Chapter 1: Introduction

1.1 Introduction

E-learning Platform is a web based application, that helps in improvement of educational sector by making learning contents accessible to anyone and anywhere. In this project we are aiming to make the learning contents more accessible to both teachers and students. On this platform, students can post questions and those questions can be answered by other students or the teachers. With this platform, students can invest their time in right place instead of wasting their time on useless online things.

During the times of lock-down we saw that how impactful the e-learning system is. Now there is no saying that something like that would never happen again, so this e-learning platform will help students utilize their time by quickly searching for their answers. With this platform being developed students can create an e-learning community and grow in knowledge. Students can ask the questions that they aren't able to ask in the class because of some reasons.

There are many online platforms out there that offer online courses. But among them some give access to the content only when we pay some amount. With this system developed user can get their questions answered without having to pay. A list of some E-learning Platform are :-

- Edemy
- Teachable
- Ruzuku
- Coursera
- Skillshare
- Thinkific

These are some of the e-learning platforms out there. These platforms show the vast adaptation of the e-learning platforms. Many students use these platforms to learn any skill they are interested in. And the use of this platform is increasing by the day. In near future we may even a drastic use of e-learning platform in our society. With the help of e-learning education will be available to a lot of people with a less amount of cost. Learning becomes easy with the integration of e-learning technologies.

1.2 Problem Statement

With the advent in technology and with the perpetual increase in the strength of the students and the number of departments in the educational institutions, it is laborious to exchange the study materials between the students and the faculties.

1.3 Objectives

There are many benefits of e-learning platform as we have seen in past some years. The implementation of this project helps both students and teachers. The teachers can answer the student's questions whenever the students ask questions. The students won't be limited to learning form only one teacher. Some of the main objectives of E-Learning Platform are :-

- It provides security to user data.
- It provides free access to all the content.
- More engagement in learning.
- It is easy to access.

Chapter 2: Background Study and Literature Review

2.1 Background Study

E-learning Platforms are in trend nowadays. Many students and teachers are using this platform as part of their education material. This platform is providing a comfortable education method for both students and teachers. With the use of this platform students can learn from different teachers. While we were reading about e-learning we found that there are different types of e-learning. Some of them are as follows:

- Asynchronous Online Learning
- Synchronous Online Learning
- Mobile Learning
- Gamification

Above mentioned types are just some of the many types of e-learning. And we considered that we will create the Asynchronous e-learning platform. During the study process we also observed that there is a vast use of this e-learning platform. And the use of this platform will increase in the future even more

2.1.1 Asynchronous Online Learning

An asynchronous online learning platform is the most common type of e-learning. It refers to a self-placed learning environment where learns can access the course material and complete their assignments at any time and from anywhere. It may come in the form of pre-recorded lectures, discussion forums, and other learning resources on a e-learning platform., without having to participate in live sessions. Asynchronous learning is any type of learning that you undertake on your own schedule and which does not require consistent real-time interactions with an instructor.

2.2 Literature Review

For this project, we researched and reviewed many websites, articles, documentations and applications. Throughout the research we found that the use of e-learning platform is in trend nowadays. And there are many e-learning platforms online. But the problem here is

not all the content on them is free. Which makes it harder for students to get accessibility to many useful content.

The E-learning Platform is in high use by both students and teachers to increase in their knowledge. During the times of lock-down we saw the true potential of the e-learning platform. This learning platform helps students to learn even in such hard situations and it didn't let such situation stop the education of students. We also use these e-learning platforms in our daily life for our study purpose.

(Grönroos, 2024) pointed out that service quality depends on the gap between the service perceived by users and the service expected by users. The research believes that e-learning is a knowledge service relying on information and communications technology. Its quality is defined as the gap between the user's psychological expectation before accepting e-learning services and the user's real and actual experience in receiving services.

Previous research on the quality of e-learning has focused on the learner's subjective perspective to explore the main factors that affect students' perception of e-learning quality. Some studies suggest that system quality, information quality, and service quality are the key factors that determine the success of e-learning. (Lee, 2024) found that students' perception of online support learning service quality is a significant predictor of online learning acceptance and student satisfaction through surveys of Korean and American students.

Chapter 3: Methodology

We are going to use the waterfall methodology while building this website. This project have specific documentation, stable development environment, fixed requirements, well-understood technology, so in order to build this system, waterfall methodology can be used.

