Hello,
Many thanks for your tech test.

1. Kindly find attached below (Interwoven with your requirements) my response

2. A quick summary of my solution architecture (What I have done and what I havent done) according to the test requirements

3. Also kindly find attached to the repository, my solution and readme file

4. FINALLY: For the sake of time, I have cut some corners in my final solution e.g. setting the main table columns (that are not being used) as null in both the classes and not used in my test, (In a real life senario, it would be different)

I have taken time to explain why and where. (As the requirements, insist I should not "OVER-ENGINEER THE SOLUTIONS"

I have tried to clean up the code, to ensure its professionally done and no dead code hanging around. I would ask that the reader to please note. Thank you

I hope you find it favourable

Kind regards
Ehi Izevbaye

Microsoft Full Stack (Web and WPF) developer (SDLC)

TABLE OF CONTENTS

Technical Test – Movie API

The test is to assess your coding skill and identify your strengths and weaknesses. There is no specific time limit for this technical test, however, it should be completed within a practical time.

I have uploaded my solution to my personal github repo here www.github.com/izevbaye/optix

You should consider:

- Choose the appropriate tech stack for the role you are applying for.
- Pay attention to how you structure your project(s).
- Remember "KISS"! Don't overengineer the solution, remember to complete the basic requirements first using best practices and then if you have time, you can go back and improve the architecture later.
- Think about code reuse, readability, testing, patterns and add some exception handling **if you can.**

Since the requirements says "...if you can…"

I did not add exception handling using try catch, rather, I injected a global exception and logging capabilities, with the above concept of code reuse, SOLID Principles and code abstractions

I added a demo class under, this namespace called GlobalExceptionHandlingMiddleware `Optix.Domain.Library.Models`

Based on this article https://learn.microsoft.com/en-us/aspnet/web-api/overview/error-handling/web-api-global-error-handling

- Think about deploying the application, it should be easy to deploy for example you could use docker and docker-compose files.
  Solution was built with the new version of .NET 8 ASPIRE, so docker comes in as standard. And run in my docker desktop containers.
- If you have any questions or get stuck on anything at all, please reach out to us!

The Task

Design an API that allows users to query and consume values from a database of your choice, using the dataset provided. If you really want to show off and take things further, build a Front End (UI) that uses your API.

Everyone likes to show off, what they are comfortable with.
So, Yes, would like to show off a bit. I used the latest version of .NET ASPIRE and blazor web UI, using APPHOST orchestration capabilities, which is something I have been following since the first launch in blazor hybrid and now the new .net ASPIRE.

I did not use the default .net ASPIRE web UI out of the box, rather. I built a blazor (Identity) app and added ochestration to it with docker

Dataset Url: https://www.kaggle.com/datasets/disham993/9000-movies-dataset
(If you would like to use a different source entirely then please let us know)

Must have(s)

"As a user I want to search movies by title/name"
"As a user I want to be able to limit the number of results per search"
"As a user I want to be able to 'page' through the list of movies"

Added all of the above with unit testing and front end display using blazor

Should have(s)

"As a user I want to filter movies by genre"
Added

Could have(s)

"As a user I want to filter movies by actors"
"As a user I want to be able to sort movies by title/name or release date"

Since its a "COULD HAVE" I did not Add, this. Rather I added other capabilities, which are mentioned above

Sharing

Once completed please provide us a link to the repository that we can access and clone the solution from.
If you have any questions regarding the tech test, even if you get stuck, please don't hesitate to reach out and ask us!

