

Chapter 07: Conclusion and Recommendations

Topics Covered through the Chapter

- 7.1 Introduction
- 7.2 Project Result Overview
 - 7.2.1 Lessons Learnt Via the Accomplishment of Project Objectives
- 7.3 Recommendations Related to the System
- 7.4 Further Enhancement
- 7.5 Project Conclusion
- 7.6 Summary

7.1 Introduction

This chapter provides overview about the project outcomes, achievements during the project. Future enhancement which merges with the project is also taken into consideration under this chapter.

7.2 Project Result Overview

The successfulness of achieving the aim relies on the successfulness of achieving the objectives of the system. Accessing the objectives in the development is helpful in getting the real time experience in system development which is expedient to students as undergraduates in B.Sc. in ICT.

7.2.1 Lessons Learnt Via the Accomplishment of Project Objectives

This session emphasize the learning outcomes of the project against the project objectives. (Table 15)

Objectives	Lessons Learnt
<ul style="list-style-type: none">Planning the system domain.	<ul style="list-style-type: none">Designing the scope of the system is important in system development.Gather knowledge of conducting the strategic study and the business study on the development.
<ul style="list-style-type: none">Identify the data collection protocols for the requirement gathering and proceed with requirement gathering.	<ul style="list-style-type: none">Get the knowledge of identifying the most appropriate data collection protocols according to the domain identified. E.g.: Student Registration is a process which is handled by the hierarchies of the university. Therefore priority is given to interviews in data collecting processes.Process of Requirement gathering outcomes the followings<ul style="list-style-type: none">Works according to the schedules.Information acquiring ability develops.Improved the communication skills.

	<ul style="list-style-type: none"> – Ability to adopt on different situations. – Able to get knowledge on conducting accurate requirement gathering protocols. <p>E.g.: Questionnaires were corrected several times to originate with the actual standard of a questionnaire.</p>
<ul style="list-style-type: none"> • Analyzing the data gathered. 	<p>Able to get the following outcomes,</p> <ul style="list-style-type: none"> • Problem solving ability. • Analytical Skills developed. • Decision taking ability develops. • Ability to handle with miniature specification methods such as flow charts, pseudo codes, structured diagrams.
<ul style="list-style-type: none"> • Identifying and design the modules of the proposed system. 	<ul style="list-style-type: none"> • Design phase enabled to gain experience on deriving important data and categorizing them into modules. • Ability to handle with miniature specification methods such as flow charts, pseudo codes, structured diagrams. • Another good experience had is how far the design theories come into practice on real environment. <p>E.g.: In situations such as design of databases using normalization techniques, theories were tend to make the system more complicated but also helped to identify the attributes, primary keys and foreign keys.</p>
<ul style="list-style-type: none"> • Evaluation of the designed modules of the system. 	<ul style="list-style-type: none"> • Acquire knowledge about several development technologies. <p>E.g.: Gain knowledge about development language, identified tools available.</p>
<ul style="list-style-type: none"> • Implementation of the registration and requirement system for KDU. 	<ul style="list-style-type: none"> • Ability to handle the issues in the development. (Error handling)

	<ul style="list-style-type: none"> • Identification of the relevant testing level and proceed with testing the system.
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Table 15 : Accomplishment of Project Objectives
Source: Author

7.3 Recommendations Related to the System

Identified recommendations are exists with the implemented system of ASRS. Recommendations are being identified as the improvements that the implemented system may have in future. The implemented system will be more productive and efficient with the following recommendations.

- Enabling online payment module.

Implementation of Payment gateway will be an added advantage for the candidate students to pay the application fee as well as the selected students to proceed with their course payments.

This module enables more secure server to be connected with the ASRS and the payment can be done via the created account in secure. System accuracy, efficiency increases with the recommended module implementation allowing the users of the system to proceed with application submission and recruitment in a more convenient way with the busy time schedules of them.

- Enhancing the system to so that the non-selected students will be getting e-mail alerts on new enrolments.

Students who are unable to be selected for the courses are proposed receive e-mail alerts on future enrolments to the university.

- Enabling SMS Notification System

Implementation of a SMS system will be added advantage for all Students who are willing to join with KDU. It resulted in achieving more user interaction to KDU. Students can be readily updated by the alerts through the SMS.

- Implementing an Aneroid app that merges with the development.

7.4 Further Enhancement

Further enhancement proposed on the system will expand the achieved scope of the development. Following are identified as the further enhancement to be attached to the implemented system of ASRS.

- Expanding the system up to recruitment of lecturers and other employments such as lab assistants and network administrators.
- Merging the developed system with Human Recourse Management system so that the inquiries regarding both the domains can be answered easily.
- Merging the system with Profile Management System so that the details about the selected candidates are available at any time at the inquiries.
- Enhancing the system application submission up to the postgraduate, certificate and diploma levels.

7.5 Project Conclusion

Application submission and recruitment system is a major task conducted by the registrar office of KDU. Current process includes manual application submission. Managing and processing the submitted applications is also conducted manually. The drawbacks identified in the current system of application submission leads to a proposed solution of online application submission and recruitment system to KDU.

There are two types of users of the system who are directly beneficial with the system implementation. Candidates who are applying to the university and the administrative staff who engage with the application management are the above mention user types. Candidates are benefited with easiness in applying to the university while the administrative staff engaged with the application processing and management is beneficial with the effective mode of carrying out their processes.

