Assignment No. 6

**Title:-** Object Oriented Analysis of Project

**Theory**:-

Object-Oriented Analysis (OOA) is a software engineering approach that helps in understanding the requirements and designing software systems using the principles of object-oriented programming. In the context of an Learning Management System (LMS) app, you can apply Object-Oriented Analysis using various methodologies like OMT (Object Modeling Technique) or OOD (Object-Oriented Design). Below is an example of how OMT can be applied to an LMS app:

**Object-Oriented Analysis using OMT for an LMS App**

Identify Objects and Classes

In OOA, you begin by identifying the objects and classes relevant to the LMS app. In the case of an LMS, typical objects might include `Course`, `User`, `Assignment`, `Quiz`, `Discussion`, etc. Classes for these objects are identified, and their attributes and methods are defined.

- Class: Course

- Attributes: Course Title, Description, Instructor, Students, Lessons

- Methods: AddStudent(), RemoveStudent(), AddLesson()

- Class: User

- Attributes: User ID, Name, Email, Courses

- Methods: EnrollInCourse(), ViewCourse(), SubmitAssignment()

**Define Object Relationships**

OMT helps in defining the relationships between objects. In the LMS app, you would establish relationships like:

- A `User` can enroll in multiple `Courses`.

- A `Course` can have multiple `Students`.

- A `Course` can have multiple `Lessons`.

**Use Case Analysis**

OMT allows you to create use cases for the system. For an LMS app, these could include:

- Use Case: Enroll in a Course

- Actor: Student

- Description: A student can enroll in a course.

- Main Scenario:

1. Student selects a course to enroll.

2. System adds the student to the course's student list.

3. System sends a confirmation.

- Use Case: Submit Assignment

- Actor: Student

- Description: A student can submit assignments.

- Main Scenario:

1. Student selects a course and assignment.

2. Student uploads the assignment.

3. System records the submission.

**Identify Attributes and Methods**

Attributes and methods are defined for each class. For example:

- Class: Assignment

- Attributes: Title, Description, Due Date, Max Score

- Methods: Submit(), Grade()

Create Class Diagrams

OMT involves creating class diagrams that visually represent classes and their relationships. Here's a simplified example: