**12/28/2019**

# Proposal for

# E- Learning Management System

# Project name: NSU Online Learning Management System(e-LMS)

Submitted by:

**Md. Amdadul Bari-1510813042 & Rokeya Akanda Sriti-1620165042**

North South Universiy,Dhaka, Bangladesh
Email: rokeya.sriti@northsouth.edu, amdadulbari@gmail.com
Phone: +88 01843105424
Website: nsu.amdadulbari.com

# Table of Contents

## Tables

# Introduction

Learning Management Systems are an integral part of the eLearning design and development process. Due to its increasing demand, we are going to implement a learning management system by which students and teachers will be able to make the learning system more organized, accessible and easier. Learning management systems were designed to identify training and learning gaps, utilizing analytical data and reporting. A Learning Management Systems delivers and manages all types of content, including video, courses, and documents. In the education and higher education markets, a Learning Management Systems will include a variety of functionality that is similar to corporate but will have features such as rubrics, teacher and instructor facilitated learning, a discussion board, and often the use of a syllabus. A syllabus is rarely a feature in the corporate Learning Management Systems, although courses may start with heading-level index to give learners an overview of topics covered.

## About NSU Online learning management System

A learning management system (LMS) is a software application or a web-based technology, enabling management and delivery of content and resources to learners.

Typically, a learning management system provides an instructor with a way to create and deliver content, monitor student/ learner participation, and assess performance.

A learning management system may also provide students/learners with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. Besides, it facilitates administration, documentation, tracking and reporting of programs and events.

Learn more at nsu.amdadulbari.com

Repository link : https://github.com/amdadulbari/nsu-elms

## Purpose and Benefits of NSU e-LMS project:

The main objective of Learning Management Systems is to enhance the learning process. A Learning Management System not only delivers content, but also handles registering courses, course administration, skill gap analysis, tracking, and reporting. Most LMSs are web based and are used in various educational institutes and companies to improve classroom teaching, learning methodology, and company records. They are used in various industries and scenarios like in financial services, compliance training, computer-based training, online assessment, collaborative learning, application sharing, and so on. Some LMSs also include a performance management system which encompasses employee appraisal, competency management, and skill gap analysis.

### 11 Benefits Of Learning Management Systems:

1. **Stream lined training process.**
   Using a Learning Management System makes things easier for you, as it helps plan the training activities calendar which you can share with your learners, trainer, and co-administrators. By doing this you can maintain and improve your training process. An LMS also helps in getting trainer reports, which is a time - consuming process when done manually.

2. **Ability to deliver engaging and motivating training.**
   This is a fact that each individual learns in a unique manner. If you apply different learning approaches, they increase your success rate. LMSs help in communication and balance the whole system.

3. **Technology leverage.**
   In this digital world the working system has totally changed. Today every employee is engaged with a laptop or desktop, and with the help of Learning Management Systems you make the training future ready, it becomes interesting and exciting for your target audience.

4. **Centralized learning.**
   It becomes easy to offer centralized source of learning to multiple users and the training, performance, and content can be accessed from the same source.

5. **Tracking and reporting features.**
   Another benefit of using an LMS is that you can enhance performance through tracking and reporting tools. New users' progress can be tracked, records can be reviewed, and users can register for more than one course. Learning can be done through web-based training. Management can access the records and calculate which area needs improvement. The learners also become aware of the areas that need improvement and additional efforts, as the weak performance areas, can be identified easily.

6. **Evaluation capabilities.**
   Users can evaluate courses before joining, and employers can keep a track of the retention levels and real time performance by periodically scheduling assignments.

7. **Easy upgrades.**
   Content and information can be easily upgraded, as Learning Management Systems offer a centralized location for information which makes it simple to implement changes; plus, all users get the same upgraded information at the same time.

8. **Simplified learning process.**
   An LMS refines the learning process. The systems are easy to use and a new user can figure out everything very easily, since help is built into the system.

9. **Reduced cost and time saved.**
   The right LMS can reduce the training costs in multiple ways as the trainer doesn't need to travel now, so there are no boarding and lodging charges involved. The teaching cost reduces to great extent. Learning Management Systems save organizations' and instructors' valuable time and money through web-based training.