Entire project process concludes an effective development of an online application submission and recruitment system to KDU.

7.6 Summary

This chapter concludes the overall idea of the system development. Entire overview of the result of the project was elaborated through mentioning of the learning experience taken throughout the project development with respect to the objectives.

The project conducted under IT4082 module is a group project where a group of students working for a common goal for a time period of eight months. Therefore good communication skills in between the members and unity among them are imperative to achieve one goal with scheduled limited period of time. These qualities cannot be gain only by an individual project.

Accessing the objectives in the development is helpful in getting the real time experience in system development which is expedient to students as undergraduates in B.Sc. in ICT. And also the periodic documentation provided throughout the development enhances the documentation skills. IT 4082 module is beneficial for sharpening our future carrier in all the system development aspects.

Furthermore, this chapter includes recommendations for the implemented system of ASRS in order to increase the productivity and performance.

References

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National School of Business Management. 2013. *National School of Business Management*. [ONLINE] Available at: http://www.nsbm.lk/target_mgt.php?eid=onlineregister. [Accessed 29 December 2013].

Appendix A

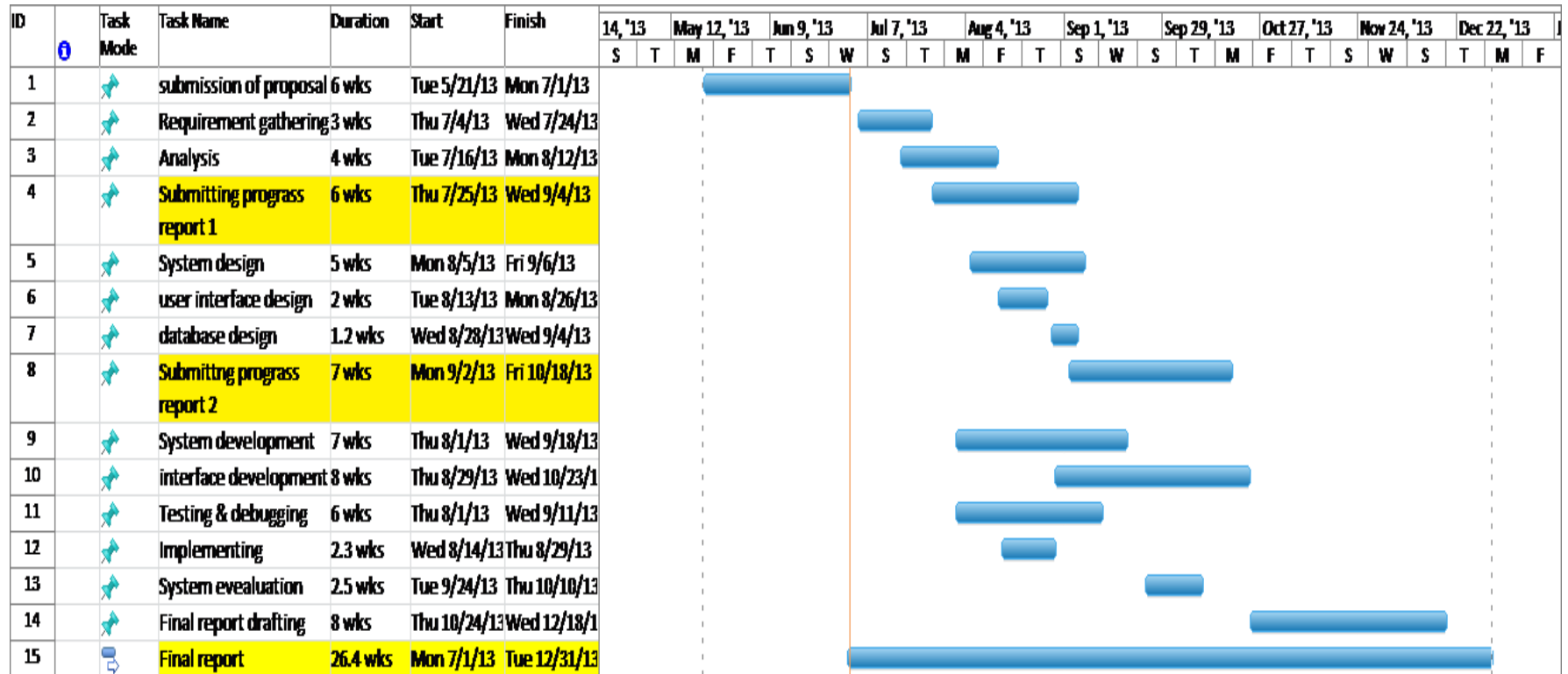


Figure 62 : Appendix A- Time Plan (Pre Plan)
Source: Author

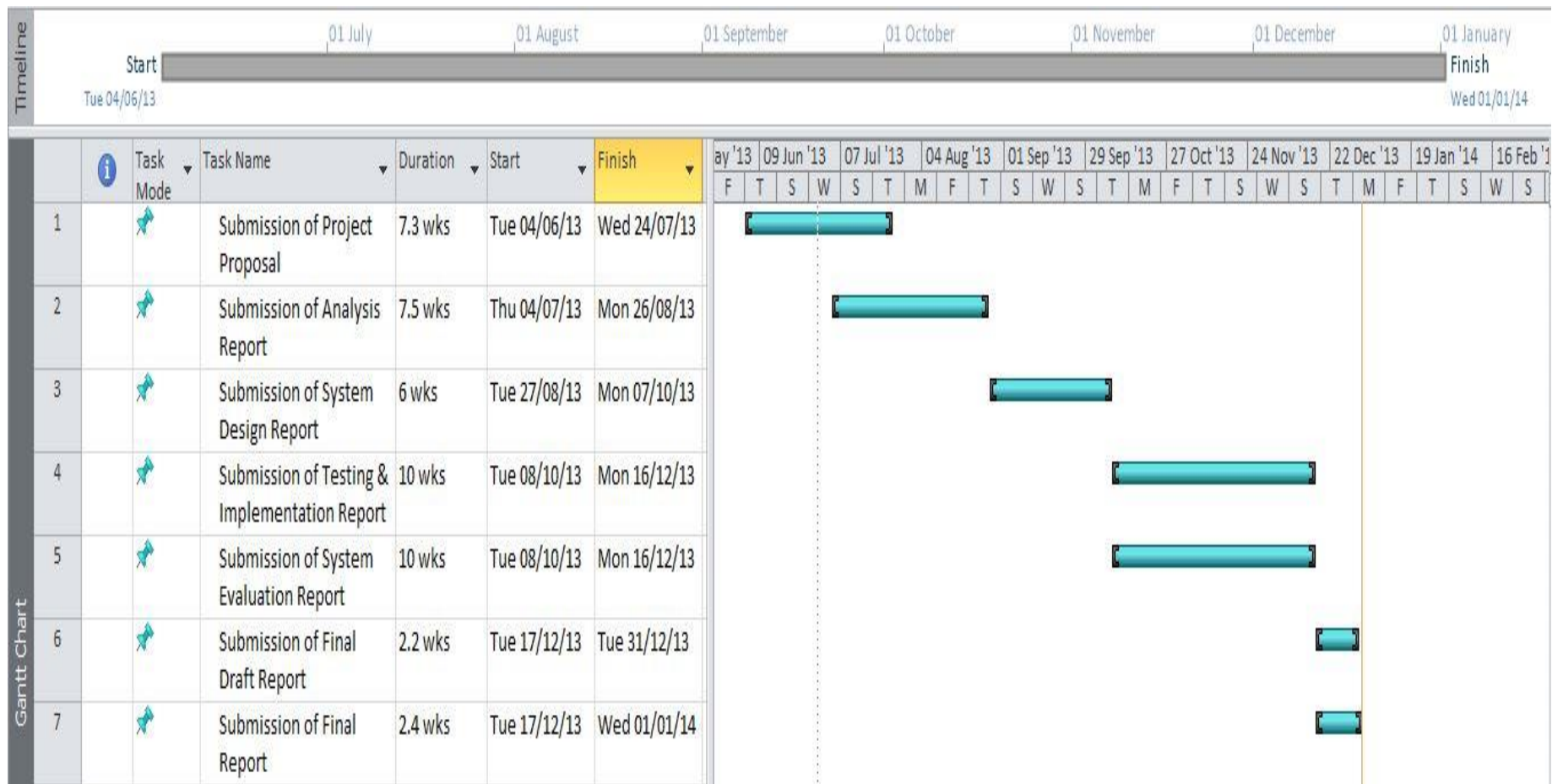


Figure 63 : Appendix A- Time Plan (Actual Plan)
Source: Author

Milestone	Time Span		Causes for alteration and the nature of alteration