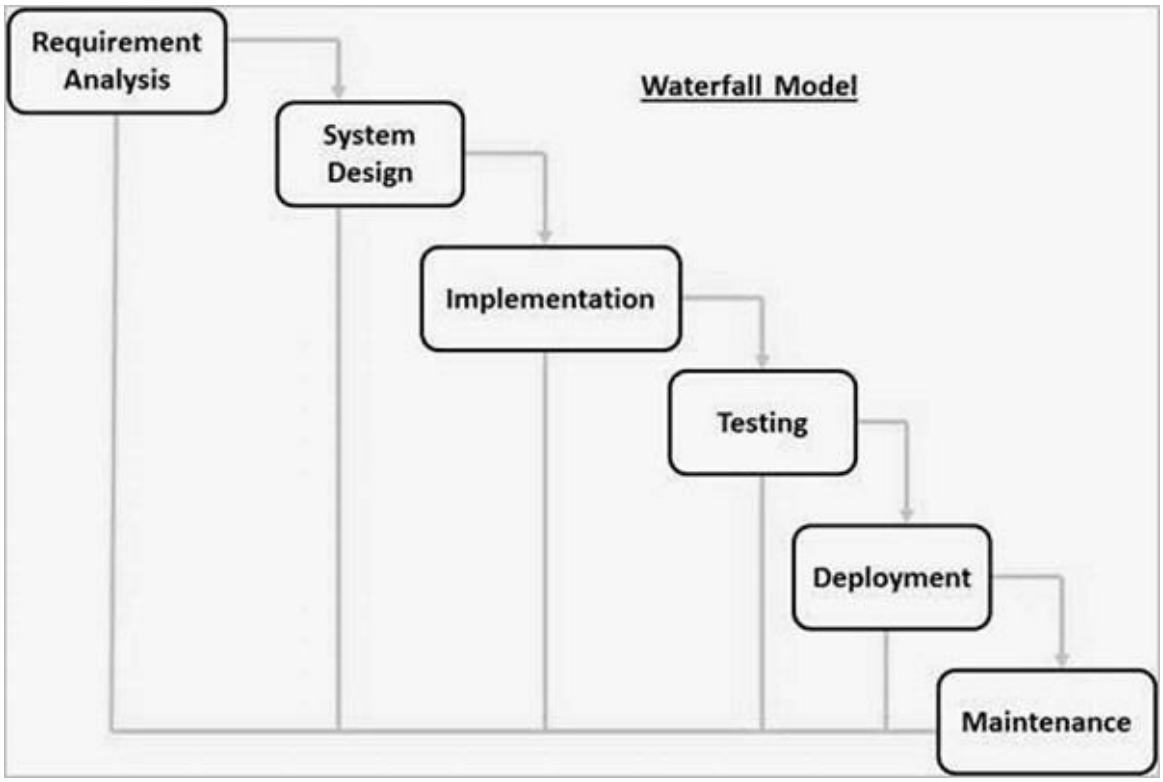

Fig 1: Waterfall Model

The Waterfall methodology was the first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

The Waterfall model is the earliest SDLC approach that was used for software development.

3.1 System Analysis

System Analysis refers into the process of examining a system with an intent to improving it through better procedure and methods. In this process planning of a new system to either replace or complement the existing system. It is therefore, the process of gathering and

interpreting the facts, diagnosing problems and using these information to improve the system. System Analysis is done with keeping following things in mind :-

- Evaluate the system concept for feasibility.
- Perform economic and technical analysis.
- Check the functions and the requirements are satisfied or not.
- Determine the schedule and cost for the project.

3.1.1 Requirement Analysis

i. Functional Requirements

In this part of analysis, we gathered the requirements for what the system must be able to do. If this system doesn't fulfill these requirements this system is bound to fail. This is because it will not be able to achieve something that it must do.

- Student and teacher must be able login/signup.
- Users should be able to search for the answers.
- Users must be able to post questions.
- Users must be able to answers the unanswered questions.
- Users must be able to send feedback.

ii. Non-Functional Requirement

Non-Functional Requirement describes general properties of a system. It is about understanding the qualities you want your system or software to have rather than just what it does. It includes things like readability, performance, usability and security. Here are some non-functional requirements.

1. **Usability**

   The website should be easy to use for even a non-technical user. A general user takes just 0.05 seconds to figure out whether the website is worth its time or not. Thus it is important to give attention to the design of your homepage, and properly link the other pages.

2. **Security**

   Security requirements ensures that the unauthorized access are not allowed to the system. This system protects the account of the users and make the user feel safe while using this system.

3. **Performance**

   This system has the good performance requirements. For instance, it doesn't take more than 10 seconds to match the username and password inserted for login.

