**Minimal API - Todo list manager (CRUD)**

**Minimal API:**

* Minimal API refers to a lightweight and simplified approach to building web APIs (Application Programming Interfaces). It is a concept that gained popularity with the release of .NET 6, Microsoft's open-source, cross-platform framework.
* Traditionally, developing APIs in frameworks like ASP.NET involved creating a complex infrastructure with various components and configurations. Minimal API, on the other hand, streamlines the process by reducing the amount of boilerplate code and configuration required to build an API.
* The key idea behind Minimal API is to provide a concise syntax and a more intuitive programming model for defining APIs. It focuses on simplicity, readability, and ease of use, allowing developers to quickly create APIs with minimal ceremony.
* With Minimal API, you typically define your API routes and endpoints using a single file or a small set of files. It eliminates the need for a separate startup file or extensive configuration files. This approach promotes a more straightforward and cohesive development experience.
* Minimal API leverages the concept of "convention over configuration," meaning that it makes certain assumptions about the API's structure and behavior, reducing the need for explicit configuration. This approach helps to reduce the cognitive load on developers and accelerates the development process.
* Additionally, Minimal API simplifies common API tasks like routing, model binding, and request handling. It provides a set of attributes and helper methods that enable developers to define routes, specify HTTP methods, access request data, and process responses with ease.
* One of the significant advantages of Minimal API is its reduced learning curve. Developers who are familiar with .NET and C# can quickly grasp the Minimal API concepts and start building APIs without extensive training or documentation.
* Overall, Minimal API offers a lightweight, expressive, and easy-to-use approach to building web APIs. By minimizing ceremony and focusing on simplicity, it aims to streamline the API development process and improve developer productivity.

**Features of Minimal API:**

* Lightweight and faster compared to APIs with Controllers (MVC)
* Customization and Control – It gives you better control of the structure of your APIs  
  (Note: Watch out for complexity)
* Route Handlers are usually in the form of methods that get executed when the route has a match. These route handler methods have the flexibility of different types, like a static, instantiable, local function, or lambda expression.
* Parameter Bindings that help in translating the web data requests to strongly typed parameters
* Endpoint Filters that can support and help with logging management in our code
* Route Group Filters used for filtering capabilities of route groups
* Authentication features for security
* Unit Testing
* Open API (Swagger) support

**Technical Details:**

* Used Minimal API technology to implement this Todo list manager application api.
* Used In-memory database to store data.
* Used Swagger UI to test Minimal API endpoints.
* Used Entity Framework Core In Memory to perform database operations.

**Application Details:**

It is an API code to handle the http request and response for the Web application, Desktop app, etc,...

**Functionalities Covered in this App:**

Todo list items contains ID, Name, IsComplete properties.

* Get All Todo list items.
* Get Completed Todo list items.
* Get Todo list item by ID.
* Add Todo list item.
* Update Todo list item by ID.
* Delete Todo list item by ID.
* Get total number of Todo list item.