

Requirement Analysis Phase

Data Flow Diagram & User Stories

Field	Details
Date	21 February 2026
Team ID	LTVIP2026TMIDS47806
Project Name	LearnHub: Your Center for Skill Enhancement
Individual Member	C. Karthik
Maximum Marks	4 Marks

Data Flow Description

The OLP application follows a three-tier architecture. Data flows as described below:

1. Client (React + Vite) sends HTTP requests via Axios to the Express.js REST API.
2. authMiddleware.js verifies JWT tokens on protected routes before passing to controllers.
3. Controllers interact with MongoDB via Mongoose models (Users, Courses collections).
4. Responses are returned as JSON and rendered dynamically in the React UI.

Actor	Data Flow	Collection Affected
Student	Register → Login → Browse Courses → Enroll/Purchase → Track Progress → Get Certificate	users, courses
Teacher	Login → Add Course → Add Sections → Delete Course (if no enrollments)	users, courses
Admin	Login → View All Users → Manage All Courses → View Enrollment Records	users, courses

User Stories

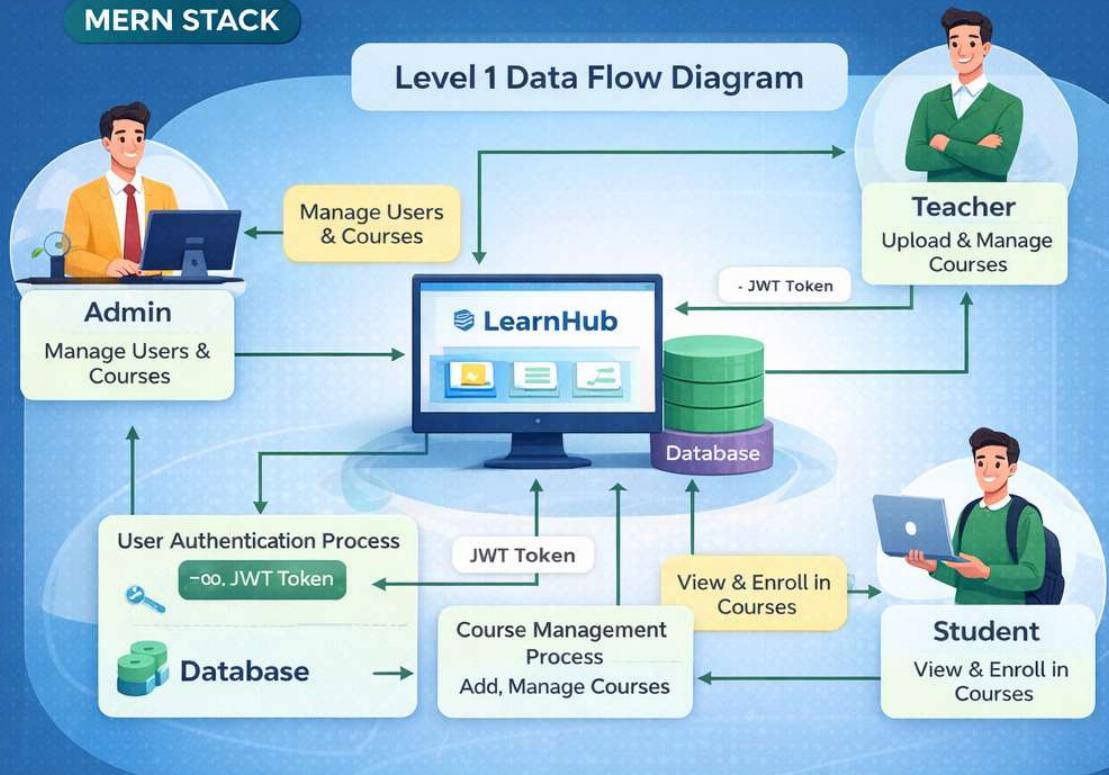
User Type	Epic	USN	User Story / Task	Acceptance Criteria	Priority	Release
Student	Registration	USN-1	As a student, I can register with name, email, password and role	Can access dashboard after registration	High	Sprint-1
Student	Login	USN-2	As a student, I can log in with email & password	JWT token issued;	High	Sprint-1

				dashboard accessible		
Student	Course Discovery	USN-3	As a student, I can search/filter courses by name and category	Filtered results appear correctly	High	Sprint-1
Student	Enrollment	USN-4	As a student, I can enroll in a free course or purchase a paid course	Enrolled status saved; course accessible	High	Sprint-1
Student	Progress	USN-5	As a student, I can resume a course from where I stopped	Last section position saved correctly	Medium	Sprint-2
Student	Certificate	USN-6	As a student, I can download a certificate after completing a course	Certificate available on 100% completion	Medium	Sprint-2
Teacher	Course Mgmt	USN-7	As a teacher, I can add a new course with title, description, category, and price	Course appears in student listing	High	Sprint-1
Teacher	Course Mgmt	USN-8	As a teacher, I can add sections to my course	Sections visible in course detail page	High	Sprint-1
Teacher	Course Mgmt	USN-9	As a teacher, I can delete a course if no students are enrolled	Course removed; enrolled check enforced	Medium	Sprint-2
Admin	User Mgmt	USN-10	As an admin, I can view all users and their roles on the platform	Full user list visible in admin panel	High	Sprint-1
Admin	Course Mgmt	USN-11	As an admin, I can edit or delete any course on the platform	Changes reflected immediately	High	Sprint-2

LEARNHUB DATA FLOW DIAGRAM & USER STORIES

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Level 1 Data Flow Diagram



User Stories



Admin

- Manage users
- Approve or remove courses
- Monitor system activity
- Manage teachers and students



Teacher

- Create courses
- Upload course materials
- Update course details
- Delete course if needed



Student

- Register an account
- Login securely
- View available courses
- Enroll in courses
- Track enrolled courses