Adding an API Using ASP.NET Core

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Overview

Creating the API project

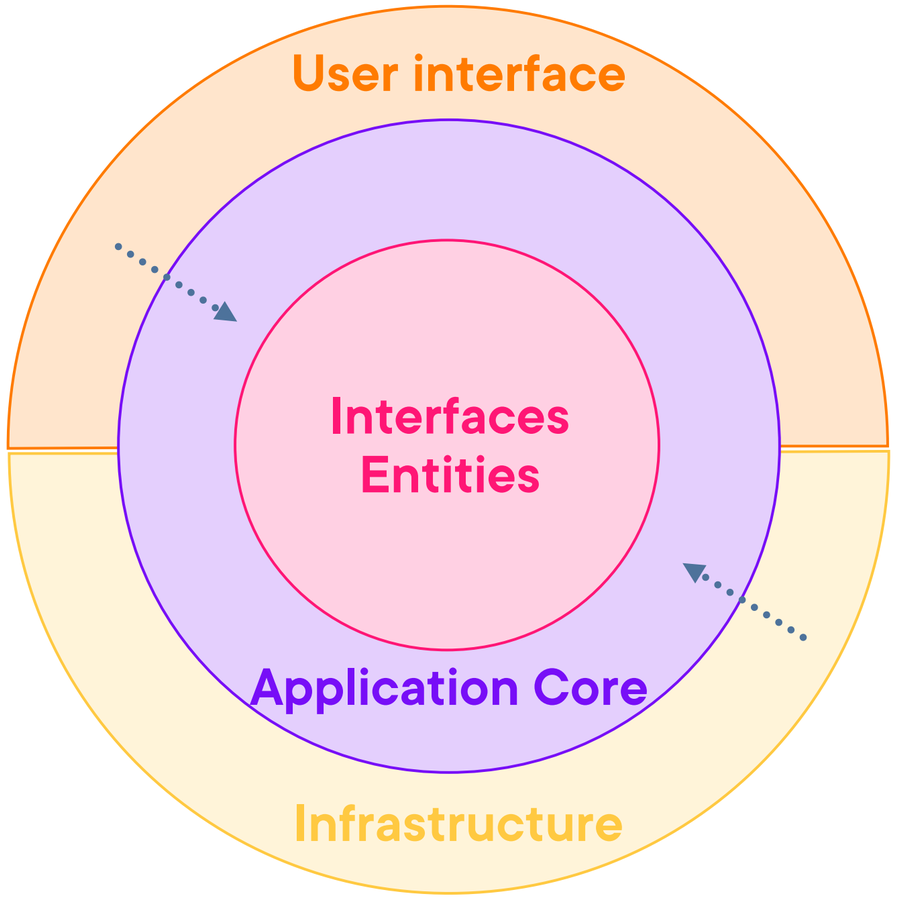
Transitioning from view services to MediatR

Deciding which objects to return

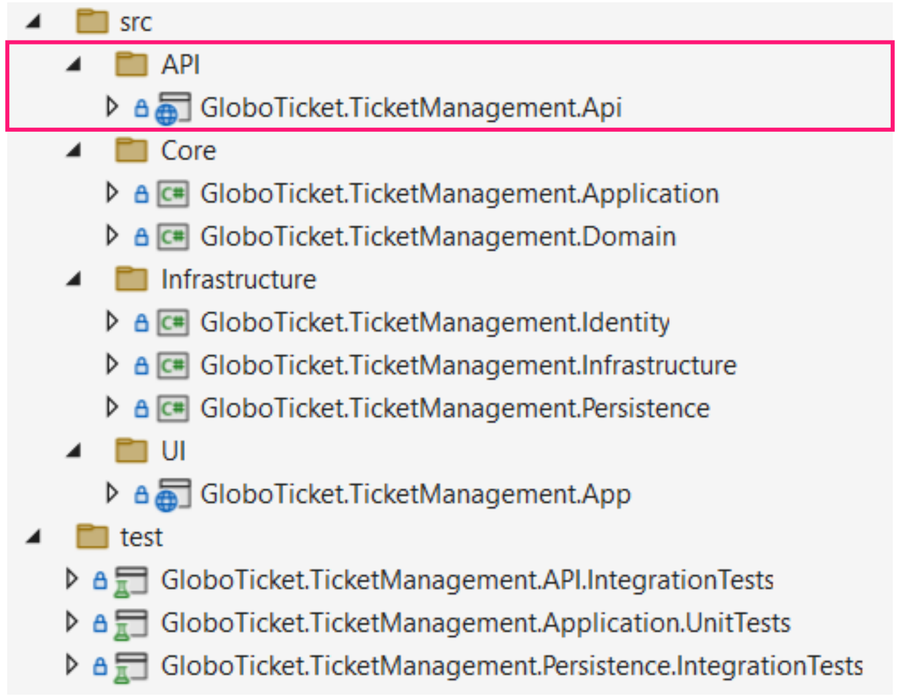
Exposing the API functionality using Swagger