Contact: Tom Bean
Telephone: 01904 606606
Email: tom.bean@optix.co.uk

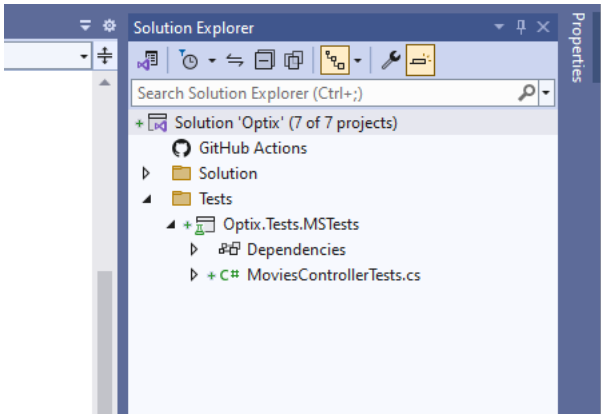
SOLUTIONS ARCHITECTURE

Summary: The solution was engineered with ASP.NET CORE ASPIRE version 8.0 C#

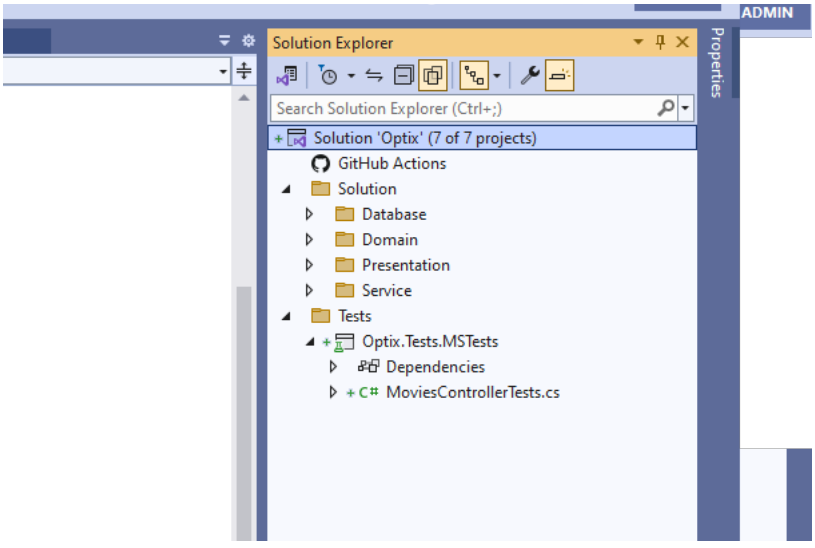
Its a micro -services architecture, with separation of concerns

1. General Solutions overview (2 Folders) namely

(I) solutions - This contains all the solutions folder
(ii) tests – contains the unit tests

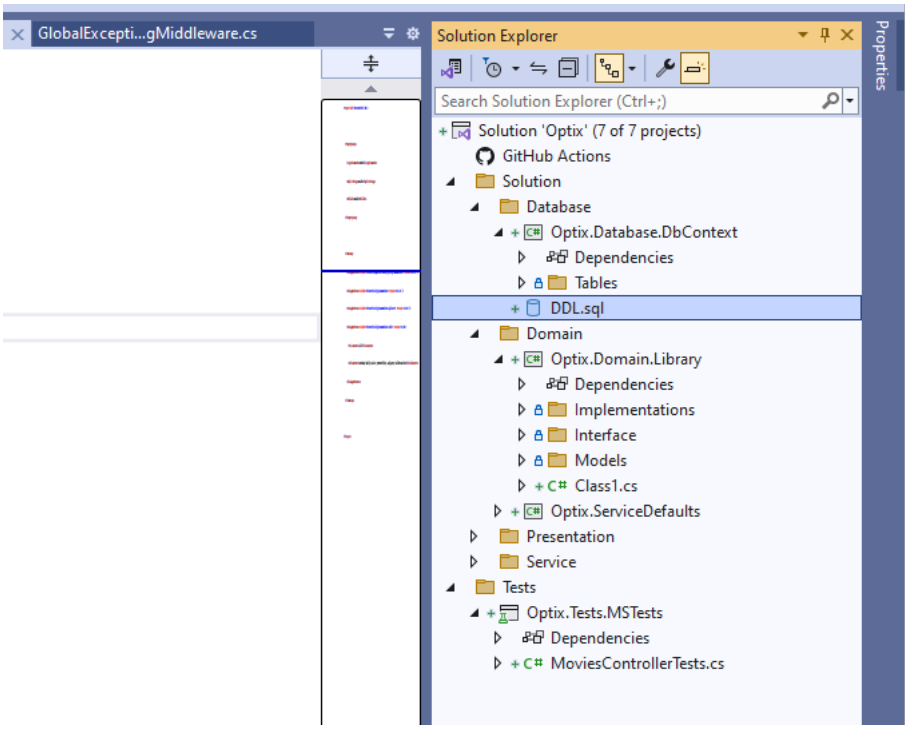


2.1 – the solutions folder contains 4 solutions. Namely



(a) Database folder : Which contains the DDL sql (Data Definition Language) script, which generates the database script

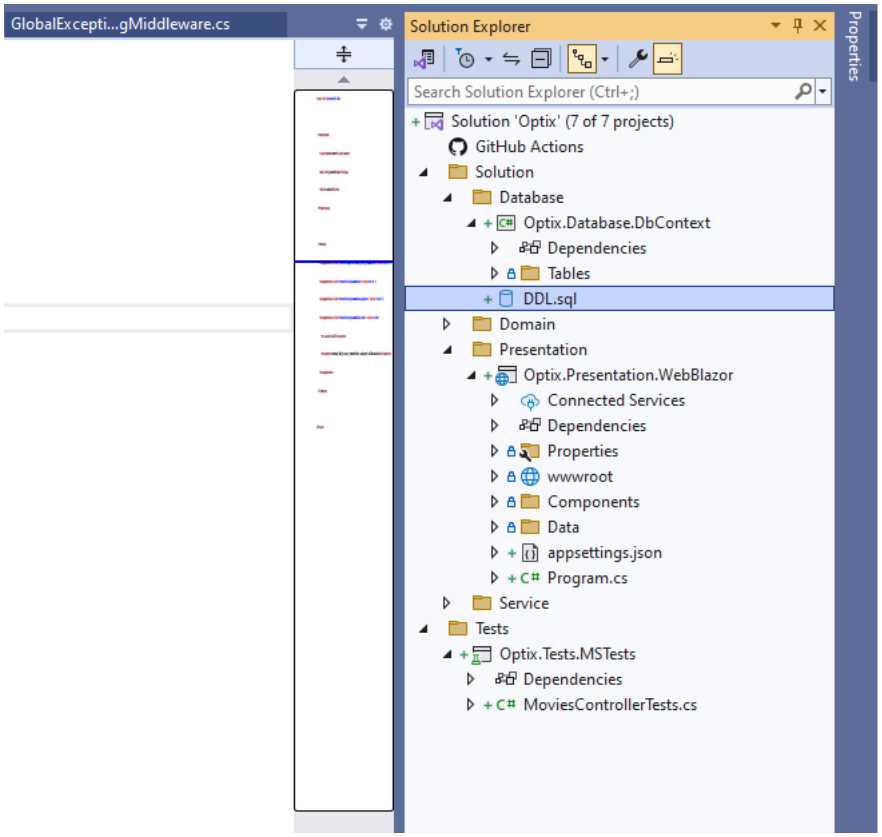
(b) Domain folder: Which contains both the Library and ServiceDefaults projects.



