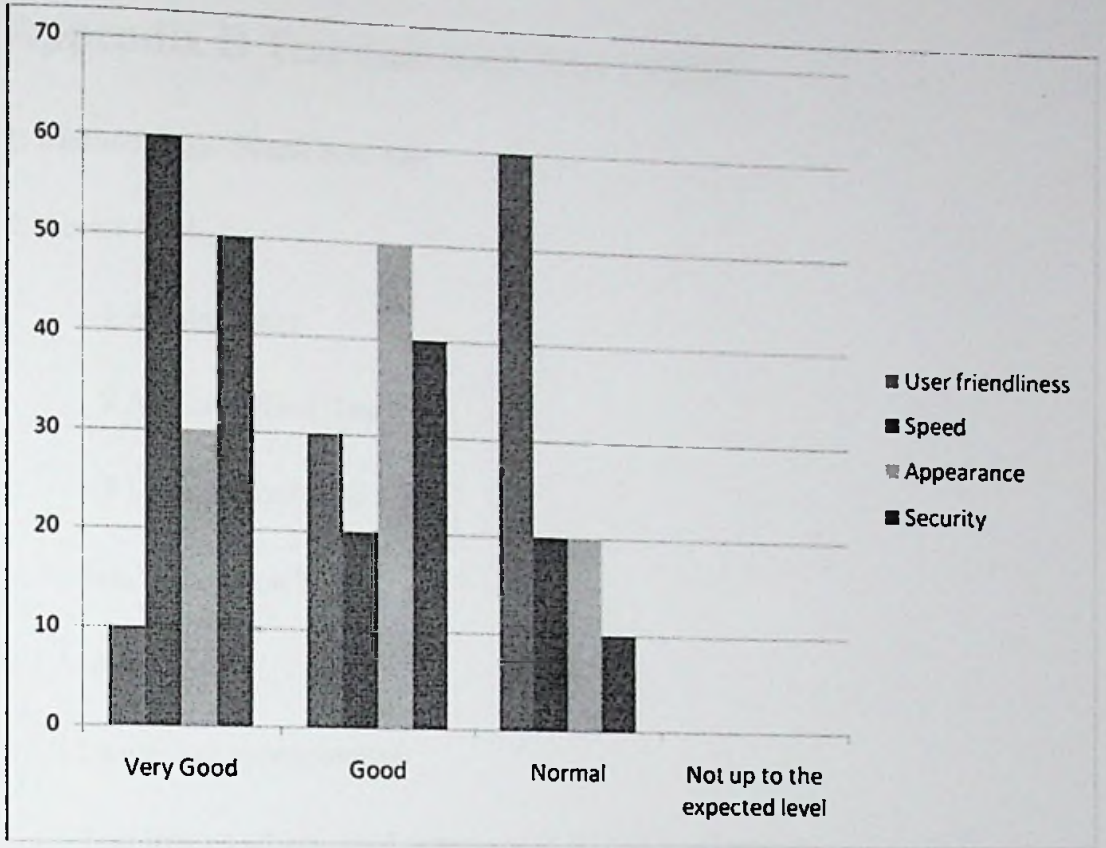
Appendix D Test case and Test results

1. Methodology: Black Box Test

2. Access level:

    1 Administrator

    2 All Authorized Users

    3 Unauthorized users

3. System/Subsystem Testing

3.1 Access Control

3.1.1 Usage: For access control.

3.1.2 Test items and expected outcomes of the login subsystem

Test Item	Access Level	Input	Expected output	Actual output
Sign In	1	User ID: Priyankara Password: 123456	Sign in success	Same
	2	User ID: HS13500 Password: 123456	Sign in success	Same
	3	User ID: Unsigned name Password: any string	Sign in Not success	Same
Logout	1	Click the Logout button	Logout success	Same
	2	Click the Logout button	Logout success	Same

Test Item		Access Level	Input	Expected output	Actual output
	3		Click the Logout button	Logout success	Same
Change Password	1		Replace current password by new one	Chained password successfully	Same
	2		Replace current password by new one	Chained password successfully	Same
	3		Replace current password by new one	Chained password successfully	Same

3.2 Student Profile

3.2.1 Usage: Maintaining student information throughout undergraduate period.

3.2.2 Test items and expected outcomes of the registration subsystem

Test Item	Access Level	Input	Expected output	Actual output
Add information	2	Add new information	Added information successfully	Same
Modify information	2	Change previous information	Modified successfully	Same