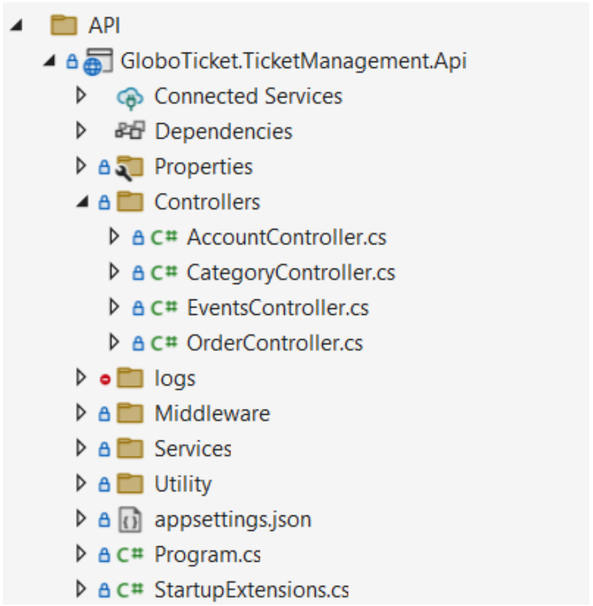
Creating the API Project

Bringing in the “User Interface”



The API in Our Architecture





ASP.NET Core API

Program configuration

- Calls to other project ServiceCollection extensions

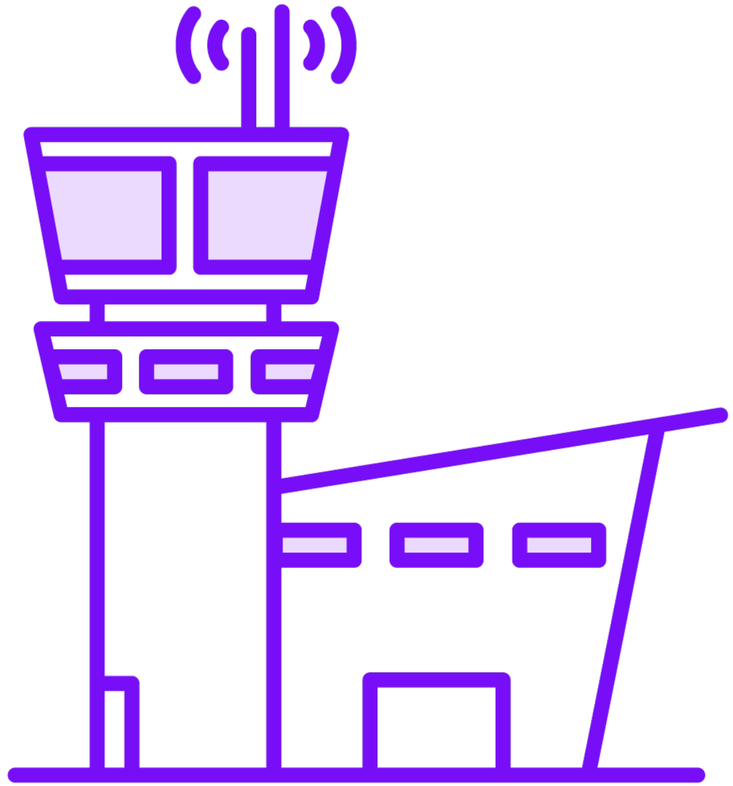
References to other projects

- Mostly because of DI

Demo

Adding the API project

Transitioning from View Services to MediatR



“Simple” controllers

- Heavy on code
- Validate incoming data using model binding
- Execute logic
- Create response type
- Return status code and response

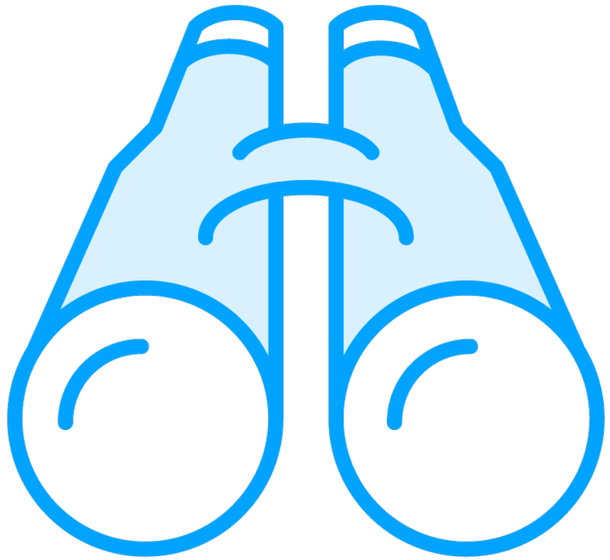
Simple but Heavy Controller

```
public class CategoryController : Controller
{
    private readonly ICategoryRepository _categoryRepository;

    public CategoryController(ICategoryRepository categoryRepository)
    {
        _categoryRepository = categoryRepository;
    }

    public async Task<IActionResult> GetCategories()
    {
        var categories = await _categoryRepository.GetAll();
        var categoryViewModels = categories.Select(o => new CategoryViewModel()
            {Name = c.Name });

        return Ok(categoryViewModels);
    }
}
```



