TaskList Manager Web Service - Project Documentation

# Project Overview

The TaskList Manager is a .NET 6 Web API that allows users to manage a list of tasks with the following functionality:  
- Add New Tasks  
- List All Tasks with calculated fields  
- Get Task by ID with calculated fields  
- Delete Task by ID  
- Derived fields such as End Date, Due Date, Days Overdue, and Days Late are dynamically calculated based on task details  
The service uses a clean separation of concerns with Controller and Service layers.

# Tools & Technologies

Tool/Technology | Purpose  
-----------------|----------------------------------------  
.NET 6 | Web API framework   
C# | Programming language   
MockAPI.io   
Postman

# Step-by-Step Project Creation Process

## Step 1: Project Initialization

* Creation of the web API application using the visual studio GUI for creation of projects.

## Step 2: Project Structure

Create the following folders within the project:  
Controllers/  
Models/  
Services/  
Common/

## Step 3: Model Definition

Creation of models, response classes and the setup of the auto mapper for mapping entities

## Step 4: Service Layer

Define Services/ITaskService.cs and Services/TaskService.cs to handle business logic.

## Step 5: Controller Layer

Create Controllers/TaskController.cs to expose the API endpoints.

## Step 6: Program Configuration

Configure Program.cs to register services and map controllers.

## Step 7: Testing the API

Run the project and test endpoints using Swagger.

# Project Architecture Summary

TaskListManager/  
├── Controllers/   
├── Models/   
├── Services/   
├── Common/   
└── Program.cs

# Conclusion

This project implements a simple and clean Web API in .NET 6 following service-oriented principles   
- Integration with MockAPI.io  
- Persistent storage with a real database (EF Core)(Optional, but included the repository pattern for future expansion.  
- Validation and error handling  
- Unit and Integration Tests