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Batch: A2

Experiment No. 3

Aim: To identify scenarios and develop UML Use-Case and Class Diagrams for the project. **Title**:

MIND PREP

Theory:

1. **Use-case diagrams:**

In UML, use-case diagrams model the behavior of a system and help to capture the requirements of the system.

Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in usecase diagrams describe what the system does and how the actors use it, but not how the system operates internally. Use-case diagrams illustrate and define the context and requirements of either an entire system or the important parts of the system.

- Use cases: A use case describes a function that a system performs to achieve the user's goal. A use case must yield an observable result that is of value to the user of the system.
- Actors: An actor represents a role of a user that interacts with the system that you are modeling. The user can be a human user, an organization, a machine, or another external system.
- Subsystems: In UML models, subsystems are a type of stereotyped component that represent independent, behavioral units in a system. Subsystems are used in class, component, and use-case diagrams to represent large-scale components in the system that you are modeling.
- Relationships in use-case diagrams: In UML, a relationship is a connection between model elements. A UML relationship is a type of model element that adds semantics to a model by defining the structure and behavior between the model elements.

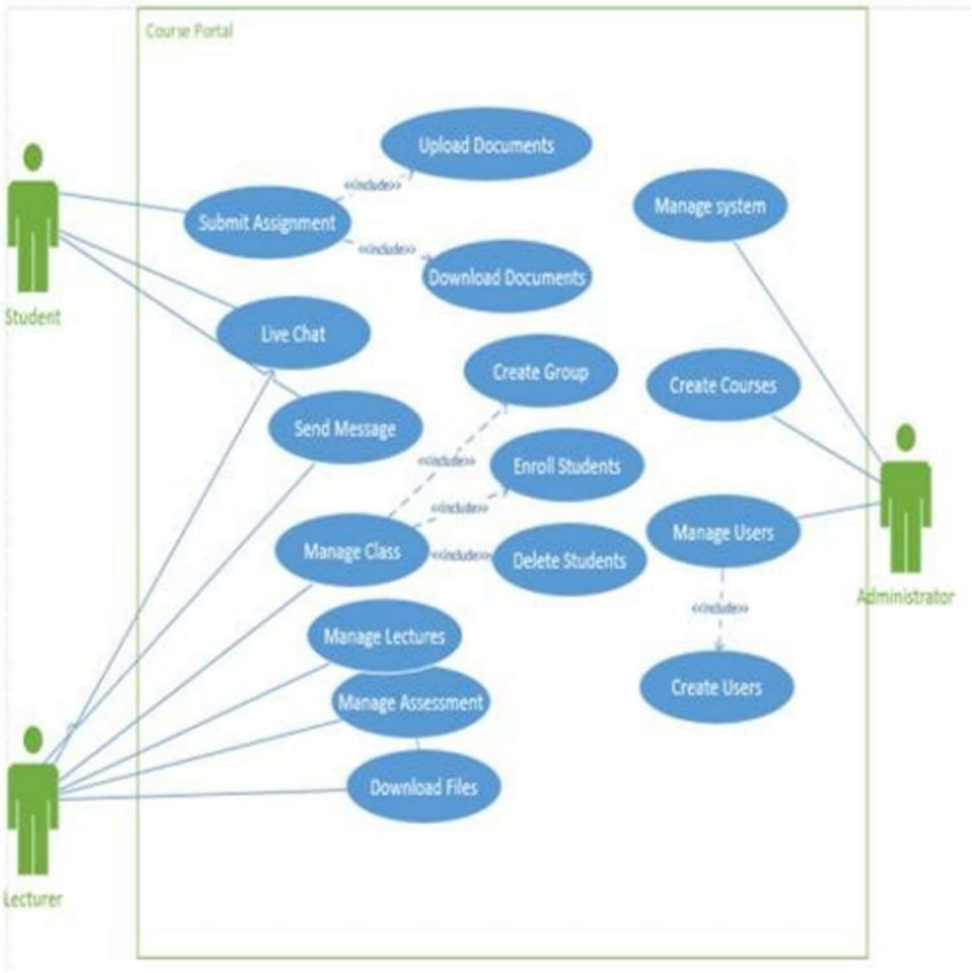
2. **Class diagrams:**

Class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.

