

## CA - Prerequisites Document

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TITLE : DMart

### INTRODUCTION

The **DMart Clone** project is a **full-stack e-commerce web application** built using **React (TypeScript) for the frontend**, **Flask for the backend**, and **MongoDB as the database**. This document outlines the prerequisites required before setting up and running the project successfully.

### SYSTEM REQUIREMENTS

#### 1. Hardware Requirements

- **Processor:** Intel Core i5 or higher
- **RAM:** Minimum 8GB (Recommended: 16GB for smooth performance)
- **Storage:** At least 10GB free disk space
- **Operating System:** Windows 10/11, macOS, or Linux

#### 2. Software Requirements

- **Node.js** (v18.16.1 or later) – Required for running the React frontend
- **npm** (v9.5.1 or later) – For managing frontend dependencies
- **Python** (3.11.9 or later) – Required for Flask backend
- **MongoDB Atlas** – Cloud-based NoSQL database
- **VS Code** – Recommended IDE for both frontend and backend development
- **Postman** – For API testing

## TECHNOLOGY STACK

### 1. Frontend

- **React.js** (JavaScript library for building UI)
- **TypeScript** (Strongly typed JavaScript)
- **Tailwind CSS** (Utility-first CSS framework for styling)

### 2. Backend

- **Flask** (Python-based web framework)
- **Flask-CORS** (To handle cross-origin requests)
- **PyMongo** (For MongoDB connection)

### 3. Database

- **MongoDB Atlas** (Cloud-based NoSQL database for storing product details)

## SETUP INSTRUCTIONS

### 1. Install Node.js and NPM

Download and install Node.js from [Node.js Official Website](#).

Verify installation:

```
node -v
```

```
npm -v
```

### 2. Install Python and Flask

Download and install Python from the [Python Official Website](#).

Verify installation:

```
python --version
```

```
pip --version
```

Install Flask and required dependencies:

```
pip install flask flask-cors pymongo
```

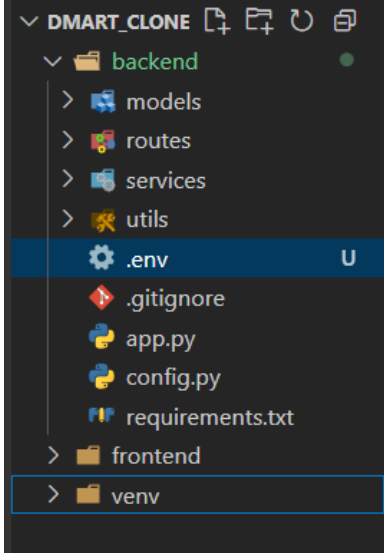
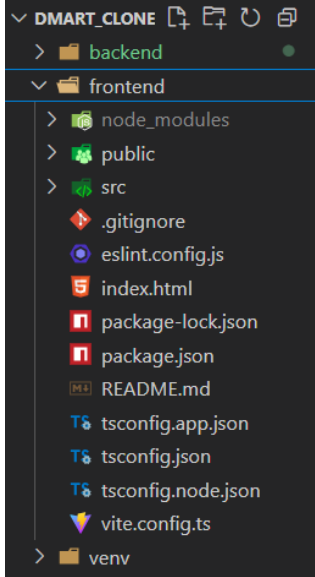
### 3. Setup MongoDB

Use **MongoDB Atlas** for cloud storage or install **MongoDB locally** from [MongoDB Official Website](#).

If using a local setup, start MongoDB using:

```
mongod --dbpath /path/to/data
```

## PROJECT STRUCTURE

Backend	Frontend
	

## CONCLUSION

This document provides the necessary prerequisites for setting up the **DMart Clone** project, including hardware/software requirements. Ensuring all dependencies and configurations are correctly set up will help in running the project efficiently.