American International University-Bangladesh (AIUB)

Faculty of Science and Technology (FST)
Department of Computer Science (CS)

SDPM Group Project, Summer 24

Project Title …Learn and Teach….
Section ……A…….

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1.0 PROJECT TITLE:

Learn and Teach.

2.0 INTRODUCTION:

A platform called Learn and Teach links educators and learners. This is wholly focused on the pupil. difficulties with comprehension in the classroom, forcing them to rely on the internet and, occasionally, dishonest websites, which could have a detrimental effect on their academic performance. Conversely, some students can make the most of the course while simultaneously helping others understand subjects that are confusing to them. Learn and Teach, which is especially intrigued by these facts, established a platform to link students who wish to comprehend the challenge and students who can communicate concepts to others in an understandable way. Students can sign up for this as lecturers or as students. This system allows students to access the internet.

3.0 OBJECTIVES:

The main purpose of this system is to provide an environment for learning online. This system has many objectives which are:

- Students who need a teacher immediately can get an instructor.
- This system enables instant learning opportunity.
- Provides earning opportunities for instructors or students.
- Boost up the education system.
- This system is more cost-effective than in-person tutoring.
- Schedule flexibility will be provided to students.
- This system will be more convenient and comfortable for students as it provides education online.

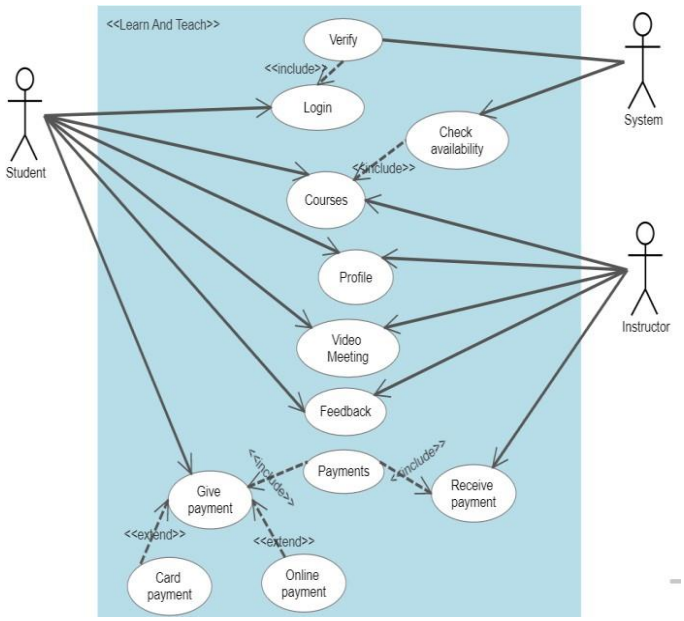
A personalized learning experience will be provided to students. Instructors will make the lesson fit and suitable for student's requirement or specific needs

4.0 JUSTIFICATION:

This agreement will benefit the student body. Students who are weak in a certain subject can register on our site as students, and students who are proficient in a particular subject can register on our site as teachers.
In this instance, both the teacher and the student will benefit from the knowledge the student gains from the instructor, who will be paid according to his labor and time. Thanks to this technology, students will always have access to a learning environment and can learn whenever they choose.

5.0 SYSTEM OVERVIEW:

There are two ways for users to log in to this system. They can sign in as a teacher or a student. Both actors must select a specific issue in which they are interested after logging in. The technology will put students and instructors together in a private space where they may converse based on their shared interests. Pupils will rate each teacher, and they will also provide a list of the students they have taught. In order for the instructor's lesson to be counted, he must spend at least 10 minutes with the student in the virtual conference room. They will be paid according their rating and the number of students being instructed by them. Students and Instructor both have the skip option to skip one another and move to another instructor or student. After every virtual session student have to rate the instructor. There will be a payment method where student will pay and instructor will get the payment from students.



