**Affiliated To Tribhuvan University**

**Lumbini ICT Campus**

Gaindakot, Nawalpur



Project Proposal

On

**“Online tutor”**

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# 2.Methodology

Incremental Model is a process of software development where requirements divided into multiple standalone modules of the software development cycle. In this model, each module goes through the requirements, design, implementation and testing phases. Every subsequent release of the module adds function to the previous release. The process continues until the complete system achieved.

To develop a software product, there must be a clear understanding among team representative about when and what to do. Software development life cycle plays the most important role in developing a software. Software life cycle model is a pictorial and diagrammatic representation of the software life cycle. A life cycle model represents all the methods required to make a software product transit through its life cycle stages. It also captures the structure in which these methods are to be undertaken. There are different software models to implement the SDLC like waterfall model, incremental model.

Among this, I have implemented Incremental model because my requirements were not fixed, and incremental model is more flexible to change the requirements. Risk can be easily managed using incremental model.

Diagram

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## 2.1Requirement Engineering

### 2.1.1Feasibility study

Feasibility analysis, in simple words, is an analysis and evaluation of a proposed project to ensure if it is technically, economically, and operationally feasible. As the name suggests, a feasibility analysis is a study of the viability of an idea. It focuses on answering the essential question of “should this proposed project idea proceed?”.

**Economic feasibility**

As this is a basic project, the only requirement for the development of this project is a working computer system with some required software and development platforms installed. Also, any current desktop will be capable of installing and making use of the end product. Hence, this project is economically feasible.

**Technical feasibility**

“Online Tutor” is technically feasible; complies with current technology, including both the hardware and the software. The web application is supported by almost all the latest computing devices with minimum hardware and software requirements.

**Operational feasibility**

“Online Tutor” is a gateway to all the resources and instruments that facilitate teaching and Learning. Technically speaking, it’s a website that acts as a repository for teaching and Learning materials.

**Schedule feasibility**

Here, we analyzed the time required to complete the project, identified that the project will fail if it took too long to complete, and determine some targeted milestones and time frames for completion as a guideline only.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S.N. | Weeks/stages of project | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 1. | Study and Planning |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2. | Requirement gathering and analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. | System design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. | Implementation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5. | Testing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6. | Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7. | Presentation and Report Submission |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### 2.1.2 Requirement collection

**a. Interview**

For requirement elicitation of our project, we perform open end interview with some teachers and students.

### 2.1.3 Requirement Analysis

#### 2.1.3.1 Hardware requirement

* For developer=>
* Processor: Intel Pentium 4 or above
* RAM:1GB or above
* Available Disk space:10GB+
* Running internet connection
* A server

#### 2.1.3.2 Software requirement

* Any operating system
* Language: C#, ASP.Net / PHP(Laravel)
* Text editor
* Any web browser

### 2.1.4 Software requirement specification

#### 2.1.4.1 Functional Requirements

There are three users who operate the system:

Admin(manager)

Teacher

Student

User functionalities:

* User are required to authenticate their roles and choose either they are teacher, admin or student.
* Admin have full access to manage the site including adding, deleting and editing all the pages and module.
* Teachers are able to post notices, schedule exams, grade marks, upload assignments, provide pdf, video tutorial and so on.
* Student are able to see notices, take online exams, view evaluation marks, submit assignments, download or view learning materials.

#### 2.1.4.2 Non-Functional Requirements

Non-functional requirements define the overall qualities or attributes of the system. The system's non-functional requirements serve as a restriction on the system's design being developed. It also ensures the usability and efficiency of the entire system.

**Security:** The system requires the username and password of every user to access the system's features and protect the system from unauthorized users.

**Usability**. The proposed system was designed to attain the specified goal, which is to provide an effective and reliable learning system; it can make the users complete the task accurately.

**Maintainability**. The system was capable of maintaining confidential records like student grades which is why the admin account was created to secure and monitor the user of the system.

**scalability**. The system can be improved and upgraded to meet the demands of student and teacher.

### 2.1.4 Requirement validation

We conduct the review where the supervisor will review for validate.

## 2.2 Design

**a. Architectural Design**

Home page

Admin Suite

User suite

Add/Delete user

Add/delete pages

Teacher

Student

Submit assignment

Upload assignment

post notices

upload pdf files and learning materials

View and download pdf files and learning materials

View notices

Fig: architectural design

**b. Use case diagram**

Diagram

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**c. Activity diagram**

Diagram

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Fig: activity diagram(admin)

Diagram

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**d. data flow diagram**

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**e. ER diagram**Diagram

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## 2.3 Implementation/Coding

### 2.3.1 Tools and Technique

The framework and language are not decided yet. Preferences include:

|  |  |
| --- | --- |
| .Net Framework | C#, ASP.NET, ASP.NET Core MVC |
| Laravel | PHP, Vue Library |
| Database | MySQL, MongoDB |

For implementation/coding tools and techniques, available solutions will be discussed among

team members and supervisors and the decision will be made.

## 2.4 Testing

**Unit testing**

Developer themselves checks if software components are fulfilling functionalities or not.

**Acceptance Testing**

Supervisor checks the requirements of a specification or contract are met as per its delivery.

# 3. Project Risks &amp; It’s Mitigations

**Risks 1:** Time management risk

**Mitigation:** Dividing work equally within the team members and share every gathered information to the members.

**Risk 2:** Whether users will choose to use the system or not

**Mitigation:**  Proper marketing, regular maintenance and updates on the system focusing on modern trends and design.

**Risk 3:** Security Risks (data theft, secure connectivity, encryption standards, etc.)

**Mitigation:** Updating the security mechanism,

**Appendix**

The questions of the interview are as follows:

* Why do you think there is the need of e-learning portal?
* Does e-learning enhance the quality of teaching and learning?
* Is it possible to make easy interaction between educator and student and how?
* What is the problem that educator and student face in traditional learning system?
* How can we improve the learning process and need of the student?