

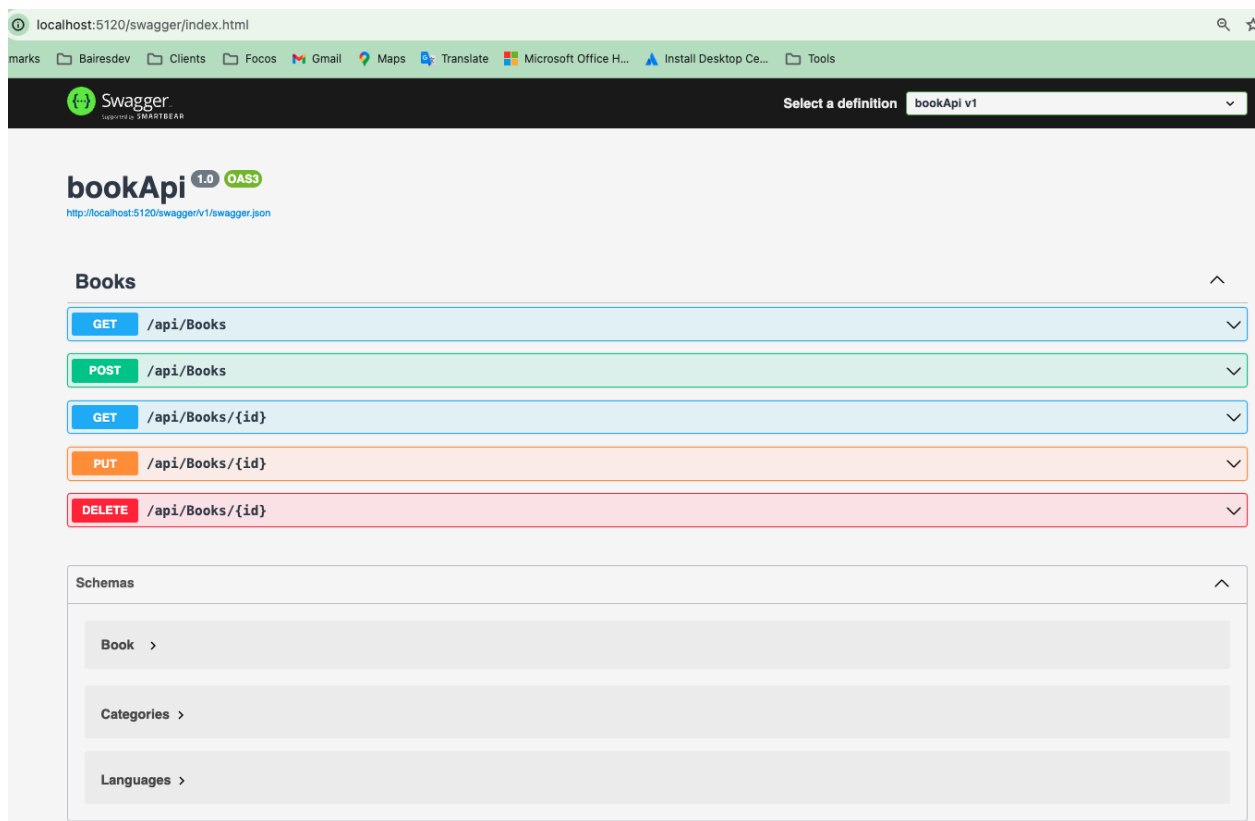
Exercise 1: Create an asp.net book management API

Statement:

Create an asp.net MVC API restful application to manage book records. It should allow creating, updating, removing books, listing books, and getting a specific book by ID. The book records can be stored in a list in memory, or the EF InMemory provider can be used to manage the operations.

Topics to Practice:

- Routing
- HTTP Verbs mapping
- Model binding



POST

/api/Books

Parameters

No parameters

Request body

application/json

```
{
  "category": 23,
  "title": "Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies",
  "publisher": "Packt Publishing",
  "edition": 2,
  "editionDate": "2023-12-12",
  "language": 0,
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.01,
  "dimensions": "9.25 x 7.52 x 1.59"
}
```

Execute

Clear

Responses

Curl

```
curl -X 'POST' \
'http://localhost:5120/api/Books' \
-H 'accept: text/plain' \
-H 'Content-Type: application/json' \
-d '{
  "category": 23,
  "title": "Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies",
  "publisher": "Packt Publishing",
  "edition": 2,
  "editionDate": "2023-12-12",
  "language": 0,
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.01,
  "dimensions": "9.25 x 7.52 x 1.59"
}'
```

Request URL

http://localhost:5120/api/Books

Server response

Code

Details

201

Undocumented

Response body

```
{
  "id": 1,
  "category": 23,
  "title": "Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies",
  "publisher": "Packt Publishing",
  "edition": 2,
  "editionDate": "2023-12-12T00:00:00",
  "language": 0,
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.01,
  "dimensions": "9.25 x 7.52 x 1.59"
}
```

Captura de Tela

Response headers

```
content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:04:06 GMT
location: http://localhost:5120/api/Books/1
server: Kestrel
transfer-encoding: chunked
```