Introduction and overview	Planned Start Date	4-6-2013	Identified this milestone as one of great importance because it basic foundation for the whole project. This milestone give out with details found in project proposal, the reporter managed to complete this phase in one week. The reporter succeeded to further enhance this chapter following the instruction of the supervisor.
	Planned End Date	12-6-2013	
	Actual Start Date	4-6-2013	
	Actual End Date	12-6-2013	
Reviewing the related literatures	Planned Start Date	14-6-2013	As the previous milestone was reached in due time, this phase could be started with in time. All sources of literature including online sources were retrieved without any major difficulties. In retrieving distant sources minor obstacles were opposed yet the reporter managed to avoid them within the agreed period.
	Planned End Date	6-24-2011	
	Actual Start Date	6-14-2013	
	Actual End Date	7-1-2013	
Designing the research and data collection	Planned Start Date	7-2-2013	<p>This phase too was begun as the allocated period. The spent extensive amount of time allocated for this phase in selecting appropriate report tools, assigning and formative sample and frame sizes to suit the demands of the report.</p> <p>For the duration of the data collection depending on practical needs, the research tools were further developed to best of results.</p> <p>So that the reporter could spend more time on report work enabling him to compete the phase four days in extent regardless of the early delays.</p>
	Planned End Date	8-1-2013	
	Actual Start Date	7-2-2013	
	Actual End Date	8-5-2013	
Testing and implementation	Planned Start Date	8-6-2013	<p>This phase was started the originally scheduled date. The testing method and implementation phases were identified and reduce the errors according to the run time.</p> <p>In some delays during the documentation phase. by the testing and implementation, this phase could not was completed ahead of time.</p>
	Planned End Date	10-6-2013	
	Actual Start Date	8-6-2013	
	Actual End Date	10-6-2013	