The Library project, contains the classes, Interfaces and interface implementations for the front end and Blazor projects. Which are injected in the DI containers

The ServiceDefaults project is a part of the newly released .NET 8.0 ASPIRE ASP.NET CORE orchestration projects.

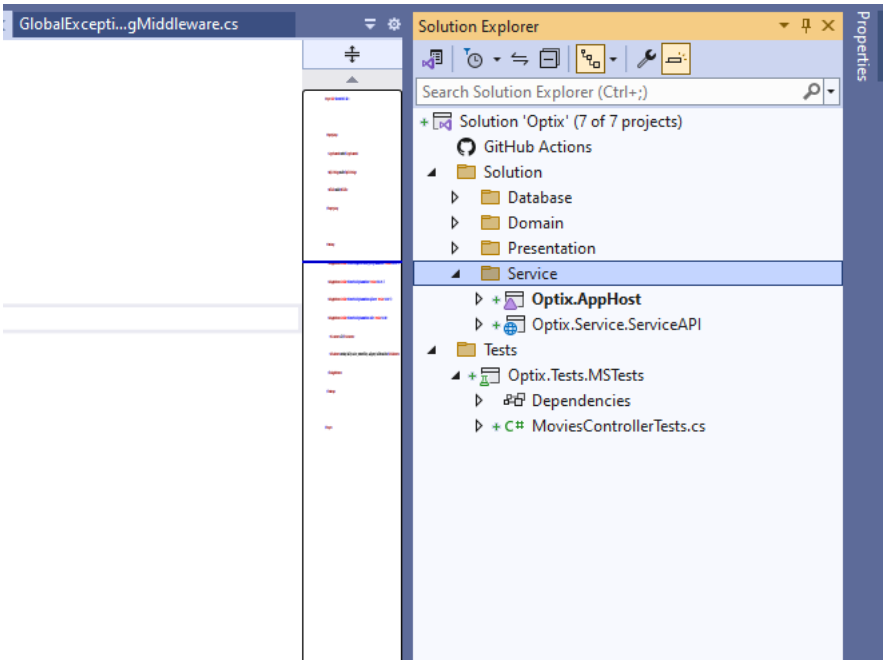
3. 1



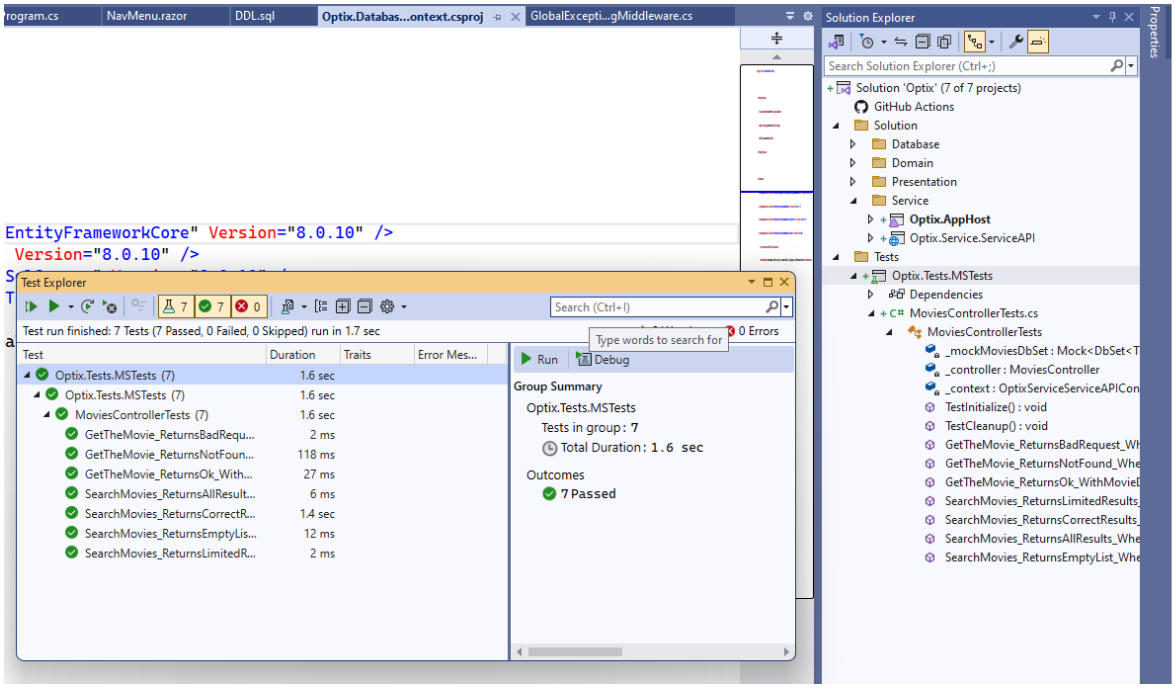
PRESENTATION FOLDER – This contains the web project. Which was done with Microsoft. .Net Blazor