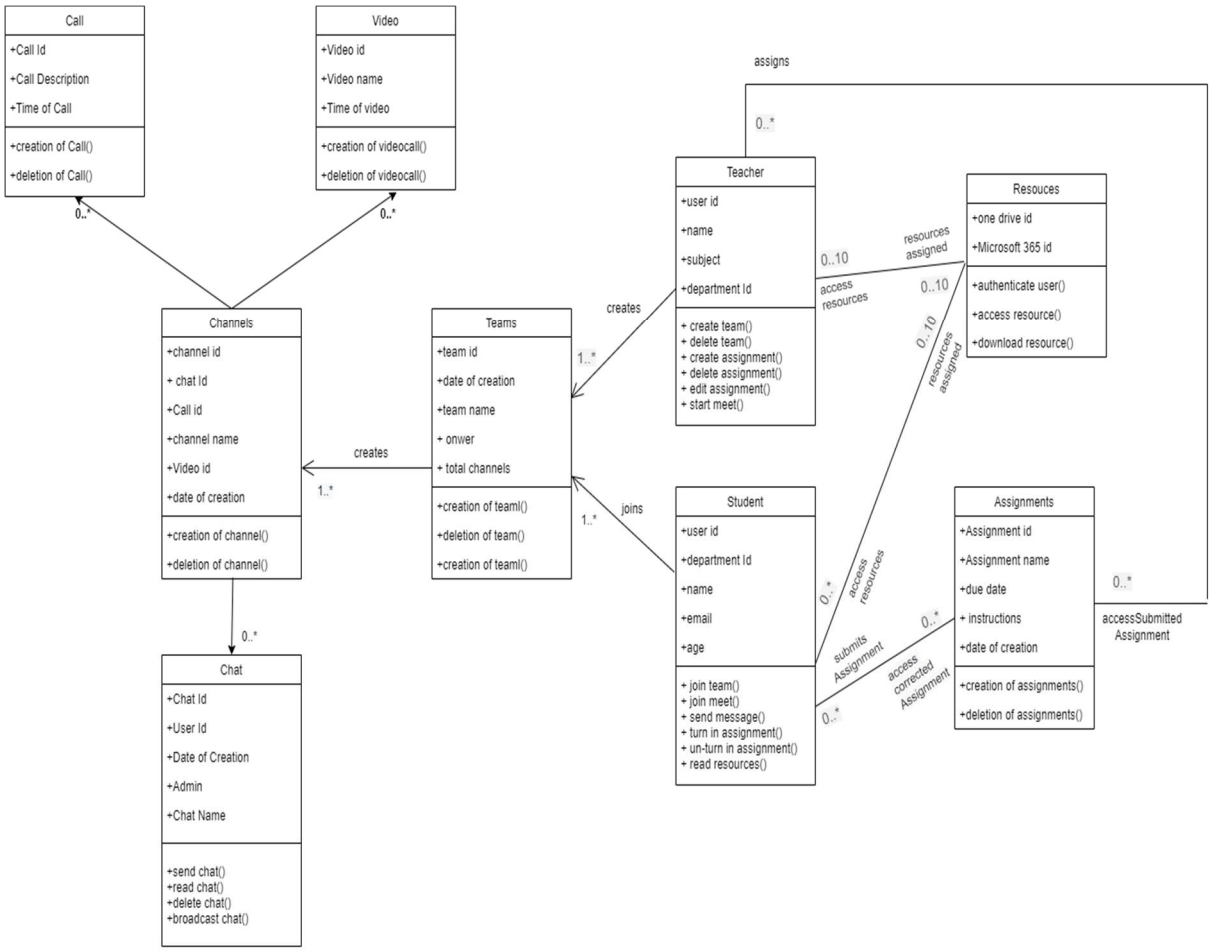
Class diagram describes the attributes and operations of a class and the constraints imposed on the system. The class diagrams are widely used in the modeling of object-oriented systems because they are the only UML diagrams, which can be mapped directly with object-oriented languages. Class

diagram shows a collection of classes, interfaces, associations, collaborations, and constraints. It is also known as a structural diagram.

Use-case diagram for MINDPREP:



Class diagram for MINDPREP:



Conclusion:

In this experiment we implemented and understood the use-case diagram as well as the class diagram for MindPrep system. The actors identified are teachers,students,resources. The UML use-case diagram summarizes the details of our system's users and their interactions with the system. The class diagram depict the structure of our software and describe what must be present in the system being modelled.