Evaluating the system outcome and practice	Planned Start Date	10-7-2013	To complete the final draft as several modifications were made to the document following the feedback received. As with previous chapters, the chapter was completed well in advance of the planned deadline.
	Planned End Date	11-7-2013	
	Actual Start Date	10-7-2013	
	Actual End Date	11-7-2013	
Summarizing and making recommendations	Planned Start Date	11-8-2013	This phase too reveal in a honestly flexible timeline and the final documentation took sometime but that did not result in major delays.
	Planned End Date	11-15-2013	
	Actual Start Date	11-8-2013	
	Actual End Date	11-15-2013	
Preparing final report	Planned Start Date	12-14-2013	Since finalizing first few chapters took sometimes, the preparation of the final research report by combining individual final drafts of completed chapters was stated with a date. Even with these imperativeness the final report was completed on the due date.
	Planned End Date	12-31-2013	
	Actual Start Date	12-14-2013	
	Actual End Date	1-1-2014	

Table 16 : Appendix A- Time Plan Description
Source: Author

Appendix B

Interview Questions

1. What is the procedure of selecting postgraduate cadet students to KDU?
 - Three consecutive Selection Phases.
 - 1st Phase-Interview- Checking the Certificates. (Results will informed to the candidate at evening)
 - 2nd Phase-Aptitude Test -Checking General Knowledge. (Results will informed to the candidate at evening)
 - 3rd Phase-Physical Test.

2. What are the criteria in selecting cadet officers to KDU? Is there any shortlisting points?
 - Minimum Qualification- University Entrance “YES”
 - Height>160cm
 - And also there are margins in weight, chest. (Physical Condition)
 - Check the Z-score

3. Is there are any other courses afford by KDU rather than the undergraduate degree programs?
 - Postgraduate
 - Certificate
 - Diploma

4. What are the postgraduate courses afford by the university?
 - Master of philosophy/Doctor of philosophy
 - Master of Law
 - Master of Business Administration in e governance
 - MSc degree in management
 - MSc degree in military science and Technology
 - Master of business administration in logistic management

5. Are you going to inform students about the rejection after initial selection?
 - Will not inform for the students who have disqualified after the initial shortlisting.
 - Informing will be when it is disqualified after the interview or aptitude test.
6. What is the procedure of selecting undergraduate foreign officer cadet?

They will be nominated by the embassy of that particular country. Most probably the students are nominated from Bangladesh, Maldives.
7. What is the minimum duration of application keeping?
 - 4-5 years
8. Explain the procedure of interviewing students who have applied as certificate course or diploma course?
9. How the lecturers are being enroll with the university?
10. Are you looking for the minimum requirements in recruiting nominees?
11. Procedure of selecting postgraduate students?
12. Are you going to mention the students about their rejection after the interview process?
13. Are you going to ask for the candidate students if they are unable to come to the recruitment even after selection?

Questionnaire Provided

Analysis of Data Gathered: Questionnaires

- g. What are the peak hours you have identified in regards to the process of application submission and recruitment (**Months** where most of the applications are submitted) ?

Application processing is having identified different stages. Several quartiles of the year is having peak state in application processing while other quartiles is having less amount of applications to be processed. Intended ASRS users are getting more workload on those peak months in the categorization of application, summarizing the applications, allocating date and conducting the interviews, entering marks, finalizing the selections and in report generation.

Following chart illustrates the variation in application processing in a particular year.