4.1. Service folder.

This contains both the test requirement for the Microsoft .NET Web API2, service project and the ASP.NET ASPIRE 8.0 AppHost orchestration solutions



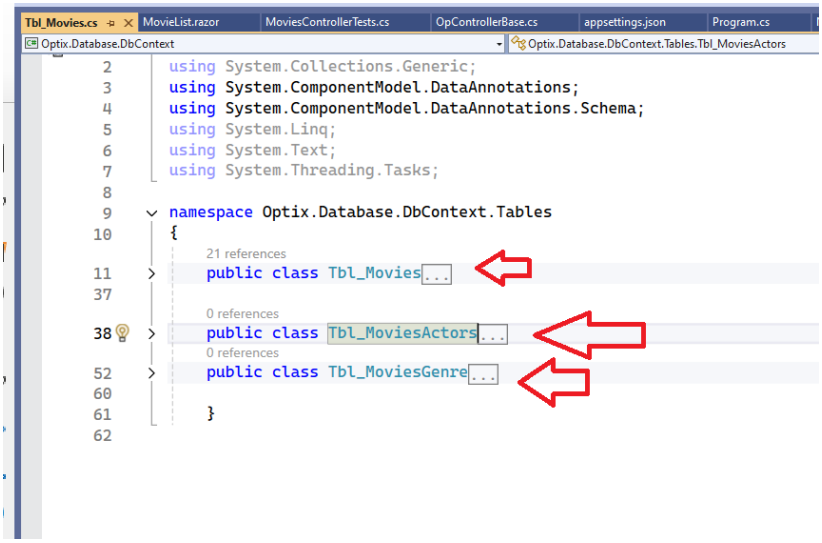
5. TESTS FOLDER



THINGS I HAVE NOT DONE. With regards best practices. KINDLY NOTE

Things I have not done (As part of the requirement is not to over-engineer…..) For times sake and also, I was not advised to do so.

1. I kept all the classes in one file



2. I created RDBMS Relationships in the database table and further engineered my tables. e.g. the Genre column, contains “en” in the online example, which I feel should be an enum value or a FK relationship to the Genre table (which is what I have done)

3. I have also created a 2nd table called Tbl_MoviesActors, as it would be wrong to enter the values into the main table, (which defeats the purpose of normalization)

4. I have created navigation properties in the classes as LISTS<Tbl_Movies> and added them as PK/FK constraints

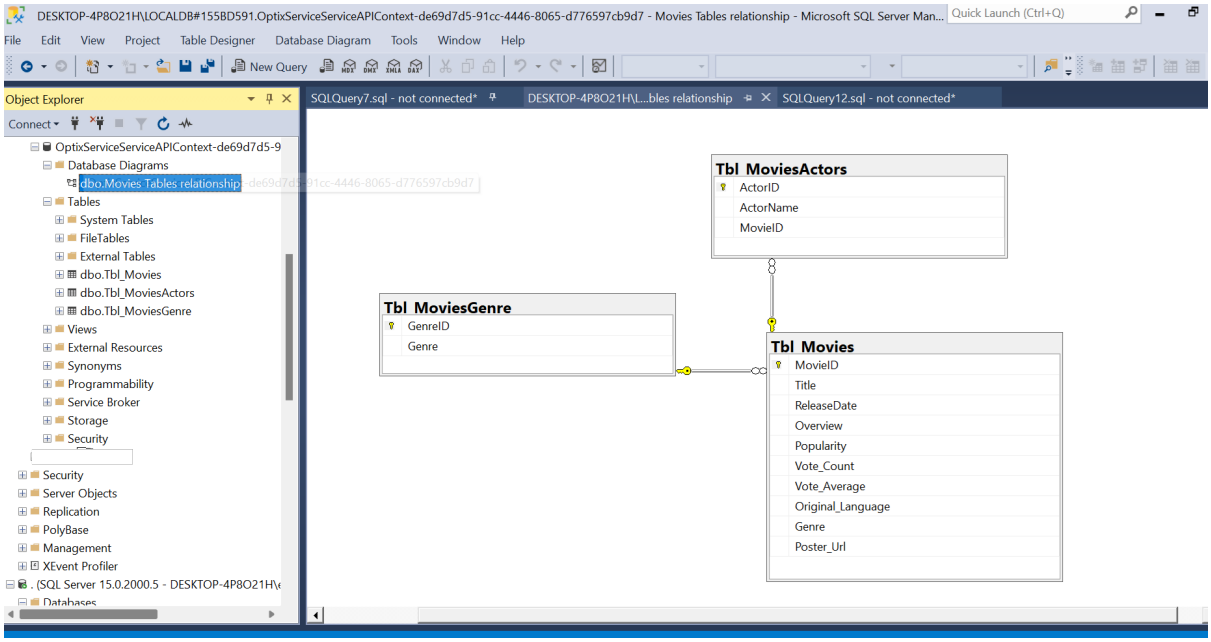
5. I have not used either DB or Code first approach for the sake of time and it was not requested

