2. Requirements, Constraints, And Standards

2.1 REQUIREMENTS & CONSTRAINTS

2.1.1 Functional:

- A website interface
- Login page
    - Separate account types for students, teachers, and TAs
- Teacher privileges:
    - Create classes and generate a join code
    - Create quizzes for classes
    - Enable and disable quiz access immediately with the push of a button
    - Upload notes, images, videos, etc. as class material for students to view / download
    - Start online guide during a lecture which updates automatically as the professor goes forward in slides
- Student privileges:
    - Join classes using a class code
    - Submit questions in a forum
    - Answer student questions and respond to posts
- TA privileges
    - Respond to forum posts
- Forum style posts about class activities
    - Allow users to post anonymously or not
- Quizzes
    - Question types
        - Multiple choice
        - True/False
        - Fill in the blank
    - Grades
        - Saved for future use
    - Access set by teacher
        - Can decide when to open and restrict access to students
- Polls
    - Created by teachers
    - Responded to by students
- Upload documents
    - Supported file types
        - pdf, png, jpeg

2.1.2 Resource:

- Server to host the website
- Database to host user information

2.1.3 Aesthetic:

- Usable, quick interface
- Professional looking UI

2.2 Engineering Standards

Engineering standards are fundamental to the field as they ensure that a product not only meets requirements but also is safe. Standards allow for multiple people and teams of engineers to work together by providing a base level of capability and functionality to a piece of software and devices. These standards can also dictate how a device communicates with other devices, allowing integration. Safety standards are necessary to reduce the risks of using devices and software. This serves to protect the public and avoid spreading harm. An unsafe product is usually less helpful and less desirable than a safer product.

Top industries often adopt these standards to send out the highest-quality products. Following these standards will help us perform the best software practices and create a high-end, high-quality product that satisfies our customers.

These standards are very important when creating a software application. Many of these will already be incorporated due to the standard development process. Creating a roadmap to develop our program effectively and constantly checking with our client about the quality of the project are natural parts of building a piece of software.

Security measures will be taken to protect user data, such as names and sign-in information. Following the standards for security in software and cybersecurity will help keep user information safe.

Standards for architecture design will help ensure the product is maintainable and understandable by others working on this project in the future. Following standards will give others an idea of what to look for and how to find the information they are looking for.

2.2.1 ISO Standards:

- ISO 12207: This standard divides software processes into four main groups: agreement, organizational project-enabling, technical management, and technical processes. This is important in developing a software project as it acts as a roadmap for effective software development practices leading to a higher quality product.
- ISO 8601: This standard goes for consistency in date-time formatting. e.g. November 27, 2025, at 6:30 pm can be described as 2025-11-27 18:30:00:000. This will be an essential sddec25-10 standard for our project since keeping track of when something was posted will be a core component of our project.
- ISO 9000: This standard checks for the quality of products and services and consistency to meet customer expectations. This is important because it provides a globally recognized standard to help deliver high-quality products and improve the process of delivering the services consistently.
- ISO 9000:2015: This is the standard of fundamentals and vocabulary used in software products. It defines common terms like “customer,” “system,” and “policy.” By utilizing the terms used by the industry, outsiders looking at this project will be able to understand the goals and decisions behind the project. Common terminology reduces confusion among all involved and lets people convey more complex ideas succinctly.
- ISO 27000: This standard focuses on security and privacy protection. Following this standard is important because the customer’s data is important, and it should not easily be breached and stolen.