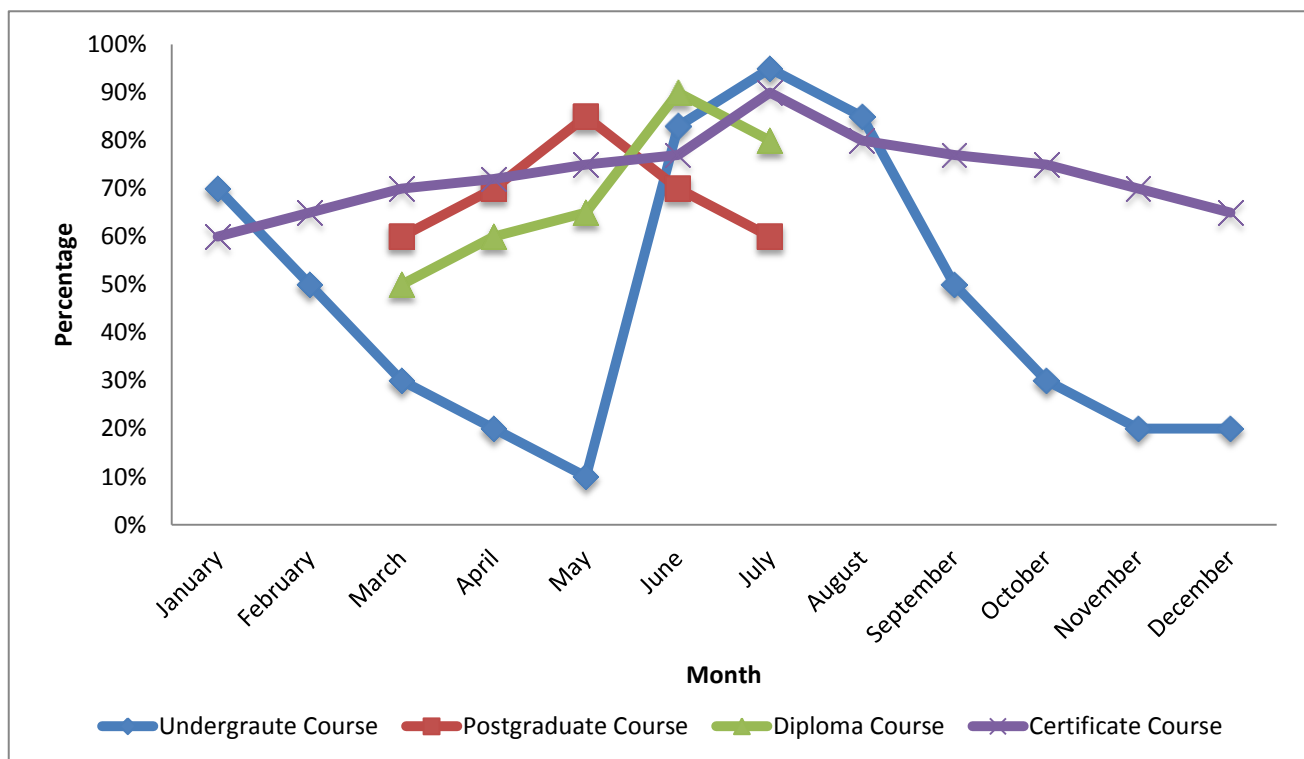


Figure 64 : Appendix B-Peak Months in Application Processing
Source: Author

Productivity and the Accuracy of the Data Collection Protocols: Interviews

c. Interview No :03

Interview No: 03	Objectives
<u>Pre Plan</u> Client : Deputy Registrar Date : 2013-07-29 Venue : DR OFFICE	<ul style="list-style-type: none">- Procedure of the Allied Health Science student recruitment.- Procedure of the payment basis students for other undergraduate degree programs.
<u>Actual Plan</u> Client : Assistant Registrar Date : 2013-07-29 Venue : Assistant Registrar Office	<ul style="list-style-type: none">- Details of the Allied Health Science student recruitment.- Get the details payment basis students.

Table 17 : Appendix B- Interview No: 03
Source: Author

Comment: Information about the Payment Basis students and Allied Health science students are controlled under the Assistant Registrar Office. But our pre-planned client was the deputy registrar.

d. Interview No :04

Interview No: 04	Objectives
<u>Pre Plan</u> Client : Deputy Registrar Date : 2013-08-02 Venue : DR OFFICE	<ul style="list-style-type: none">- Procedure regarding the students who are selected for courses by the nomination of Police.- Details about the students registering under KDU at Maldives.- Selection procedure of the cadet officers.- Selection procedure of the foreign payment basis students.
<u>Actual Plan</u> Client : Deputy Registrar Date : 2013-08-02 Venue : DR OFFICE	<ul style="list-style-type: none">- Able to know the procedure with minimum requirement that nominators should possess.- Able to know the foreign payment basis enrolment process.- Get the details about the Maldivian student recruitment procedure.- Get to know that aptitude test is included in the set of interviews that office cadets

	have to face.
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Table 18 : Appendix B- Interview No: 04
Source: Author

Appendix C

Table Structures with Values

LOGIN		
Attribute	Data type	Length
User ID	Varchar	20
Username	Varchar	30
Timestamp	int	11
Password	Char	20
E-mail	Varchar	50
IP	Varchar	15

Candidates		
Attribute	Data type	Length
Application_No	Int	20
Year	Date	-
Name	Varchar	50
DOB	Date	-
Residential Address	Varchar	80
Civil States	Boolean	-
E-mail	Char	30
Sex	Boolean	-
Citizenship	Varchar	20
Age	Int	2
Member_ID	Int	20

Graduate Students		
Attribute	Data type	Length
Application_No	Int	20
Year	Date	-
NIC	Char	10
Office_Address	Varchar	80

Office_E-mail	Char	30
Office_Contact	Char	12
Educational Qualification	Varchar	255
Professional_Qualification	Varchar	255

Foreign Students		
Attribute	Data type	Length
Application_No	Int	20
Year	Date	-
Passport_No	Varchar	20
Programme	Varchar	50
Nationality	Varchar	20
Educational	Varchar	255
Proof Documents	-	-
Mother_Details	Varchar	255
Father_Details	Varchar	255

Course Categories

- Certificate Courses
 - Certificate Program in Management
 - Certificate Program in Human Resource Management
 - Certificate Program in English
 - Certificate Program in Information Technology
 - Certificate Program in Geo Informatics for Resource Planning and Management
- Diploma Courses
 - Diploma in Financial Management and Procurement
 - Diploma in Human Resource Management
 - Diploma in English
 - Diploma in Information Technology

- Undergraduate Course
 - Faculty of Engineering
 - BSc in Aeronautical Engineering
 - BSc in Aircraft Maintenance
 - BSc in Bio Medical Engineering
 - BSc in Civil Engineering
 - BSc in Electrical Engineering
 - BSc in Electronic and Telecommunication Engineering
 - BSc in Marine Engineering
 - BSc in Mechanical Engineering
 - BSc in Mechatronic Engineering
 - BSc in ICT
 - BSc in CS
 - Faculty of Law
 - BSc in Law
 - Faculty of Management
 - BSc in Social Sciences and Humanity
 - BSc in Management
 - BSc in Logistic Management