6. I have not created a Migrations project, neither have I used it in this instance

7. I did not modify the dockerignore file, as this is a test repository

8. I have not configured the repositories ie master >> DEV etc etc

DATABASE RELATIONSHIPS



TO RUN THE SOLUTIONS

1. Requirements:
- Visual Studio 2022 or higher using .NET 8.0 or higher
- Docker desktop

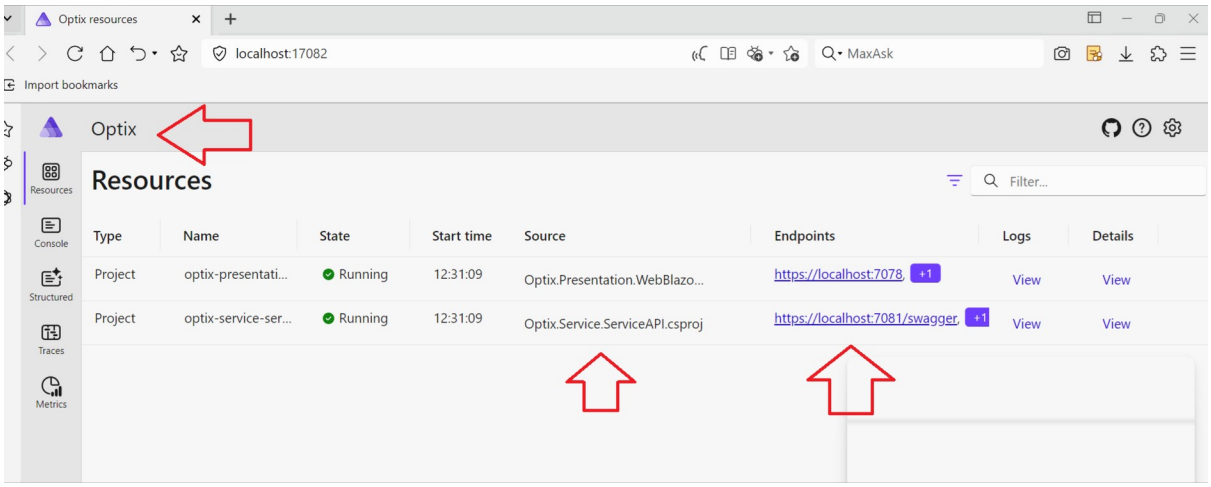
There are 2 ways to run it.

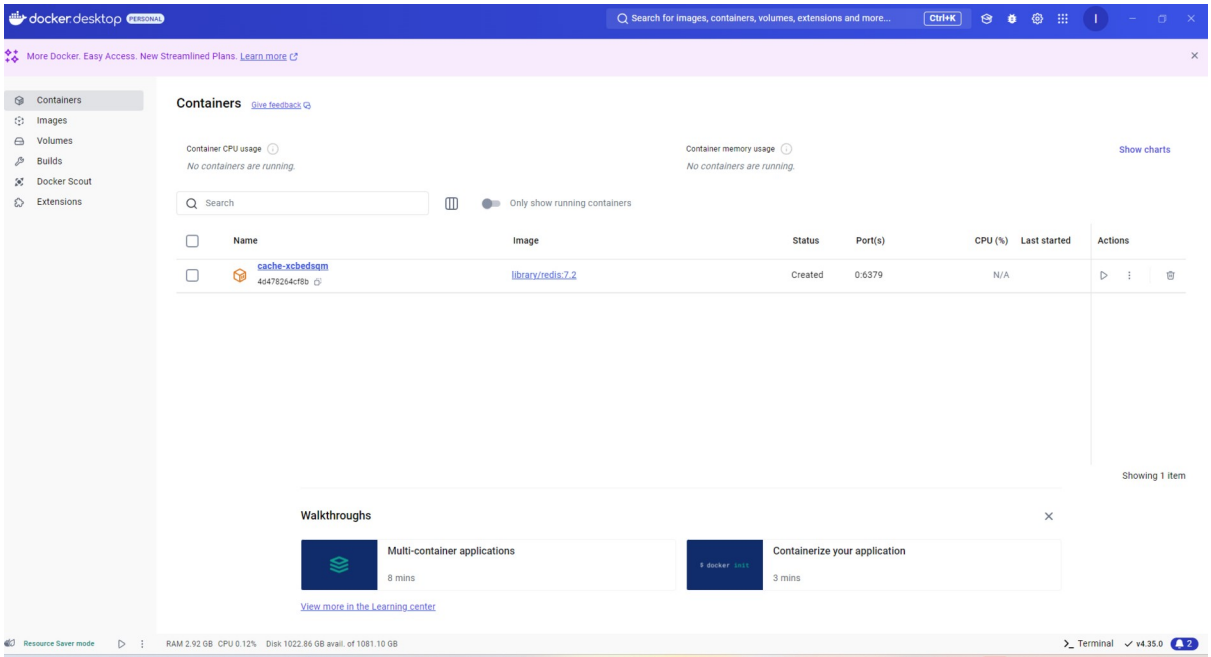
OPTION 1 – Ensure the project Optix.AppHost is set as the startup project and click run