6.0 STAKEHOLDERS ANALYSIS:

Stakeholders are those who have a stake or interest in a project. Stakeholders can be individuals, group or organization who are involved in project, can influence it and whose interests maybe affected by the success or the failure of the project. Stakeholders for our project are given below:

Primary Stakeholders:

i. Students
ii. Instructors

Secondary Stakeholders:

i. Owners
ii. Board of Director
iii. Investor

Positive Stakeholders:

i. Developers
ii. Sponsor
iii. Media

Negative Stakeholders:

i. Some people from board of directors
ii. Some people from Investors

Internal Stakeholders:

i. Project Manager
ii. Development team

External Stakeholders:

i. Media
ii. Information management group

7.0 FEASIBILITY STUDY:

Feasibility study will help an organization to take a project or not. It analyses whether the proposed business ideas will succeed or fail. Here technical and financial feasibility is shown for the project:

Technical Feasibility:

To find out if the business has the personnel, tools, software, supplies, resources, and technical know-how to complete the project, a technical feasibility study is carried out. If the project can be finished with the tools and personnel the company has, then it is technically feasible for the business to succeed. This is feasible for our project since we'll be using MySQL servers with VueJS and Tailwind (a CSS framework) as the frontend and the ASP.Net framework with C# as the backend. We also have the tools necessary to finish the process. Therefore, theoretically, our project is doable.

Financial Feasibility:

The ability of a project to generate enough revenue, credit, and cash flow to support it financially over the long run and pay off all debts is known as financial feasibility.
If we hire six programmers, the project will be financially viable. It will take approximately nine months to complete, with a budget estimate of 4,397,900 TK. We might declare that the project may be completed successfully if the customer consents to pay the sum of money needed to complete the procedure. Other than that, it is not practical to adopt or take this.

8.0 SYSTEM COMPONENT:

The Components of this projects are shown below:

1. Registration Component: If any user wants to use the system he has to login to the system. If a user does not have any account, he or she has to register him or herself. After successful registration, a user can use the system.

2. Account View Component: if any user like student or instructor want to see their profile, update their profile, see history or activity this component of the system will be used.

3. Course Component: In this component student user will take course and can also see the courses that has been taken. Instructor will select or choose the courses that he/she is specialized on, also instructor can see the enrolled students of the course. There will also be a particular section for file uploads in the courses by the instructor.

4. Call Meeting Component: In this component student can join the classes of the courses and instructor can take class and give instructions. I/O devices will be use of the users

5. Payment Component: In this component, Student will give payment of the selected courses that have been taken using card or mobile banking. Instructor will receive the payment for the particular course.

6. Administrative Component: In this component, admin will have authority to verify users, check available course and maintain the system.

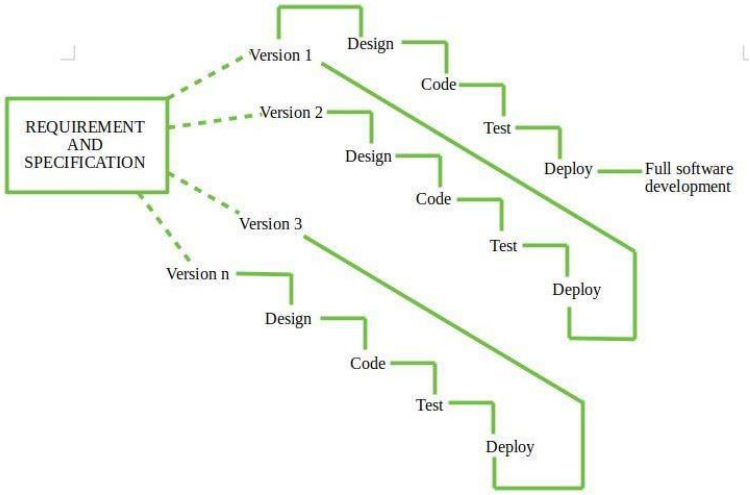
9.0 PROCESS MODEL:

In our Learn and Teach project we will follow the Incremental Model. We know that the incremental model divides the system's functionality into small increments that are delivered one after the other in quick succession. The most of the functionality is implemented in the initial increment.
In our project, we first thinking the need of the project in our country than we start a planning. After done planning session we start design our project than done coding, testing and other works.

We make an effort to meet every customer request in the first release of our project. Next, we examine the requirements and contentment of our clients. We attempt to update this in the second increment if there are any project development requirements. As we already know, creating an initial implementation is the foundation of incremental development.

letting users provide input and updating it with new versions. Feedback is an integral part

of the process activities.
We use the incremental model for each increment's development purposes.



Incremental Model Phases:

Requirement Analysis: The product expertise determines the needs in the first stage of the incremental model. Additionally, the requirement analysis team is aware of the functional needs of the system.

Design: The SDLC increment model, system functionality design, and development methodology are successfully completed during this phase. The incremental model makes use of the development phase and style when creating new software in practice.