10. **Interactive environment.**
    Through new online tools, the interaction and communication

part improved. Learners get the answers in real time and the engagement is more geared toward being interactive.

11. **Anytime, anywhere**

12. **e learning.**
    Centralized uploading and online access ensures this. You can learn whenever and wherever you want to.

## 8 Learning Management System Features:

Finally, some common features found in the majority of Learning Management Systems include:

1. **Managing users, courses, roles, and generating reports.**
   This helps uploading courses, assigning roles, and generating various reports.

2. **Making a course calendar.**
   This feature helps in managing the course activities.

3. **Messaging and notifications.**
   Users and trainers can send reminders and notifications, including upcoming training and events.

4. **Assessments that can handle pre/post testing.**

5. **Certification and display employees' score and transcripts.**
   This help in maintaining training records of the learners, performance of the individual, and providing certificates to those who have completed training successfully.

6. **Instructor-led course management.**

7. **Administration.**

8. **Competency management.**
   With the help of this feature one can track and check the skills set of the team members and compare then against business goals.

## User Story

### Use Case 1:

Mr. Abc, the faculty of NSU need to enroll new students. He has two options.

a) Search in NSU e-lms site. Which gives him options to register students name based on his course. He needs to able send them mail or mobile notification for next level of activities like exam etc.
b) He posts a new announcement. Based on his system should send notification to those who's competencies match with his course and they will join class. He will be able to send notification for next level of activities.

### Use Case 2:

Students need to join in interesting courses. They have options

a) Search in the site for their interest subjects.
b) Join the class by registering themselves.

### Use Case 3:

Student Z did not join the class. But he wants to know update about class. He has 2 options

a) Search in the site
b) Can comment or post about class.

### Limitations of the LMS

- Organizational and instructor focus. They tend to meet the needs of the organization and the instructor more so than the learner.
- IT Culture. Centralize and control approach to educational technology.
- Limited informal learning possibilities.
- Course based model that **limits** community development.

## Solution Description

### Architecture

Database will receive requests of students and faculties from multiple types such android, iOS and windows apps and also browsers. There is mySQL for database system.
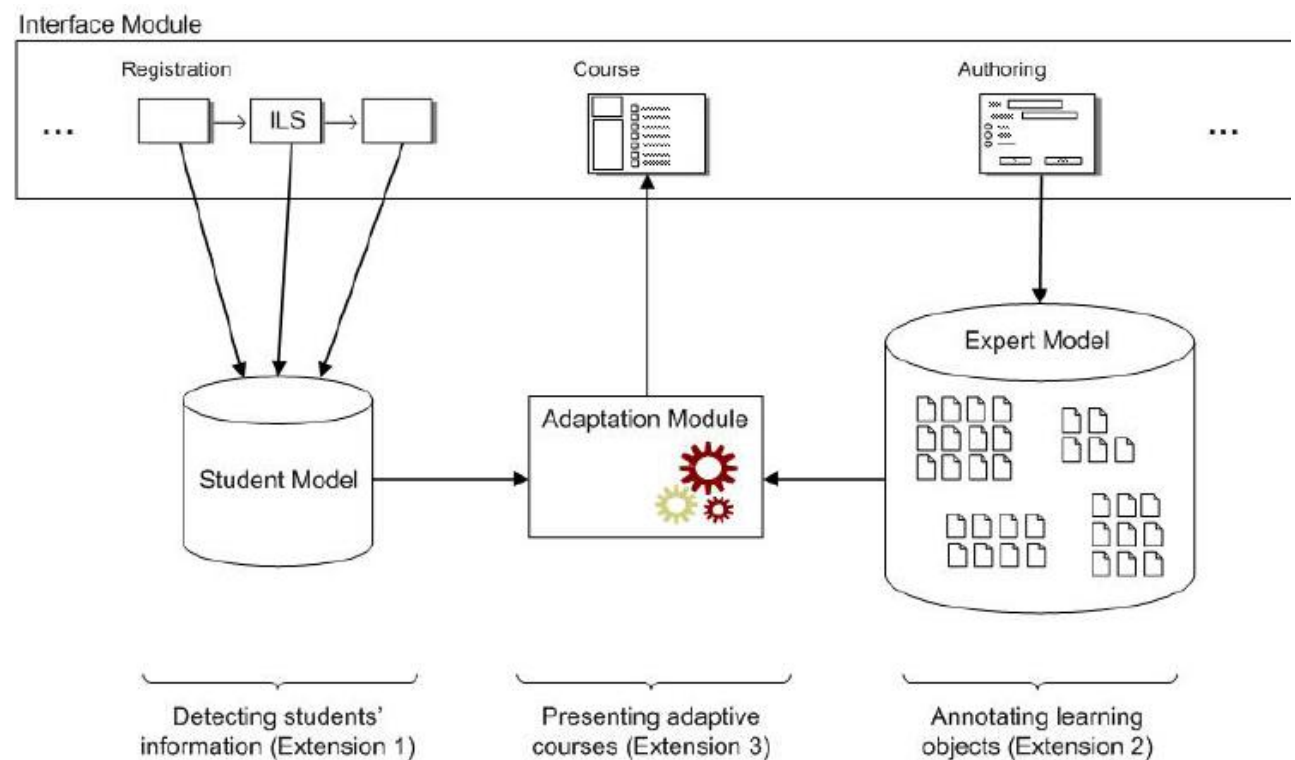