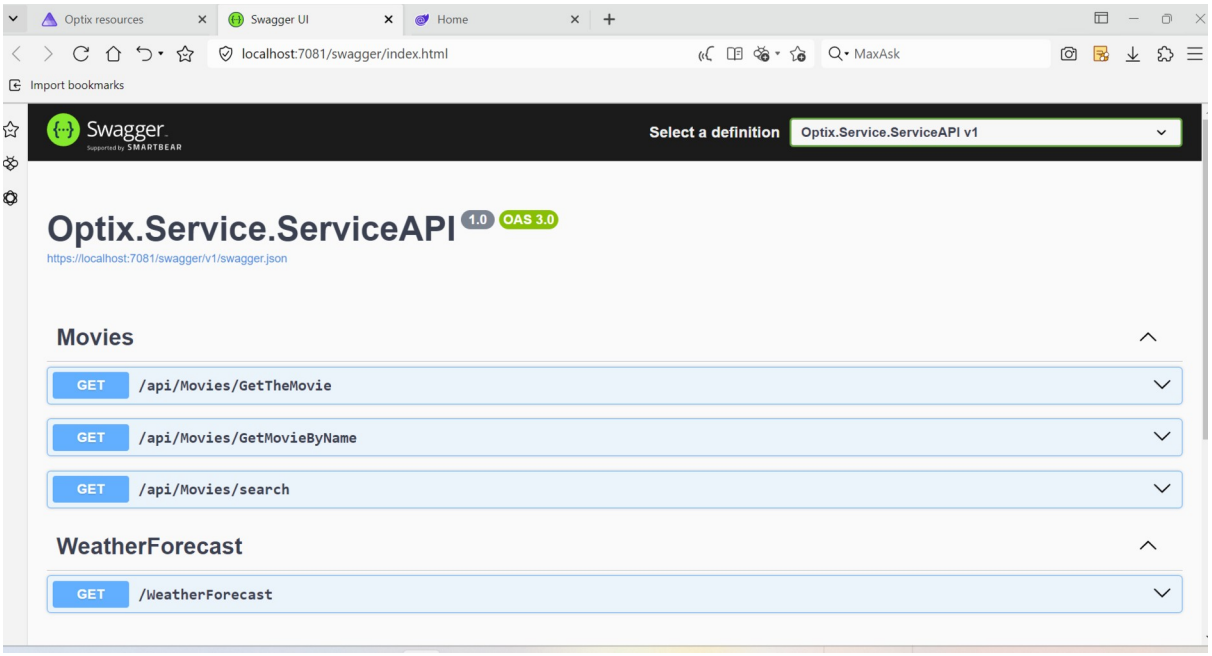
OPTION 2 – Set the Optix.Service.ServiceAPI is the startup project and click the Run button