View services

- Logic is moved to separate class
- Called from controller
- Views service connects with business logic

View Service

```
public class CategoryViewService : ICategoryViewService
{
    private readonly ICategoryRepository _categoryRepository;

    public async Task<IEnumerable<CategoryViewModel>> GetCategories()
    {
        var categories = await _categoryRepository.GetAll();
        var categoryViewModels =
            categories.Select(o => new CategoryViewModel() {Name = c.Name });
        return categoryViewModels;
    }
}
```

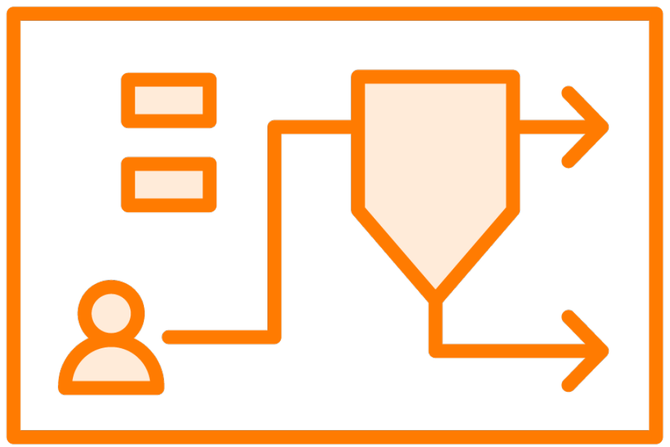
Using a View Service from the Controller

```
public class CategoryController : Controller
{
    private readonly ICategoryViewService _categoryViewService;

    public CategoryController(ICategoryViewService categoryViewService)
    {
        _categoryViewService = categoryViewService;
    }

    [HttpGet]
    public async Task<IActionResult> GetCategories()
    {
        var categoryViewModels = await _categoryViewService.GetCategories();
        return Ok(categoryViewModels);
    }
}
```

Using MediatR



Specific type for query or command

Controller sends via MediatR

Handled in the Core project through RequestHandler

Really lightweight controllers

Controllers Using MediatR

```
public class CategoryController : ControllerBase
{
    private readonly IMediator _mediator;
    public CategoryController(IMediator mediator)
    {
        _mediator = mediator;
    }
    [HttpGet("all", Name = "GetAllCategories")]
    public async Task<ActionResult<List<CategoryListVm>>> GetAllCategories()
    {
        var dtos = await _mediator.Send(new GetCategoriesListQuery());
        return Ok(dtos);
    }
}
```

Demo

Adding the correct packages

Creating the controllers

Deciding Which Objects to Return

What Should We Return?

List	Detail
Relevant properties	All properties
Wrapped in a List<T>	View model
Typically a view model	Nested DTO optional

Using a Response Type

```
public class BaseResponse
{
     public BaseResponse(string message, bool success)
     {
          Success = success;
          Message = message;
     }
     public bool Success { get; set; }
     public string Message { get; set; }
     public List<string> ValidationErrors { get; set; }
}
```

Demo

Exploring the options to return data

Using a specific response

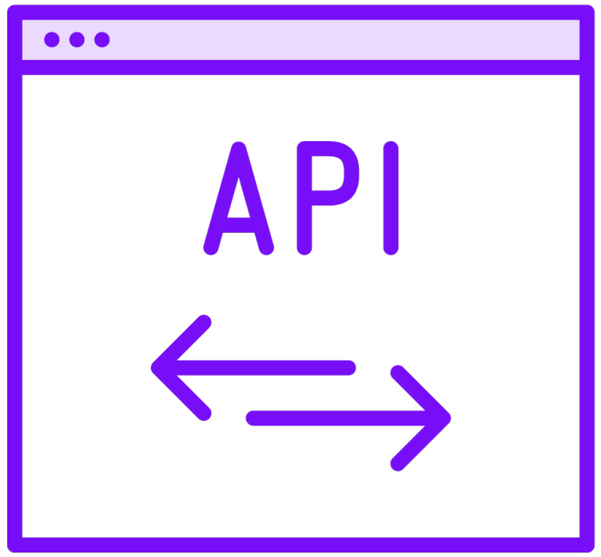
“Hey, Mary here again!

