Structuring Your Minimal API

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Coming Up

Establishing the problem

Investigating options for structuring minimal APIs

Options for Structuring Minimal APIs

Options for Structuring Minimal APIs

Using methods instead of inline handlers

Using Methods Instead of Inline Handlers

Improves maintainability and testability

Program.cs

```
// existing code
dishesEndpoints.MapGet("", async Task<Ok<IEnumerable<DishDto>>> (
    DishesDbContext dishesDbContext,
    IMapper mapper,
    ClaimsPrincipal claimsPrincipal,
    string? name) =>
{
    Console.WriteLine($"User authenticated? {claimsPrincipal.Identity?.IsAuthenticated}");

    return TypedResults.Ok(mapper.Map<IEnumerable<DishDto>>(await dishesDbContext.Dishes
        .Where(d => name == null || d.Name.Contains(name)).ToListAsync()));
});
```

Using Methods Instead of Inline Handlers

Improves maintainability and testability

Program.cs

```
// improved code
dishesEndpoints.MapGet("", GetDishesAsync);

async Task<Ok<IEnumerable<DishDto>>> GetDishesAsync(
    DishesDbContext dishesDbContext,
    IMapper mapper,
    ClaimsPrincipal claimsPrincipal,
    string? name)
{
    Console.WriteLine($"User authenticated? claimsPrincipal.Identity?.IsAuthenticated}");

    return TypedResults.Ok(mapper.Map<IEnumerable<DishDto>>(await dishesDbContext.Dishes
        .Where(d => name == null || d.Name.Contains(name)).ToListAsync()));
}
```

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Separating handler methods out in classes

Separating Handler Methods Out in Classes

Cleans up Program.cs

DishesHandlers.cs

```
public static class DishesHandlers
{
    public static async Task<Ok<IEnumerable<DishDto>>> GetDishesAsync(
        DishesDbContext dishesDbContext,
        IMapper mapper,
        ClaimsPrincipal claimsPrincipal,
        string? name)
    {
        …
    }
}
```

Separating Handler Methods Out in Classes

Cleans up Program.cs

Program.cs

```
dishesEndpoints.MapGet("", DishesHandlers.GetDishesAsync);
```

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Extending `IEndpointRouteBuilder`

Extending IEndpointRouteBuilder

Improves code structure

EndpointRouteBuilderExtensions.cs

```
public static class EndpointRouteBuilderExtensions
{
    public static void RegisterDishesEndpoints(
        this IEndpointRouteBuilder app)
    {
        var dishesEndpoints = app.MapGroup("/dishes");

        dishesEndpoints.MapGet("",  async Task<Ok<IEnumerable<DishDto>>> GetDishesAsync(
             DishesDbContext dishesDbContext,
             IMapper mapper,
             ClaimsPrincipal claimsPrincipal,
             string? name)
             { … });
     }
}
```

Extending IEndpointRouteBuilder

Improves code structure

Program.cs

```
app.RegisterDishesEndpoints();

// other extension methods
app.RegisterIngredientsEndpoints();
```

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Extending `IEndpointRouteBuilder`

Combining 1, 2 and 3

Combine the Previous Approaches

Improves testability, maintainability, reusability and overall code structure

EndpointRouteBuilderExtensions.cs

```
public static class EndpointRouteBuilderExtensions
{
    public static void RegisterDishesEndpoints(this IEndpointRouteBuilder app)
    {
        var dishesEndpoints = app.MapGroup("/dishes");
        var dishWithGuidIdEndpoints = dishesEndpoints.MapGroup("/{dishId:guid}");

        dishesEndpoints.MapGet("", DishesHandlers.GetDishesAsync);
        dishWithGuidIdEndpoints.MapGet("", DishesHandlers.GetDishByIdAsync);
        dishesEndpoints.MapGet("/{dishName}", DishesHandlers.GetDishByDishNameAsync);
    }
}
```

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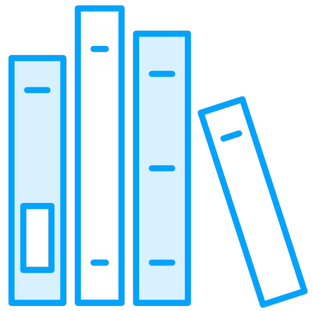

3rd party libraries

Options for Structuring Minimal APIs

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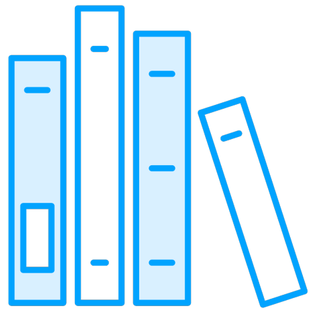

3rd party libraries

Other approaches

Demo

Extending `IEndpointRouteBuilder` to structure your minimal API

Summary

Different options exist for structuring your minimal API code

- A good option is extending `IEndpointRouteBuilder`, combined with endpoint handlers as methods in separate classes

Up Next:

Handling Exceptions and Logging