# 2.8 Assumptions and Dependencies

## Assumptions

1. The client has agreed to provide the necessary resources and licenses for software and tools used in the project, including but not limited to React.js development tools, Node.js environment, PostgreSQL and MongoDB licenses (if needed). It is assumed that this decision will remain unchanged during future phases of software development.
2. The client’s end-users will primarily operate the system on Windows 7, Windows 8, or newer versions for desktop access, and Android 10+ for mobile access.
3. Users have basic knowledge of how to operate a web browser or mobile application, as the system is designed for standard usage without extensive technical training.
4. Internet connectivity is assumed to be available for proper synchronization between the web application, mobile app, and backend services.

## Dependencies

1. Frontend Dependencies: React.js for web interface development; Material-UI / Tailwind CSS for styling; Axios / Fetch API for communication with backend REST APIs
2. Backend Dependencies: Node.js and Express.js for REST API; bcrypt for password encryption; jsonwebtoken (JWT) for authentication; Multer for file uploads.
3. Database Dependencies: PostgreSQL for structured data (users, courses, exams, grades); MongoDB for unstructured data (videos, PDFs).
4. Mobile App Dependencies: Flutter framework for cross-platform mobile application; Integration with REST API backend.
5. Optional / Future Dependencies: AI Chatbot API for intelligent tutoring; Google Meet API for live classes; WebRTC or similar libraries for exam monitoring or recording.