3.1.2. Feasibility Analysis

A feasibility analysis serves as a crucial evaluation to determine the viability of a project or plan. Specifically, in the realm of software engineering, it focuses on assessing the technical and commercial feasibility of a software project before proceeding with its development.

The types of feasibility analysis are as follows:

1. **Technical Feasibility**

   In technical feasibility, we estimate if all the necessary technological resources for the success of the project. Since, this project doesn't have so many requirements and the technological resources needed for this project are available so this project is technically feasible.

2. **Operational Feasibility**

   In this project, the users will be able to post questions and get answers by other users and search for the answers. The admin will know the details of the each project where he may be presented.

3. **Economic Feasibility**

   The development of this project is highly economically feasible. We didn't spend much money for this project's development. The only thing needed to be done this project was to create an environment for the development with an effective supervision.

4. **Schedule Feasibility**

   This part includes the schedule and time allocated to complete the project. The Gantt chart is as follows :-

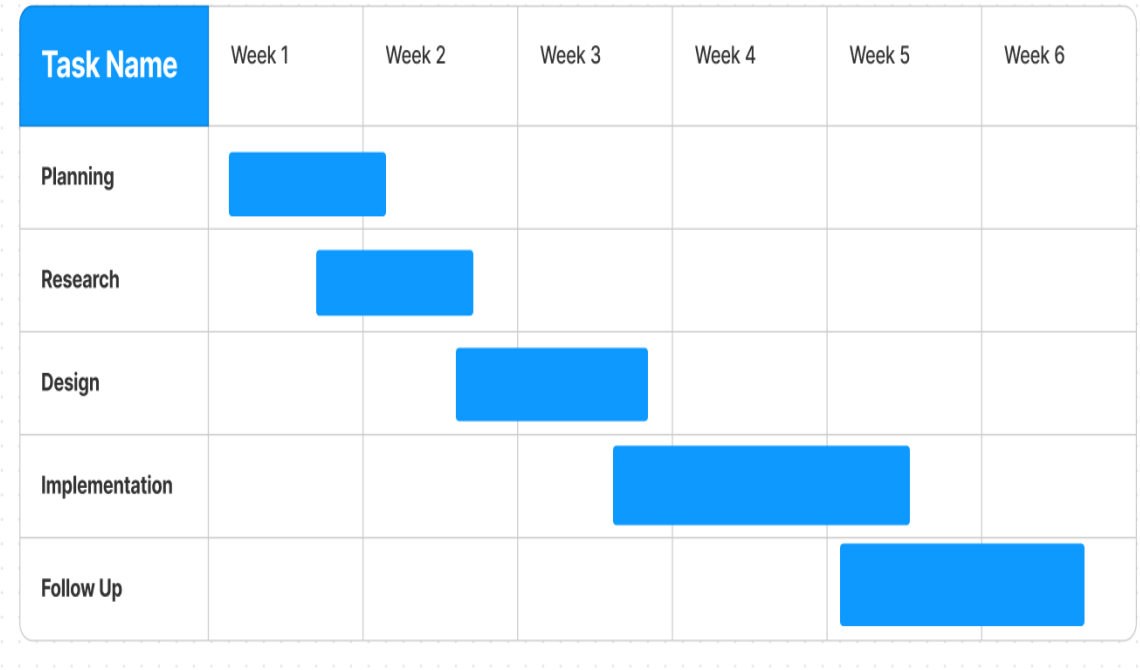

Fig 2: Gantt Chart

Chapter 4: Conclusion

4.1 Conclusion

While building this project we will be learning a lot of new things and sharpen our existing skills. An E-Learning Platform seems a promising integration of technology into educational field. During the research we learnt a lot of things that will help us built this project. We learnt that, despite the fact that we implement security, but there is always risk of data breach. But using security measures from both sides we can avoid the data breach and use the platform securely. By doing so we can at least be secure at some extinct.

With the vast growing use of the E-Learning Platform we can say that it has a bright future scope. Using this technology in education, the speed of searching can be reduced and the learning speed can be increased. We researched online and found some interesting fact about E-Learning Platforms.

They are as follows:- (radixweb, 2023)

- Since 2000, the eLearning industry has grown by 900%. And it's expected to triple by 2025.
- The global eLearning market is expected to reach $336.98 billion by 2026.
- The corporate eLearning industry is anticipated to expand by 15% a year, primarily due to corporate use of eLearning.
- After the pandemic, 47% of the businesses intended to integrate online and in-person instruction.
- By 2026, the corporate eLearning industry is expected to be worth $50 billion.

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