Coding: During this phase, developers code software in accordance with the specifications and design.

Testing: In the incremental model, testing involves evaluating how well each function that is currently in place works in addition to adding new functionality. The behavior of every task is tested throughout the testing phase using a variety of techniques.

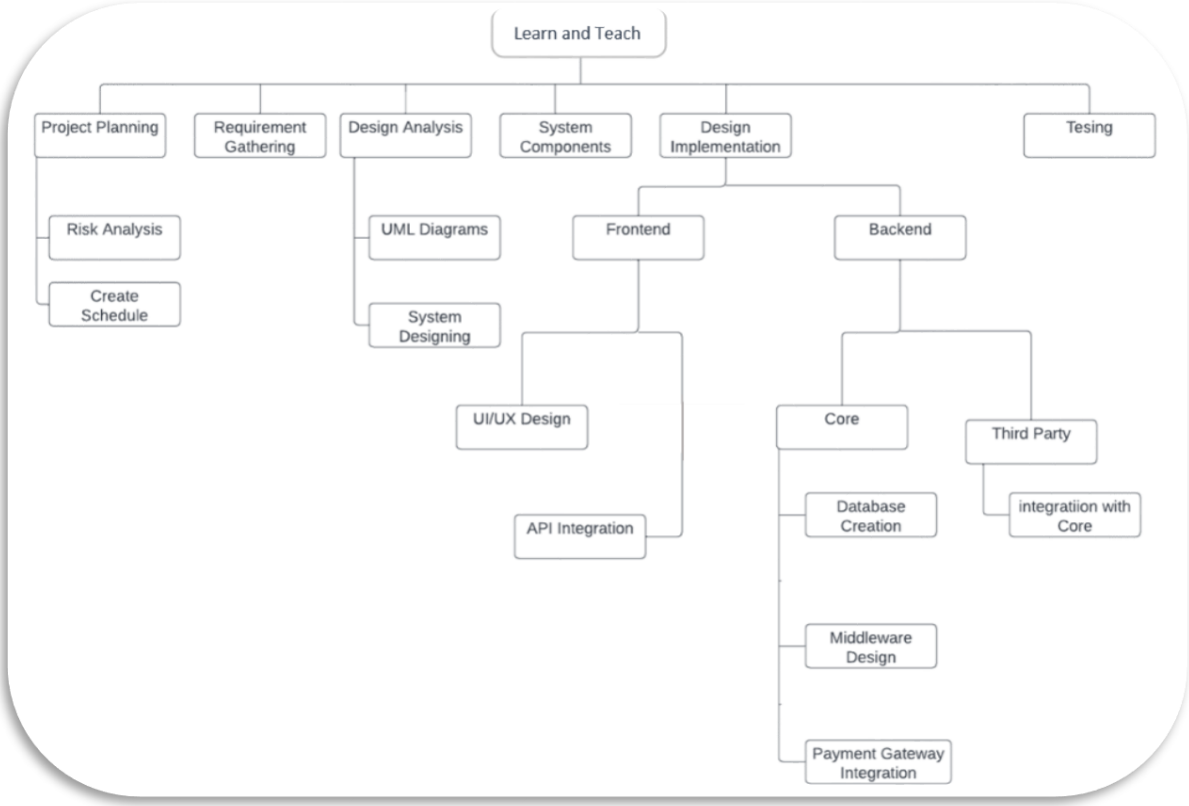
Justification of choosing Incremental Model:
In our project after first release, we try to gather feedback of customers as well as stakeholders. If the stakeholder doesn’t like anything, everyone finds out a lot sooner. It is efficient as the developers only focus on what is important and bugs

are fixed as they arise. After findings bugs and other problems in next increment, we try to solve this problem.
We also know that the incremental model is great for projects that have loosely-coupled parts and projects with complete and clear requirements.
In our project, we need to full fill the customer requirements in updating our features, come out with new version as well as give extra facilities of user. For this reason we try to follow the incremental model that helps our project make good and also we hope that this project meet the customer requirements.

