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October 28, 2016

ABSTRACT

**eKaksha**, an E-Learning System, is a technology used to support remote learning. **eKaksha** is a platform developed in order to simulate conventional classroom for non-campus students vai successful implementation of all kinds of multimedia exchange mechanisms successfully. Equipped with powerful capabilities for managing content to meet instructor and student needs, core features include registration, synchronous and asynchronous delivery of courses, ………

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1. INTRODUCTION

1.1. Project Description

This is the report for the major project, **eKaksha**: an E-Learning system that is carried out as a final semester project during October 2016 at LA GRANDEE International College.

1.2. Goals and Benefits of the Project

The premier objective of the project is to provide the platform for conducting online teaching pedagogy. Here we intend to create virtual classrooms where the teachers can teach their students located at a remote location, which overcomes the geographical challenge of Nepal.

1.3. Assumptions and Constraints

We believe that the system will be platform independent. It is assumed that the students and the teachers have the access to high speed internet and necessary hardware infrastructure. Even though high speed internet is entertained for smooth running of the application, these bandwidth constraints may not be fulfilled in every parts of the country.

1. PROBLEM STATEMENT

For on-college students, the only way to stay in touch with the teachers is inside the campus premises. Else they have to take aid of some educational sites for references or contact the teachers personally which may not be convenient to both parties.

Same is the case for non-college students as well; they have to fully depend on external sources, they don’t have any contact with their tutors.

**“eKaksha”** is a podium through which the students can continuously stay connected with the teachers and other students in the class. This solves the distance gap among the teachers and students.

1. OBJECTIVES
2. BACKGROUNG STUDY

4.1. Feasibility Study

4.1.1. Introduction

Feasibility is a technique to determine whether software is feasible or not regarding with cost objective, scope, etc. from different view such as economical, technical, operational, scheduler resources, etc.

4.1.2. Implementation Environment

The system can be used by different level of users to perform their respective task at a time. I.e. both the teachers and students can use the system at the same time. The system is more interactive, supportive, and platform independent.

4.1.3. Flexibility of the Project

The system can be developed with free open source software, PHP programming language for application base, and MySQL for database management.

4.1.4. Resources Availability

PC or laptop is needed in order to use the system in which a web browser must be built-in or installed cause our system is a web based system. The client also requires internet connection to use the application. Since it is a web-based application, it runs on every Operating System. Besides it is also mobile responsive hence it runs even in the mobile devices.

4.1.5. Financial Feasibility

The system is financially feasible as the only expenditure to use the system is internet expenditure.

4.1.6. Supplementary Specification

It requires the requirements that are not captured in the use case and they are listed below:

* Adaptability: The system can run in every device with web browser installed in it.
* Maintainability: Since it is a web-based application, it is easy to learn, fast to deploy, highly scalable and extensible.
* Flexibility: The flexibility of PHP is at the same time biggest advantage and its liability.

4.1.7. Limitations

The project was performed with full study of the related documents but there occurred some complexities, which were beyond our realization. Though the software is user-friendly in implementation, some major limitation encountered from the practical point of view. The users of the system must have at least basic knowledge in the field of computer and must have idea of how to make optimum use internet service.

4.1.8. Time Schedule

Scheduling is an important activity of the project managers. It is very essential to make a schedule according to which a project is completed. Time management was very difficult for us as our last semester was comparatively very short than any other semester and we had very little time for our project. But we scheduled the available minimum time very efficiently to bring our project to completion. We plotted the schedule for the project in a Gantt-chart.

Gantt-chart

Gantt-chart is useful for scheduling, budgeting and resource planning. A Gantt-chart is a special type of bar-chart where each bar represents an activity. Here the time allocated for each activity is presented. The figure below shows the Gantt-chart representation for our project.

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **2016** | | |
| **August** | **September** | **October** |
| 1. Initial Requirements |  |  |  |
| 1. Design |  |  |  |
| 1. Prototyping |  |  |  |
| 1. Evaluation |  |  |  |
| 1. Review and Updation |  |  |  |
| 1. Development |  |  |  |
| 1. Testing |  |  |  |
| 1. Maintenance |  |  |  |

Figure 4.1.8 – Gantt chart

4.1.9. Work Division

The different task identified for the completion of the project were divided among the team members, with accordance to their talent and capabilities, and performed accordingly. Later they were integrated together to form a single unit. Some of the tasks were performed individually while some were accomplished through group work. The division of tasks between us (team of tree) is tabulated below.

|  |  |
| --- | --- |
| **Tasks** | **Members Involved** |
| Project Planning | Keyrun, Kushal & Rahul |
| Requirement Gathering | Keyrun, Kushal & Rahul |
| Analysis | Keyrun, Kushal & Rahul |
| Design | Keyrun, Kushal & Rahul |
| Creating Database Component | Keyrun, Kushal & Rahul |
| Coding | Keyrun, Kushal & Rahul |
| Integration & Testing | Keyrun, Kushal & Rahul |
| Maintenance | Keyrun, Kushal & Rahul |
| Documentation | Keyrun, Kushal & Rahul |

Table 4.1.9 – Work Division between Team Members

4.2. Platform study

4.2.1. Introduction to HTML

Hyper Text Markup Language

3.11.2. Features of HTML

3.11.3. Introduction to PHP

3.11.4. Features of PHP

3.11.5. Summary

Hereby, from the study conducted it was found that the project is technically and financial feasible in the given time. Therefore, we decided to use HTML & PHP as the platform or programming language for developing our web application.

1. REQUIREMENT DOCUENT

Functional Requirements

Non-Functional Requirements

1. SYSTEM DESIGN

4.1. Use Case Diagram  
Use Case Diagram is a diagrammatic representation of a system’s functional requirements in terms of use cases. It consists of all the actors and various use cases by which the actors interact with the system, thereby describing the total functional behavior of the system.

It is a technique used in software and system engineering to capture the functional requirement of a system. Use cases allow the description of sequence of events taken together, lead to a system doing something useful. Each use case describes how the actor will interact with the system to achieve a successful goal.

The following Use Case Diagram can be used to graphically represent an overview of the use case of the system.

4.2. Use Case Description

4.3. Entity Relationship Diagram

An Entity-Relationship Model (ERM) in software engineering is an abstract and conceptual representation of data. Entity-Relationship modeling is a relational schema database modeling method, used to produce a type of conceptual schema or semantic data model of a system, often a relational database, and its requirements in a top-down approach. Diagrams created using this process are called Entity-Relationship Diagrams or ER Diagrams or ERDs for short.

We can express the overall logical structure of the database graphically with ER Diagram. Its components are:

* Rectangle represents Entity sets.
* Ellipse represents attributes.
* Diamond represents Relationship sets.
* Line is used to link Entity sets with other Entity sets and Relationship sets.

4.4. Data Flow Diagram

A Data Flow Diagram (DFD) is a graphical representation

1. DEVELOPMENT

(Coding)

1. TESTING

Testing phase is one of the vital phases in software development because it enables us to know whether the system we have proposed meets the requirement or not. It helps to know the constraints and things which need to be revised and things that would have not been known before this stage.

1. PROJECT RESULT
2. FUTURE ENHANCEMENTS
3. RECOMMENDATON
4. CONCLUSION
5. ANNEX