**Figure 1: Architecture plan**

## Examples of various Lms:

## Front-end plan

There are some templates in plan

1. Main page
2. Login page
3. Register page
4. Course details page
5. Students details page
6. Faculty page
7. profile creation page
8. Students details page

## Back end development

1. Account Creating, Password Recover:
   a. Sign up form, verification by mobile or email.
   b. Login
   c. Forgot Password
2. Profile Management:
   a. Student Profile
   b. Faculty Profile
   c. Course details
   d. Others
3. Searching facility:
   a. Faculty search
   b. Student Search
   c. Course search

## Tools and Technologies:

1. Database: Mysql
2. Protocol: Http
3. SMS API: https://bulksmsbd.com/
4. Cloud Provider: AWS
5. PHP

## Advantages:

There are six major advantages of Learning Management Systems: interoperability, accessibility, reusability, durability, maintenance ability and adaptability, which in themselves constitute the concept of Learning Management Systems.

1. Learning Management Systems supports content in various formats: text, video, audio, etc.
2. One can access materials anytime, from everywhere, teachers can modify the content, and students can see the updated material.
3. The evaluation of students is easier and fair, based on student attendance and online quizzes.
4. Students and teachers can re-use the material every time they need.
5. Students can learn collaboratively by setting up a college website with the Learning Management Systems software and helps Keeps organizations up-to-date with compliance regulations. If your organization must stay up-to-date with current compliance regulations, then a Learning Management System can be an invaluable tool.

## Hardware/Hosting Plan

Here is a list of possible cloud plans. We have to choose one that fits best and also economical.

Table 1: Cloud hosting plans

| Cloud Provider | DC location | Latency (ms) | Starter description | Starter price (USD) | Mobile app ext. (with Redis) | Mobile app ext. price (USD) | Total expense (USD/mo) |
|---|---|---|---|---|---|---|---|
| AWS (Amazon Inc.) | Singapore | 83 | EC2- small, EBS, Transfer 20TB, 0.12$/GB | $16.84 | 0.022/hr for a cache.t2.micro, goes lower ($0.009/hr) with 3 year term | $15.84 | $32.68 |
| Godaddy (Godaddy Inc.) | Singapore | 80 | 1 GB memory, 1 core, 30GB SSD, 2TB Transfer | $14.99 | 512 MB memory 1 CPU 20GB SSD 1TB transfer | $5.00 | $19.99 |
| Azure (Microsoft) | Chennai | 110 | 1 core, 20 GB Disk, $0.018/hr, 0.75GB memory | $13.39 | 250MB, $0.022/hr | $16.37 | $29.76 |
| Azure (Microsoft) | Singapore | 88 | 1 core, 20 GB Disk, $0.018/hr, 0.75GB memory | $13.39 | 250MB, $0.022/hr | $16.37 | $29.76 |
| GCP (Google Inc.) | Singapore | ?? | 1 shared vCPU .6 GB memory 10 GB disk | $4.28 | 0.6 GB memory, 10 GB disk | $4.28 | $8.56 |