Did I mention we’ll need to export the list of events also to a CSV file?”

Demo

Implementing a new feature from the API to the Core

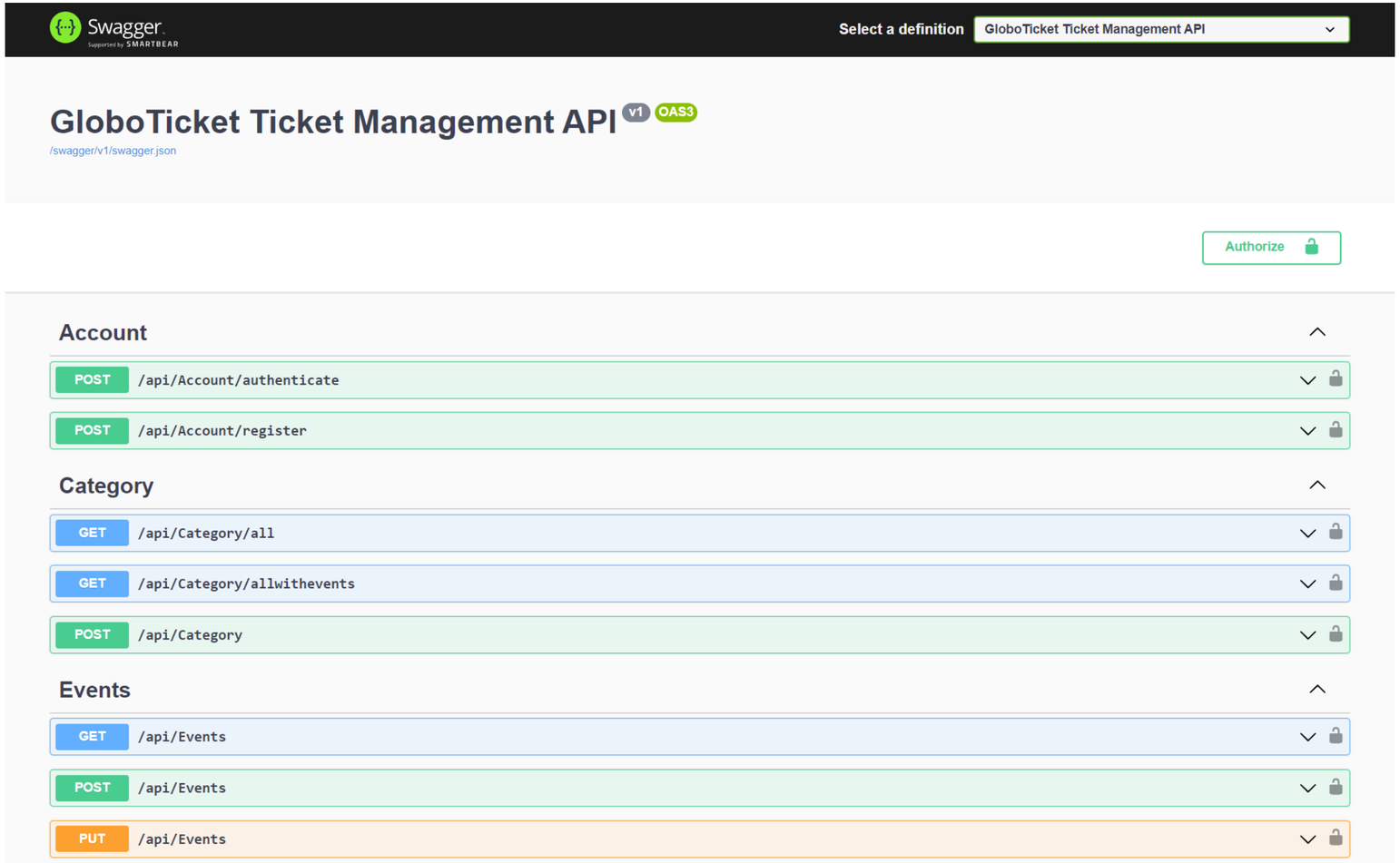
Exposing the API Functionality Using Swagger



Adding Swagger

- API description
- Specification
  - JSON or YAML
- Tooling
  - Swashbuckle
  - NSwag (clients)

Exposing the Swagger API Contract



Required Packages

Swashbuckle
.AspNetCore

Swashbuckle
.AspNetCore
.Swagger

Swashbuckle
.AspNetCore
.SwaggerUI

Demo

Configuring Swagger and Swashbuckle

Summary

ASP.NET Core API is sending messages

Configured using Swagger

Adding a new functionality is easy

Up Next:

Testing the Application Code