3.3 Course

3.3.1 Usage: For data enter, editing and accessing course details.

3.3.2 Test items and expected outcomes of the course subsystem

Test Item	Access Level	Input	Expected output	Actual output
Add course	2	Add new course	Added successfully	Same
Modify Course	2	change available course information	Modified successfully	Same
View Course Information	2	Click view course information	Viewed course information successfully	Same
Add Course Attendance	2	Add attendance	Added attendance successfully	Same
Modify Course Attendance	2	Change available course attendance	Modified successfully	Same
View Daily Attendance	2	Click view daily attendance	Viewed attendance successfully	Same
Print Attendance	2	Click print attendance sheet	Printed successfully	Same

Sheet				
Download Pass Papers	2	Click download pass papers	Downloaded successfully	Same

3.4 Registration

3.4.1 Usage: Handling all registration such as course combinations, courses, examinations .

3.4.2 Test items and expected outcomes of the registration subsystem

Test Item	Access Level	Input	Expected output	Actual output
Call Course Combination Registration	2	Submit relevant information	Called course combination successfully	Same
Call Course Registration	2	Submit relevant information	Called course successfully	Same
Call Exam Registration	2	Submit relevant information	Called exam successfully	Same
Course Registration	2	Register relevant courses	Registered successfully	Same

Confirm Course Registration	2	Confirm relevant courses	Confirmed successfully	Same
Change Course Combination	2	Change course combination	Changed course combination successfully	Same

3.5 Examination

3.5.1 Usage: Maintaining student performance at examinations and handling exam related tasks.

3.5.2 Test items and expected outcomes of the registration subsystem

Test Item	Access Level	Input	Expected output	Actual output
Add Results	2	Add result from MS Excel file	Added results successfully	Same
Modify Results	2	Modify available results	Modified results successfully	Same
Check Eligibility	2	Click check eligibility	Checked eligibility	Same

			successfully	
View Results	2	Click view results	Viewed results successfully	Same

3.6 Administration

3.6.1 Usage: Administering relevant functionalities throughout the OCMS of the FHSS.

3.6.2 Test items and expected outcomes of the registration subsystem

Test Item	Access Level	Input	Expected output	Actual output
Manage Academic Sessions	2	Submit relevant information	Managed successfully	Same
Manage Announcements	2	Submit relevant information	Managed successfully	Same
Create Time table	2	Submit relevant information	Created time table successfully	Same
Create Practical Sessions	2	Submit relevant information	Created practical sessions successfully	Same

Appendix E Software Installation Guide and User Manual

1. Introduction

This web based CMS is suitable for Internet environment. Using this system user can all the activities fictionalized for the system. This system can be installed manually on Windows and Linux environment.

2. Manual Installation

For manual installation, Apache, MySQL, and PHP installation should be completed before install CMS of the FHSS. Then copy "fhssocms" folder of the given CD to document root of the Apache server. Find user name, password and database name located in connection/connection.php. Using this details create faculty database. Create university database called "ruhunadb". Import ruhunadb.sql file into ruhunadb and import facultydb.sql file into your faculty database.

3. Grant privileges

Grant all privileges on ruhunadb.role to 'yourdbusername'@localhost identified by 'yourdbpwd'. Grant all privileges on rumisdb.[yourfoldername] to 'yourdbusername'@localhost identified by 'yourdbpwd'

4. User Manual of the FHSSOCMS

After installation complete, you can open CMS home page by typing relevant URL in any Internet Browser such as IE, Firefox. Home page file name index.php, which is at the myweb folder of your Apache document root. Details of each subsystem/menu are given below

4.1 Access Control System

4.1.1 Create and Remove user accounts

Administrator should be this using SQL commands. System does not support for this process.

4.1.2 Sign in

System access is given only to registered users. To obtain valid User ID and Password, please contact Administrator

Administrator User ID: admin

Password: 123456

4.1.2 Change password

Any user who has access perdition can change current password by new one.

4.1.3 Logout

4.2 Course subsystem/menu

This menu allows creating a course. Once you create course using create course menu. System will allow you to create time table. For the security reason, it is necessary to create timetable by the user who create the course (Course owner)