Chapter 4

EMS Approach

4.1. Introduction

The project is carried out to develop a computerized Examination Management System for effectively manage examinations of NIBM. Students, lecturers and examination staff can receive the advantages of the proposed solution. This helps them to reduce the time waste on examination related activities such as scheduling, result view...etc and perform the tasks more comfortably.

In previous chapter I have searched the technologies available to develop the examination management system. I have found some technologies to develop this Web system.

In This chapter my main aim is to describe the way I followed to solve the problem and also I describe the users, inputs, outputs, processes and technology which implement the solution. When I move towards the solution I have followed the waterfall approach, because, the basic requirements are well defined. So there is no any risk of failure. I have followed following main steps included in the waterfall approach.

- Requirement Gathering and finalization

  Here I identified the main requirements necessary for the proposed solution.

- System Design

  Solution is designed with identified requirements.

- System Development

  Designed system is written using a programming language.

- System Testing

  Develop system is tested using test cases.

4.2. Proposed Solution

My solution mainly used by three types of users. These users are listed as shown below.

- Student
- Lecturer
- Exam unit

Proposed examination management system mainly consists of six modules. They can be listed as below.

- Exam Scheduling
- Exam registration
- Exam result view
- Awardees Selection
- Transcript Request
- Exam result analyze

4.3. Users

Main users of the examination management system are Student, Examination Staff and lecturer. Examination unit generates exam schedule, select awardees and analyze exam results. Students can register for repeat exams, view examination results and request transcript online. Lecturer also can view students' examination results.

4.4. Inputs, processes and outputs of each module

Examination management system consists of six main modules which are used to manage the examinations. They are exam scheduling, exam registration, exam result view, exam awardees selection, exam transcript request and exam result analysis. Inputs, outputs and processes of each module discuss below.

4.4.1. Exam Scheduling

Exam scheduling module automatically generates the examination schedule. Students, supervisors and invigilators can view generated schedule through this web based system.

4.4.1.1. Inputs of exam scheduling module

Examination chief input course name, batch name, module name, free halls, free lecturer and free staff members, examination date and examination time.

4.4.1.2. Process of exam scheduling module

Process receives inputs entered by examination unit and produces the examination schedule. Examination schedule should be email to candidates, assigned supervisor\s.

4.4.1.3. Output of exam scheduling module

This module generate the examination time schedule\s including examination date, examination time, Examination name ,examination hall/s, students allocated for each hall, supervisor name and invigilator name for each hall.

4.4.2. Exam Registration

Examination register module permits repeat students to register for repeat examinations via web based form. They are not necessary to visit NIBM for registering and paying for repeat modules.

4.4.2.1. Inputs of Exam Registration

Repeat students need to enter their Repeat module\s and Payment data.

4.4.2.2. Process of Exam Registration

Process receives inputs given by repeat student and registered students are made available to the course directors' for approval .After the verification process they received and E-mail asking payment data. Process receives payment data and produce E-receipt.

4.4.2.3. Output of Exam Registration

Process generates the E-receipt for repeat students' indicating exam date, exam time, course name, module name\s and payment information.

4.4.3. Exam Results Viewing

This module allows students to view their examination results. Students have to log on to the system using their student number.

4.4.3. 1.Inputs of Exam Results Viewing
Students and Lecturers enter through web application or mobile application.

4.4.3.2. Process of Exam Results Viewing
Process receives student number, Course Name search the results stored in the database and make available.

4.4.3.3. Output of Exam Results Viewing
Process displays exam results of the students with module name and the grade.

4.4.4. Exam Awardees selection

Examination chief can select awardees of each batch in different courses through this module.

4.4.4.1. Inputs of Exam awardees selection
Exam Registrar is required to select course Name and Batch.

4.4.4.2. Process of Exam awardees selection
Process receives inputs from examination Registrar, check the awarding criteria defined for each course and generate the awardees list.

4.4.4.3. Output of Exam awardees selection
Process of this module generate awarding list with course code, Course name and awardees with final grades.

4.4.5. Exam Transcripts Generation

This module permits Students to request their examination transcript online. Requested transcripts are generated by examination registrar.

4.4.5.1. Inputs Exam Transcripts Generation
Student input student number and course name he/she followed.

4.4.5.2. Process Exam Transcripts Generation
Process receives inputs and make available to the exam registrar through email for approval.

4.4.5.3. Output Exam Transcripts Generation
Process generates transcripts requested by each student indicating student name, course name, module names, grade of each module and the final result.

4.4.6. Exam Result Analysis

This module allows analyzing the examination results in different views. This helps academics to make decisions of the academic progress.

4.4.6.1. Inputs of Exam Result Analysis
Here there are many inputs can be used to analyze examination results. Some inputs are course code, batch name, module name…etc.

4.4.6.2. Process of Exam Result Analysis
This process present examination result in different viewpoints such as course wise exam result, batch wise exam result and module wise exam result.

4.4.6.3. Output of Exam Result Analysis
Process presents exam results course wise such as DCSD, HDCBIS, etc, Batch wise exam results in each course. Module wise exam result in each course.

4.5. Summery

This chapter discussed my proposed solution which consists of mainly three users such as Student, lecturer and examination staff. My solution consists of six main modules such as exam scheduling, exam registration, exam result viewing, exam awardees selection, exam transcript request and exam result analysis. Exam scheduling module is used to generate the examination schedule, exam registration module helps students to online register for repeat examinations, through exam result viewing module students can view their examination results. Awardees of each batch in different courses can be received using exam awardees selection module. Students are able to request their transcript online using exam transcript generation module. Examination unit can analyze the examination results in different views on exam result analysis module.

Module	Users	Input	Process	Output
Exam Scheduling	Exam Unit	Course Name Batch Date Time Hall Supervisor Invigilator	Generate schedule	Exam Schedule
Exam Registration	Student	Module Name	Request Repeat	E-Receipt
Exam Results Viewing	Student	Student Number	Search Result	Exam Result
Exam Awardees selection	Exam Unit	Course Name Batch	Generate Awardees list	Awardees List
Exam Transcripts Request	Student	Student Number	Generate Request	E-Request
Exam Result Analysis	Exam Unit		Analyze Result	Batch wise Result Course wise Result Module wise Result

Table 4.1 - Summary of users, input, output and process