- Postgraduate Courses
 - Master of Philosophy / Doctor of Philosophy
 - Master of Law
 - Master of Business Administration in E-Governance gif new
 - Master of Business Administration in Logistic Management
 - MSc Degree in Management
 - MSc Degree in Military Science and Technology
 - Postgraduate Diploma in Research Methods and Allied Aspects

Appendix D

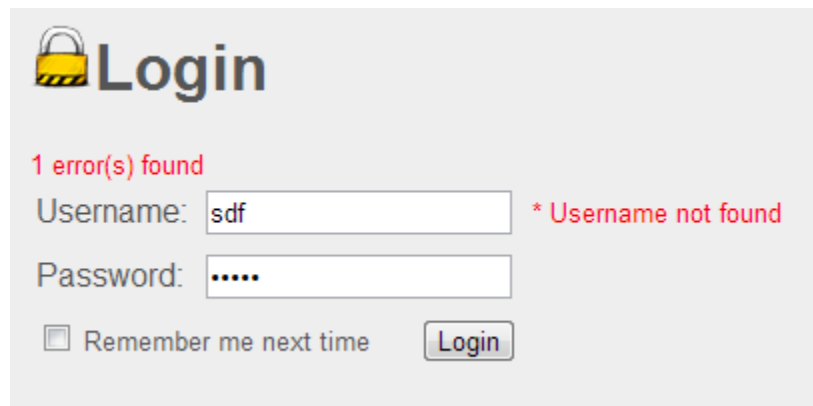
Test logs

Test Case: User Authentication Module

Description: Test users are given the valid user name and password. User Authentication Module must validate the users and direct to the relevant pages.

Test Data:

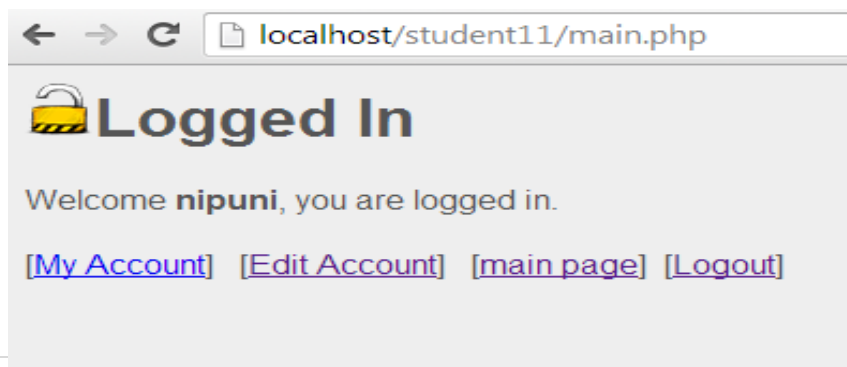
1. Enter invalid username and password.



The screenshot shows a web form titled "Login" with a padlock icon. Below the title, a red error message states "1 error(s) found". The "Username:" field contains the text "sdf", and a red asterisk followed by "Username not found" is displayed to its right. The "Password:" field contains five dots. At the bottom, there is a checkbox labeled "Remember me next time" and a "Login" button.

Test Result: Successfully received the expected error message.

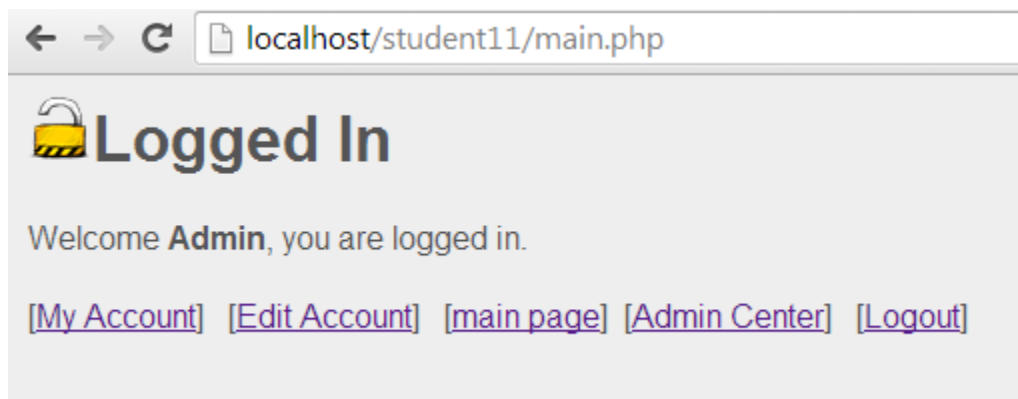
2. Enter valid username and password. (Candidate User)



The screenshot shows a web browser window with the address bar displaying "localhost/student11/main.php". The page content is titled "Logged In" with a padlock icon. Below the title, it says "Welcome nipuni, you are logged in." and provides four links: "[My Account]", "[Edit Account]", "[main page]", and "[Logout]".

Test Result: Successfully log to the relevant page for the candidate user.

3. Enter valid username and password. (Admin User)



Test Result: Successfully log to the relevant page for the admin user.




4. Try to register a user with a given username.

A screenshot of a web form titled 'Register' with a person icon. Below the title, it says '1 error(s) found'. There are three input fields: 'Username:' with the value 'sahan', 'Password:' with masked characters '....', and 'Email:' with the value 'wsr@yahoo.com'. To the right of the 'Username' field, there is a red error message: '* Username already in use'. Below the input fields is a 'Register!' button. At the bottom, there is a link: 'Back to Login page'.