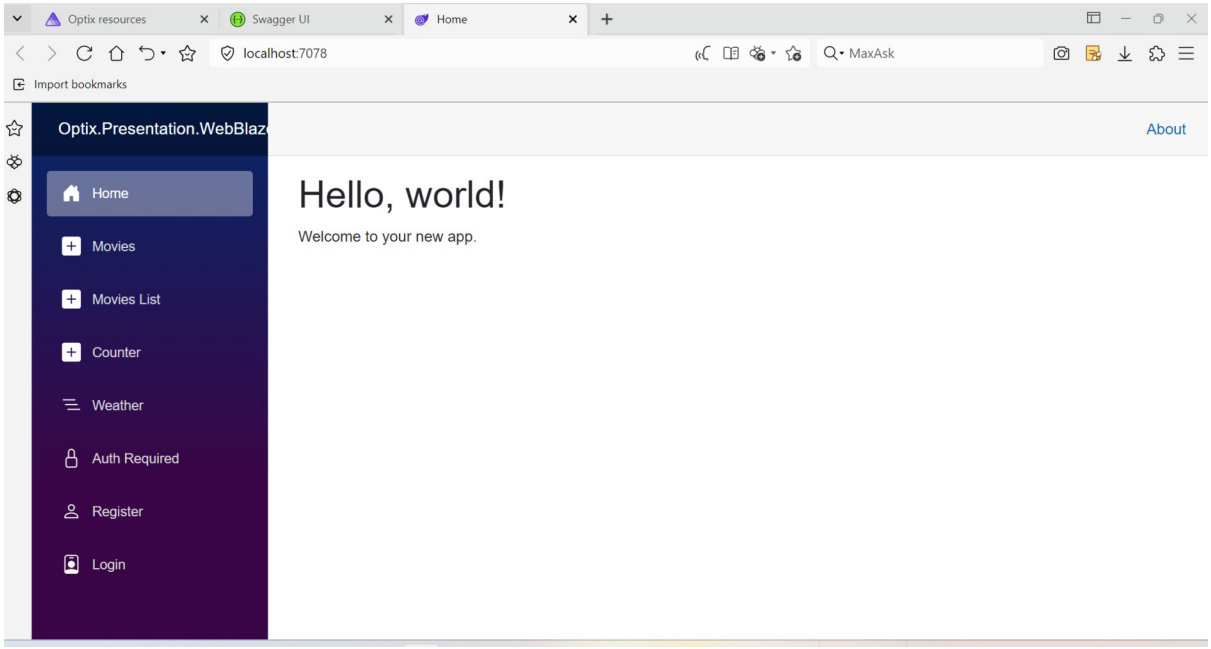
* Ensure Docker is up and running

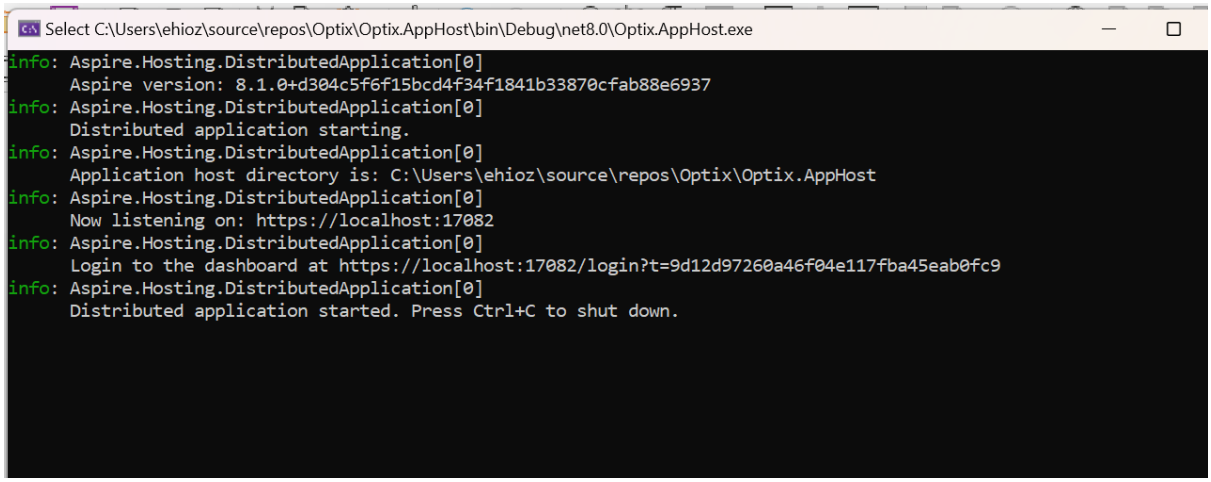
SCREENSHOTS

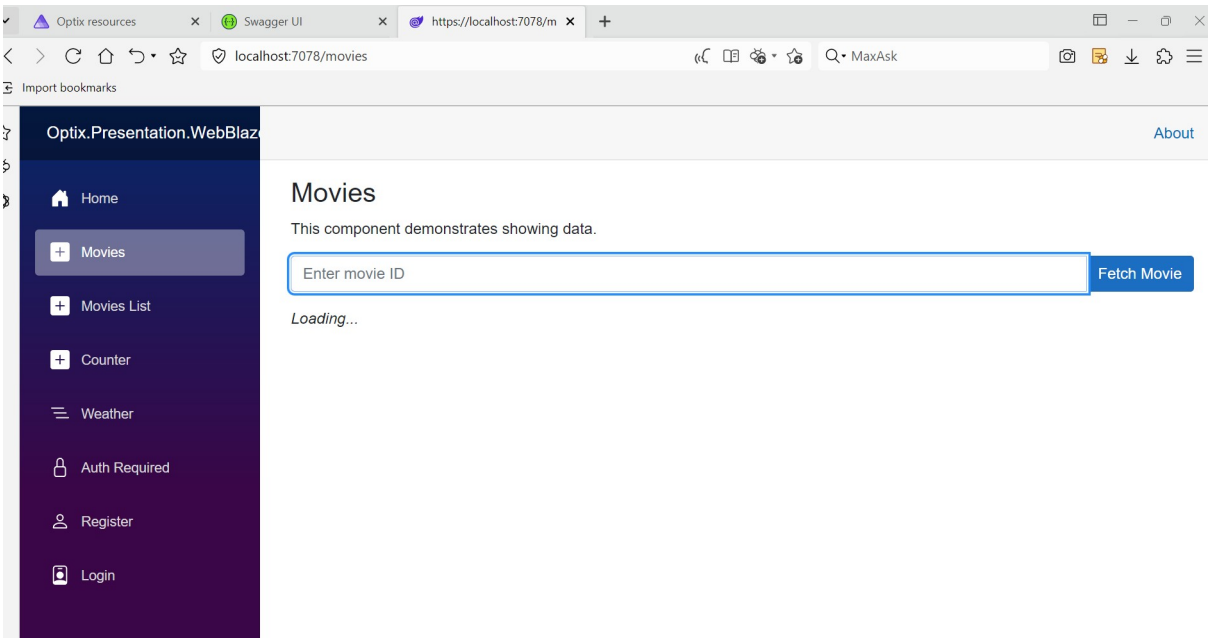


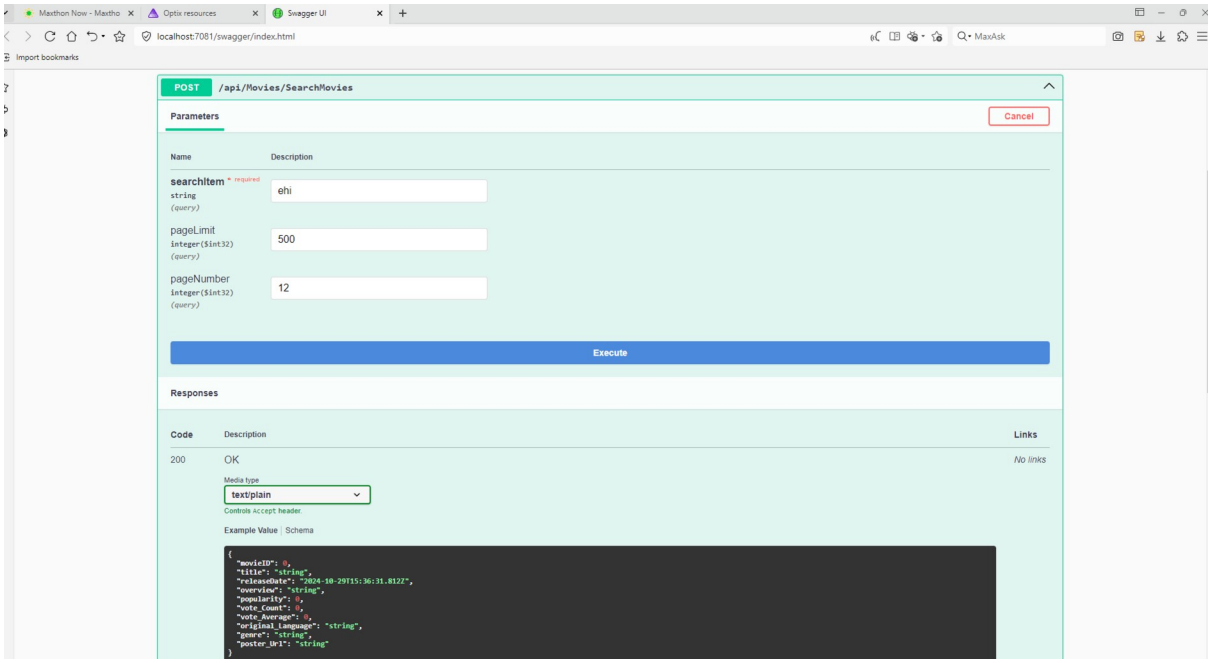



Optix resources
Swagger UI
Home
localhost:7081/swagger/index.html
MaxAsk
Import bookmarks
Swagger
Select a definition
Optix.Service.ServiceAPI v1
Optix.Service.ServiceAPI
1.0
OAS 3.0
https://localhost:7081/swagger/v1/swagger.json
Movies
GET /api/Movies/GetTheMovie
GET /api/Movies/GetMovieByName
GET /api/Movies/search
WeatherForecast
GET /WeatherForecast


Optix resources
Swagger UI
Home
localhost:7078
MaxAsk
Import bookmarks
Optix.Presentation.WebBlaz
About
Home
Movies
Movies List
Counter
Weather
Auth Required
Register
Login
Hello, world!
Welcome to your new app.


Select C:\Users\ehioz\source\repos\Optix\Optix.AppHost\bin\Debug\net8.0\Optix.AppHost.exe
info: Aspire.Hosting.DistributedApplication[0]
Aspire version: 8.1.0+d304c5f6f15bcd4f34f1841b33870cfab88e6937
info: Aspire.Hosting.DistributedApplication[0]
Distributed application starting.
info: Aspire.Hosting.DistributedApplication[0]
Application host directory is: C:\Users\ehioz\source\repos\Optix\Optix.AppHost
info: Aspire.Hosting.DistributedApplication[0]
