WEB X CA

PREREQUISITES - TASKMATE

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Prerequisites Document for TaskMate

Introduction
TaskMate is a comprehensive and user-friendly task management application designed to help individuals and teams organize, track, and collaborate on tasks efficiently. Built with Angular for the frontend and Python Flask for the backend, TaskMate leverages MongoDB for data storage, ensuring a robust and scalable solution. The application features secure authentication, detailed dashboards, admin controls, and analytics, making it suitable for both personal productivity and team project management.

System Requirements
Hardware Requirements
- Processor: Intel Core i5 / AMD Ryzen 5 or higher (dual-core, 2.0 GHz or faster)
- RAM: Minimum 8GB (16GB recommended)
- Storage: At least 1GB free space (256GB SSD recommended)
- Network: Stable internet connection (especially for MongoDB Atlas users)

Software Requirements
- Operating System: Windows 10/11, macOS 10.15+, or Ubuntu 20.04+
- Code Editor: Visual Studio Code or compatible IDE
- Version Control: Git 2.25+ installed and configured

Technology Stack Prerequisites

Component	Technology	Minimum Version
Frontend	Node.js	LTS (16.x+)
	npm	8.x+
	Angular CLI	16.x+
Backend	Python	3.8+
	Flask	As per requirements.txt
Database	MongoDB	4.x+ (local or Atlas)
Other	Git	2.25+

Setup Instructions
1. Node.js and Angular CLI
   - Download and install Node.js (LTS) from the official website.
   - Verify installation:

node -v
npm -v

   - Install Angular CLI globally:

npm install -g @angular/cli
ng version

2. Python 3.8+ and Virtual Environment
   - Download and install Python 3.8+ from the official website.
   - During installation (Windows), check "Add Python to PATH".
   - Verify installation:

python --version
pip --version
   - (Optional) Create a virtual environment:

python -m venv venv

 # Activate:
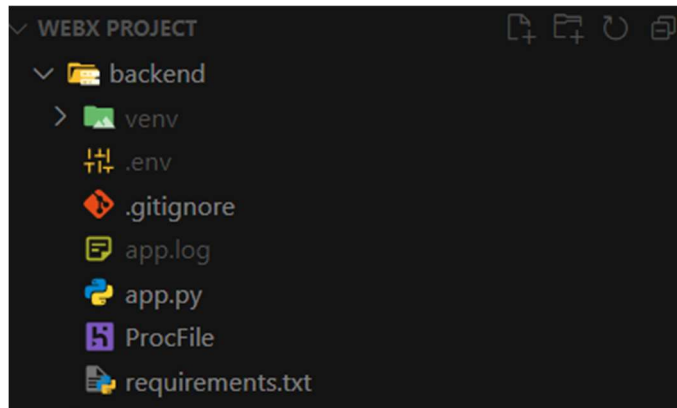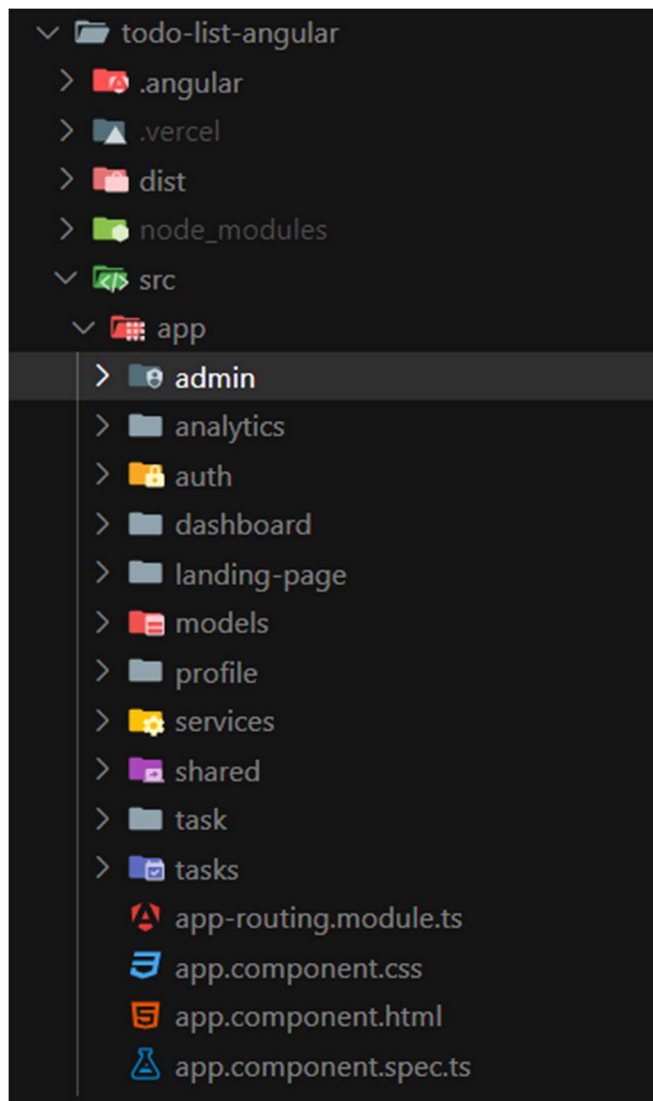*# Windows:*
venv\Scripts\activate

 # macOS/Linux:
source venv/bin/activate

3. MongoDB (Local or Cloud)
- Local: Download MongoDB Community Edition from the [MongoDB website](#) and follow installation instructions.
- Cloud: Create a free cluster on [MongoDB Atlas](#), set up a database, and obtain the connection string for use in your Flask backend.

Project Structure

```
todo-list-angular
  .angular
  .vercel
  dist
  node_modules
  src
    app
      admin
      analytics
      auth
      dashboard
      landing-page
      models
      profile
      services
      shared
      task
      tasks
      app-routing.module.ts
      app.component.css
      app.component.html
      app.component.spec.ts
```

Project Setup
Backend Setup
    1. Navigate to the backend folder:

cd backend
    2. (Optional) Activate your virtual environment.
    3. Install dependencies:

pip install -r requirements.txt
    4. Start the Flask server:

python app.py
- Backend will run at: http://localhost:5000

Frontend Setup
    1. Navigate to the frontend folder:

cd todo-list-angular
    2. Install dependencies:

npm install
    3. Start the Angular development server:

ng serve
- Frontend will run at: http://localhost:4200

Conclusion
By ensuring your system meets these prerequisites and following the setup instructions, you will be fully equipped to run TaskMate efficiently. Proper installation and configuration of Node.js, Angular CLI, Python, and MongoDB are essential for seamless integration between the frontend, backend, and database. Once these steps are complete, you'll be ready to experience the full capabilities of the TaskMate task management system.