Test Result: Successfully receive the message.

5. Invalid Format of E-mail given with invalid password.

2 error(s) found

	Current Password:	<input type="password" value=".."/>	* Current Password incorrect
	New Password:	<input type="password" value="...."/>	
	Email:	<input type="text" value="sdfq@"/>	* Email invalid

6. Register a user.

Warning: mail() [\[function.mail\]](#): Failed to connect to mailserver at "localhost" port 25, verify your "SMTP" and "smtp_port" setting in php.ini or use ini_set() in C:\xampp\htdocs\student11\include\mailer.php on line 38

Warning: Cannot modify header information - headers already sent by (output started at C:\xampp\htdocs\student11\include\mailer.php:38) in C:\xampp\htdocs\student11\process.php on line 104

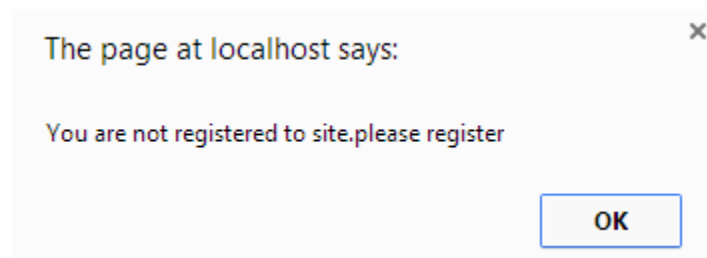
Test Result: Error occurred to due to server usage. Although the error message appears the user is registered.

Test Case: Application Submission Module

Description: Application must be submitted only if the users are registered to the system only.

Test Data:

1. Try to apply to as a candidate without registering.



Test Result: Successfully received the message.

Test Case: User Management Module

Description: User management includes updating and deleting the user.

Test Data:

1. Update the user levels and giving permission to view the required pages.

Users Table Contents:

Username	Level	Email	Last Active
Admin	9	sahanepa@gmail.com	1387782895
brian	5	pp@gmail.com	1387781741
sahan	5	sahanepa@gmail.com	1384248288
tyrant	5	sahan66@ymail.com	1387781412

Details of all admin users

Users Table Contents:

Username	Level	Email	Last Active
Admin	9	sahanepa@gmail.com	1387782940
sahan	9	sahanepa@gmail.com	1384248288
brian	5	pp@gmail.com	1387781741
tyrant	5	sahan66@ymail.com	1387781412

Details of all admin users after updating the levels

Test Result: Successfully updated the user levels.

2. Delete the users.

Users Table Contents:

Username	Level	Email	Last Active
Admin	9	sahanepa@gmail.com	1387782971
sahan	9	sahanepa@gmail.com	1384248288
tyrant	5	sahan66@ymail.com	1387781412

Details of all admin users after deleting the users

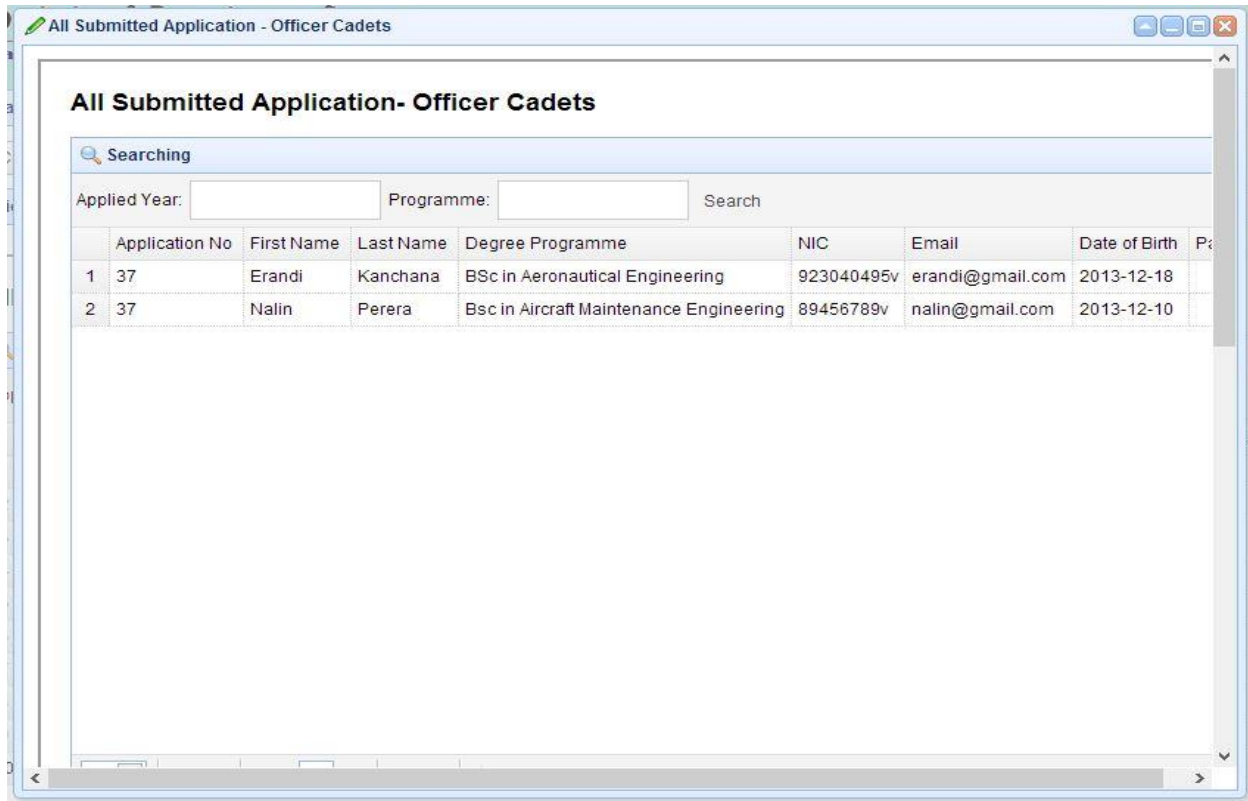
Test Result: Successfully deleted the users.