10.0 EFFORTS ESTIMATION:

In order to estimate the required effort, we need to breakdown the project into its component parts. We use the Work Breakdown structure (WBS) to break down the entire project into smaller components. The WBS outline will consist of the following tasks:

- Project Planning
- Requirement Gathering
- Design Analysis
- System Components
- Design Implementation
- Testing



COCOMO (COnstructive COst MOdel):

Task	SLOC
UI/UX Design	12000
API Integration	2000
Database Design	4500
Payment Gateway	2500
Integration with Core	1500
Middleware Design	4500
Total	27000

Effort = PM = Coefficient*(SLOC/1000)^P

Here, Coefficient=2.4

SLOC=27000

P=1.05

T=0.38

So, Effort=PM=2.4*(27000/1000)^1.05

= 76.41≈76

Development time = DM = 2.50*(PM)^T

=2.50*(76)^0.38

=12.99≈13 month

Required number of people = ST = PM/DM

=76/13

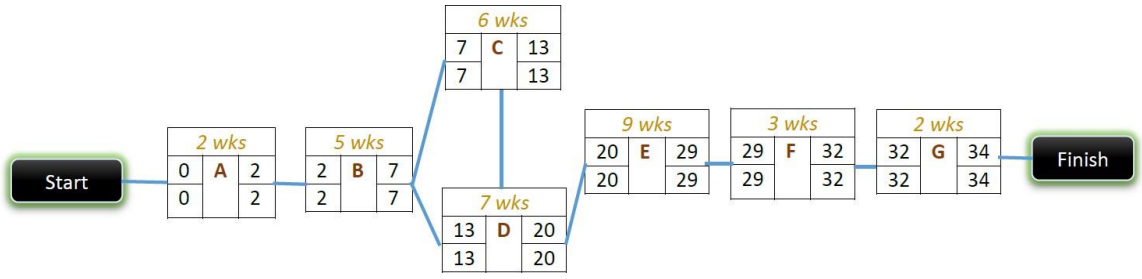
=5.85≈6 people

So there need Six programmers to implement this project

11.0 ACTIVITY NETWORK DIAGRAM:

First, we create a list of the activities that have been identified and specified in the WBS, along with the associated durations. The table includes the following information:

	Activity Name	Precedence	Duration
A	Planning	None	2
B	Requirement analysis	A	5
C	Design analysis	B	6
D	UI/UX Design	B,C	7
E	Implementation	D	9
F	Testing	E	3
G	Deployment	F	2



12.0 RISK ANALYSIS:

Assumptions must form the foundation of project planning. Risk is the likelihood that an assumption may be incorrect. When it occurs, it raises a problem. To control and comprehend the uncertainty during the system's development, we conduct risk analysis and management. The potential risks to our endeavor are listed below:

Risk	***Category***	***Probability***	***Impact***
Insufficient development member	ST	20%	3
Delivery deadline gets late	BU	15%	2

Low estimation/assumption	PS	40%	2
Complexity of a module is high	TE	30%	3
Late change to requirement from customer	CU	45%	2
Limited resources and tools	DE	10%	3
Server gets down	TE	50%	1
Limitation of budget	BU	5%	4

Impact values:

1. Catastrophic
2. Critical
3. Marginal
4. Negligible

13.0 BUDGET FOR THE PROJECT:

- Project development time = 8.5 Months
- Number of programmers will work = 6
- Working days= 5 Day
- Working hour per day= 8 Hours
- Working hour in 1 week= (5*8) = 40 Hours
- Charge for each programmer per hour = 300 TK
- Charge for each programmer
  - Per week = (300*40*) = 12,000 TK
  - For a month = (12000*4) = 48,000 TK
  - For 8.5 months = (48000*8.5) = 408,000 TK
- Charge for 6 programmers for 8.5 months = (408000*6) = 2,448,000 TK
- Project manager charge for 9 months = (9*40000) = 360,000 TK
- Other employees charge for 9 month = 250,000 TK
- Office rent for 9 months= (9*25000) = 225,000 TK
- Electricity and other bills = 100,000 TK
- Total Estimated cost = (2,448,000 +360,000 +250,000+225,000 +100,000) = 3,383,000 TK
- Total estimated budget [Considering 30% profit] = (3,383,000+(0.3*3,383,000)) = 4,397,900 TK

14.0 CONCLUSION:

An online platform called "Learn & Teach" will assist users in learning effectively online. It will also make it possible for teachers to earn money. Given that this initiative will benefit society, it is recommended. Because it is web-based, this system is different from traditional educational systems and flexible enough to help students whenever they need it. As a result, students can adjust to technology. A virtual education system can help students save time. As such, this system is quite beneficial.