

Case Study

❖ Case Study: Student Management System (SMS)

→ **Goal:** To manage student records, course enrollment, and report generation.

1) Presentation Layer (UI Layer)

➤ Function:

- Allows users to interact with the system.
- Shows data like student profiles, courses, and grades.
- Sends user input (e.g., login form, course registration) to the backend.

➤ Example:

- A student logs in by entering a username and password.
- The dashboard shows their courses and grades.

2) Business Logic Layer (Middle Layer)

➤ Function:

- Processes user input from the UI.
- Applies rules (e.g., check if a course is full).
- Communicates with the database layer.

➤ Example:

- When a student registers for a course:
 - Check if the student is eligible.
 - Check if the course has available seats.
 - Proceed if both checks pass.

3) Data Access Layer (Database Layer)

➤ Function:

- Interacts with the database.
- Performs actions like fetching, inserting, or updating data.

➤ Example:

- Fetch the list of courses from the database.
- Save a new student's information.

Layer	Main Role
Presentation Layer	UI interaction
Business Logic Layer	Processes logic, rules
Data Access Layer	Communicates with DB