Test Case: Application Management Module

Description: Admin users are given the ability to manage the application with shortlisting and searching functions.

Test Data:

1. Enter the searching Year.



The screenshot shows a web application window titled "All Submitted Application - Officer Cadets". Inside the window, there is a section titled "All Submitted Application- Officer Cadets" with a "Searching" sub-header. Below this, there are input fields for "Applied Year:" and "Programme:", followed by a "Search" button. A table displays the search results with the following columns: Application No, First Name, Last Name, Degree Programme, NIC, Email, Date of Birth, and P. The table contains two rows of data:

	Application No	First Name	Last Name	Degree Programme	NIC	Email	Date of Birth	P
1	37	Erandi	Kanchana	BSc in Aeronautical Engineering	923040495v	erandi@gmail.com	2013-12-18	
2	37	Nalin	Perera	Bsc in Aircraft Maintenance Engineering	89456789v	nalini@gmail.com	2013-12-10	

Test Result: Successfully details were retrieved.

Installation Guide

1. Install server 2008

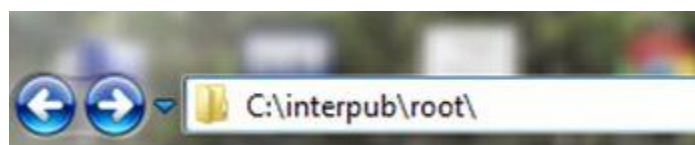


2. Install iis 7(latest version) on windows server 2008.

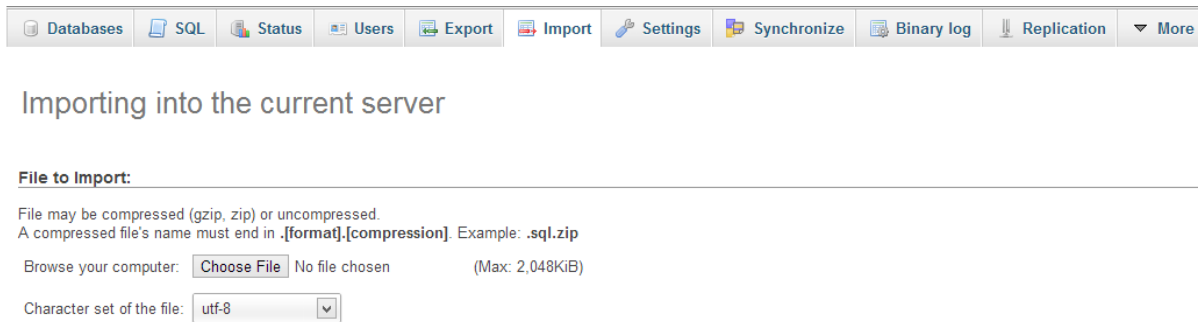


3. Install php to iis using online installer.

4. Copy web application files to inerpup ->wwwroot directory.



5. Import database to server.



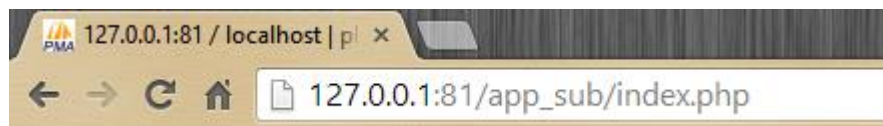
The screenshot shows the 'Import' tab in phpMyAdmin. At the top is a navigation bar with tabs: Databases, SQL, Status, Users, Export, Import (active), Settings, Synchronize, Binary log, Replication, and More. Below the navigation bar is the heading 'Importing into the current server'. Underneath is the section 'File to Import:'. A note states: 'File may be compressed (gzip, zip) or uncompressed. A compressed file's name must end in .[format].[compression]. Example: .sql.zip'. Below this note, the text 'Browse your computer:' is followed by a 'Choose File' button, the text 'No file chosen', and '(Max: 2,048KiB)'. At the bottom, 'Character set of the file:' is followed by a dropdown menu showing 'utf-8'.

6. Edit the connect. Php file according to server details.


```
<?php

// with your specific database information.
$host = "localhost";
$user = "root";
$pass = "";
$db = "local";
$tbl="freeleve";
// This part sets up the connection to the
// database (so you don't need to reopen the connection
// again on the same page).
$ms = mysql_pconnect($host, $user, $pass);
if ( !$ms )
{
    echo "Error connecting to database.\n";
}
?>
```

7. from the browser type app_sub.



8. Submit User Name and Password to check whether the system works properly.



Username:

Password:

☐ Remember me next time

[\[Forgot Password?\]](#)

Not registered? [Sign-Up!](#)