# Collaboration Plan

Table 2: Collaboration plan

| Tasks | Schedule | YOURCOMPANYATOZ | XYZ |
|---|---|---|---|
| Host dev-site and develop | ongoing basis | y | |
| Build and release | every Thursday | y | |
| Run Build Verification Tests (BVT) | every Sunday morning | y | |
| Functional testing and reporting on JIRA | every Sunday morning | y | y |
| Full testing for QA check (Black box) | every alternate Sunday | y | y |
| Summary and discussion | every alternate Sunday | y | y |
| provide feedback on UI and functionality | as per need | y | y |
| use case testing | as per need | y | y |
| User data population (job, hr employer, candidates etc.) | as per need | | y |

## Project Schedule

Phase 1 will take a total of 6 weeks from the day of start. Calculated Man-month = 8.5/4 = 2.123. Excluding front end development it will become

<div align="center">Table 3: Phase 1 Schedule</div>

| SL | Deliverable | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Man-week |
|----|-------------|--------|--------|--------|--------|--------|----------|
| 1 | Front end development* | - - - - - | | | | | 2.5 |
| 2 | Profile management | | - - - | | | | 1.5 |
| 3 | Account management | | | - - - | | | 1.5 |
| 4 | Search facility | | | - - - - | | | 2.0 |
| 5 | Deployment and final release | | | | - - | | 1.0 |
| | **Total duration** | **1.5** | **2.5** | **2.5** | **1.5** | **0.5** | **8.5** |

## Budgetary Price

Excluding front end development (2.5 man-week) total time plan = 6 weeks. Following table shows LMS expense. In addition, based on requirement as it reveals during project NSU LMS will help one choose the appropriate cloud hosting. That expense is not included here.

**Table 4: Expense Breakup for Development**

| SL | Deliverable | Expense | Comment |
|----|------------|---------|---------|
| 1 | UI design | xxxxx | |
| 2 | Front end development (HTML) | xxxxx | |
| 3 | back-end development | xxxxx | |
| 4 | Database design (MySQL) | xxxxx | |
| 6 | Setting up middleware | xxxxx | |
| 7 | UI integration ( HTML clean up and optimization) | xxxxx | |
| | Total | xxxxx | |

**Note:** Price is excluding of any Tax, VAT and other levies.

## Some Screenshots of Project:



Admin



Attendance

## Individual Report

**Select Subject** Analysis of Algorithms ▼

**Student Reg. No.** [        ]  Go!

## Mass Report

**Select Subject** Analysis of Algorithms ▼

**Date ( yyyy-mm-dd )** [        ]  Go!

| Student Reg. No: | |
|---|---|
| Total Class (Days): | 1 |
| Present (Days): | 0 |
| Absent (Days): | 1 |

Reports

## Conclusion:

A Learning Management System is a technological tool used to deliver online education and training. An LMS gives clients a way to create and deliver content, organize courses, manage users, and monitor the progress of multiple users, all with relative ease. An LMS may also provide additional advanced features including the ability to manage payments, custom branding, or e-Conferencing. Learning Management Systems are the future of training.

❑ A Learning Management System is a technological tool used to deliver online education and training.

❑ An LMS gives clients a way to create and deliver content, organize courses, manage users, and monitor the progress of multiple users, all with relative ease.

❑ An LMS may also provide additional advanced features including the ability to manage payments, custom branding, or e-Conferencing.

❑ Learning Management Systems are the future of training.

# Appendix

## Contact information

Contact Persons Name: Md. Amdadul Bari & Rokeya Akanda Sriti
Email: rokeya.sriti@northsouth.edu, amdadulbari@gmail.com
Mobile: +8801817181156

**Md. Amdadul Bari-1510813042 & Rokeya Akanda Sriti-1620165042**
**North South Universiy,Dhaka, Bangladesh**
**Email:  rokeya.sriti@northsouth.edu, amdadulbari@gmail.com**
**Web :** nsu.amdadulbari.com