Now listening on: https://localhost:17082
info: Aspire.Hosting.DistributedApplication[0]
Login to the dashboard at https://localhost:17082/login?t=9d12d97260a46f04e117fba45eab0fc9
info: Aspire.Hosting.DistributedApplication[0]
Distributed application started. Press Ctrl+C to shut down.


Optix resources
Swagger UI
https://localhost:7078/m
localhost:7078/movies
MaxAsk
Import bookmarks
Optix.Presentation.WebBlaz
About
Home
Movies
Movies List
Counter
Weather
Auth Required
Register
Login
Movies
This component demonstrates showing data.
Enter movie ID
Fetch Movie
Loading...


Maxthon Now - Maxtho
Optix resources
Swagger UI
localhost:7081/swagger/index.html
Import bookmarks
POST
/api/Movies/SearchMovies
Parameters
Cancel
Name
Description
searchItem * required
string
(query)
ehi
pageLimit
integer($int32)
(query)
500
pageNumber
integer($int32)
(query)
12
Execute
Responses
Code
Description
Links
200
OK
No links
Media type
text/plain
Controls Accept header.
Example Value | Schema
{
"movieID": 0,
"title": "string",
"releaseDate": "2024-10-29T15:36:31.812Z",
"overview": "string",
"popularity": 0,
"vote_Count": 0,
"vote_Average": 0,
"original_Language": "string",
"genre": "string",
"poster_Url": "string"
}