**Project**: Online study platform

This is an e-learning system that personalizes the learning experience for each student by adjusting content based on their performance, learning style and preferences.

It is solving a problem of lack of personalized learning. Most traditional education systems often provide the same material to students, regardless of their unique learning styles, preferences and performance levels. The platform solves this by tailoring content to individual needs, ensuring more effective learning outcomes.

The platform would assess students' interactions with the learning materials and adjust the curriculum or content delivery. This could include suggesting different types of media (e.g., videos, readings, quizzes), offering more in-depth explanations for weaker areas, or even increasing the difficulty of content as the student progresses.

**USE CASE DIAGRAMS**

Use-case diagrams model the behaviour of a system and help to capture the requirements of the system.

**Importance of use-case diagrams**

* They describe high-level functions and scope of a system.
* They also identify the interactions between the system and its actors.

Use-case diagrams can be helpful before starting a project, you can create use-case diagrams to model a business so that all participants in the project share an understanding of the workers, customers and the activities of the business.

They are also helpful while gathering requirements, you can create use-case diagrams to capture the system requirements an to present to others what the system should do.

**Components of use-case diagrams**

1. Use cases: a use case describes a function that a system performs to achieve the user’s goal.
2. Actors: an actor represents a role of a user that interacts with the system that you are modelling. The user can be a human user, an organization, a machine, or another external system.
3. Relationships: it is a connection between model elements. It defines the structure and behaviour between the model elements.
4. Subsystems: a component that represents large-scale components in the system that you are modeling. They represent independent, behavioural units in a system.

**SEQUENCE DIAGRAMS**

A sequence diagram is Unified Modeling language(UML) that illustrates the sequence of messages between objects in an interaction. A sequence diagram consists of a group of objects that are represented by lifelines, and the message that they exchange over time during the interaction.

**Importance of sequence diagrams**

* They show the sequence messages passed between objects.
* They also show the control structures between objects.

**Components of sequence diagrams**

1. Lifelines: they represent the objects that participate in an interaction. For example, in a study platform, lifelines can represent objects such as a student, teacher. Each instance in an interaction is represented by a lifeline.
2. Messages. Is an element that defines a specific king of communication between instances in an interaction.
3. Combined fragments: these are logical groupings, represented by a rectangle, which contain the conditional structures that affect the flow of messages.
4. Interaction uses: they enable you to reference other existing interactions.