API Development and Integration Report

Date	27-06-2025
Team ID	LTVIP2025TMID47699
Project Name	Project - HouseHunt

Project Title: HouseHunt
Date: 27-06-25

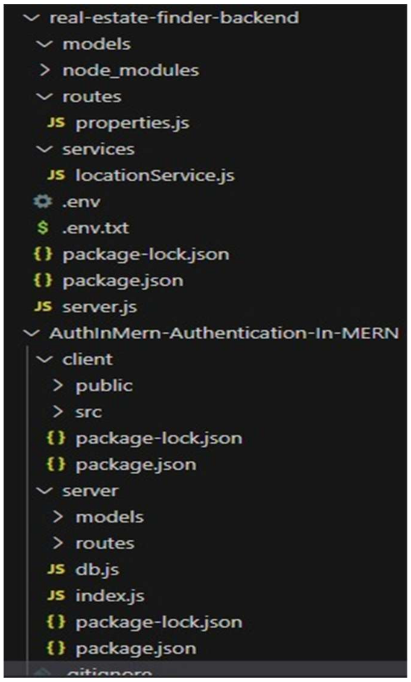
Objective

The objective of this report is to document the API development progress and key aspects of the backend services implementation for the HouseHunt project.

Technologies Used

- **Backend Framework:** Node.js with Express.js
- **Database:** MongoDB
- **Authentication:** JWT (JSON Web Token)

Project Structure



```
v real-estate-finder-backend
  v models
  > node_modules
  v routes
    JS properties.js
  v services
    JS locationService.js
  .env
  $ .env.txt
  {} package-lock.json
  {} package.json
  JS server.js
v AuthInMern-Authentication-In-MERN
  v client
    > public
    > src
    {} package-lock.json
    {} package.json
  v server
    > models
    > routes
    JS db.js
    JS index.js
    {} package-lock.json
    {} package.json
  .gitignore
```

Key Directories and Files

1. **/controllers**
   - Contains functions to handle requests and responses.
2. **/models**
   - Includes Mongoose schemas and models for MongoDB collections.
3. **/routes**
   - Defines the API endpoints and links them to controller functions.
4. **/middlewares**
   - Custom middleware functions for request processing.
5. **/config**
   - Configuration files for database connections, environment variables, etc.
6. **/services**

- Contains external service integration logic, such as the Street Map API.

API Endpoints
A summary of the main API endpoints and their purposes:

User Authentication

- **POST /api/user/register -** Registers a new user.
- **POST /api/user/login -** Authenticates a user and returns a token.

User Management

- **GET /api/user/-** Retrieves user information by ID.
- **PUT /api/user/-** Updates user information by ID.

Workout Plans

- **GET /api/workoutplans -** Retrieves all workout plans.
- **POST /api/workoutplans -** Creates a new workout plan.

Equipment

- **GET /api/equipment -** Retrieves all equipment.
- **POST /api/equipment -** Adds new equipment.

Monthly Plans

- **GET /api/monthlyplans** - Retrieves all monthly plans.
- **POST /api/monthlyplans -** Creates a new monthly plan

Street Map Integration

- **GET /api/streetmap** - Retrieves map data for specified locations using the Street Map API.

- **POST /api/streetmap -** Fetches and stores new map data from the Street Map API.

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Integration with Frontend

The backend communicates with the frontend via RESTful APIs. Key points of integration include:

- **User Authentication:** Tokens are passed between frontend and backend to handle authentication.
- **Data Fetching:** Frontend components make API calls to fetch necessary data for display and interaction.

Error Handling and Validation

Describe the error handling strategy and validation mechanisms:

- **Error Handling:** Centralized error handling using middleware.
- **Validation:** Input validation using libraries like Joi or express-validator.

Security Considerations

Outline the security measures implemented:

- **Authentication:** Secure token-based authentication.
  Data Encryption: Encrypt sensitive data at rest and in transion