POST

/api/Books

Parameters

Cancel

Reset

No parameters

Request body

application/json

```
{
  "category": 23,
  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",
  "publisher": "www.IT-Visions.de",
  "edition": 8,
  "editionDate": "2023-11-23",
  "language": 7,
  "paperbackPages": 1647,
  "isbn_10": "B0CLKZJKTX",
  "isbn_13": "ANS-B0CLKZJKTX",
  "weight": 5.75,
  "dimensions": "9.25 x 7.52 x 3.09"
}
```

Execute

Clear

Responses

Curl

```
curl -X 'POST' \
  'http://localhost:5120/api/Books' \
  -H 'accept: text/plain' \
  -H 'Content-Type: application/json' \
  -d '{
"category": 23,
"title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",
"publisher": "www.IT-Visions.de",
"edition": 8,
"editionDate": "2023-11-23",
"language": 7,
"paperbackPages": 1647,
"isbn_10": "B0CLKZJKTX",
"isbn_13": "ANS-B0CLKZJKTX",
"weight": 5.75,
"dimensions": "9.25 x 7.52 x 3.09"
}'
```

Request URL

http://localhost:5120/api/Books

Server response

Code

Details

201

Undocumented

Response body

```
{
  "id": 2,
  "category": 23,
  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",
  "publisher": "www.IT-Visions.de",
  "edition": 8,
  "editionDate": "2023-11-23T00:00:00",
  "language": 7,
  "paperbackPages": 1647,
  "isbn_10": "B0CLKZJKTX",
  "isbn_13": "ANS-B0CLKZJKTX",
  "weight": 5.75,
  "dimensions": "9.25 x 7.52 x 3.09"
}
```

Download

Response headers

```
content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:15:02 GMT
location: http://localhost:5120/api/Books/2
server: Kestrel
transfer-encoding: chunked
```

Captura de Tela

Books

GET /api/Books

Parameters

No parameters

Execute

Clear

Responses

Curl

```
curl -X 'GET' \
'http://localhost:5120/api/Books' \
-H 'accept: text/plain'
```

Request URL

http://localhost:5120/api/Books

Server response

Code Details

200

Response body

```
{
  "author": "Blazor",
  "editionDate": "2023-12-12T00:00:00",
  "language": "en",
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.09,
  "dimensions": "9.25 x 7.52 x 1.59"
},
{
  "id": 2,
  "category": 23,
  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",
  "publisher": "www.IT-Visions.de",
  "edition": 8,
  "editionDate": "2023-11-23T00:00:00",
  "language": "de",
  "paperbackPages": 1547,
  "isbn_10": "808123212X",
  "isbn_13": "978-808123212X",
  "weight": 5.75,
  "dimensions": "9.25 x 7.52 x 3.09"
}
}
```

Response headers

```
content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:15:42 GMT
server: Kestrel
transfer-encoding: chunked
```

Responses

Captura de Tela

GET /api/Books/{id}

Parameters

Name Description

id * required

integer(\$int64)

(path)

1

Execute

Clear

Responses

Curl

```
curl -X 'GET' \
'http://localhost:5120/api/Books/1' \
-H 'accept: text/plain'
```

Request URL

http://localhost:5120/api/Books/1

Server response

Code Details

200

Response body

```
{
  "id": 1,
  "category": 23,
  "title": "Blazor and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies",
  "publisher": "Packt Publishing",
  "edition": 2,
  "editionDate": "2023-12-12T00:00:00",
  "language": "en",
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.09,
  "dimensions": "9.25 x 7.52 x 1.59"
}
```

Response headers

```
content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:16:49 GMT
server: Kestrel
transfer-encoding: chunked
```

Responses

Code Description

200

Success

Captura de Tela

Links

No links

PUT

/api/Books/{id}

CancelReset

Parameters

Name	Description
id • required	
integer(int64)	2
(path)	

Request body

application/json

```
{  "id": 2,  "category": 23,  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",  "publisher": "IT Visions",  "edition": 8,  "editionDate": "2024-02-12",  "language": 8,  "paperbackPages": 1647,  "isbn_10": "980162JKT8",  "isbn_13": "999-88CL6ZJKT8",  "weight": 5.75,  "dimensions": "9.25 x 7.52 x 3.89"}
```

ExecuteClear

Responses

Curl

```
curl -X 'PUT' \  'http://localhost:5128/api/Books/2' \  -H 'accept: */*' \  -H 'Content-Type: application/json' \  -d '{  "id": 2,  "category": 23,  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",  "publisher": "IT Visions",  "edition": 8,  "editionDate": "2024-02-12",  "language": 8,  "paperbackPages": 1647,  "isbn_10": "980162JKT8",  "isbn_13": "999-88CL6ZJKT8",  "weight": 5.75,  "dimensions": "9.25 x 7.52 x 3.89"  }'
```

Request URL

http://localhost:5128/api/Books/2

Server response

Code	Details
204	Undocumented

Response headers

date: Mon, 01 Apr 2024 19:19:36 GMT
server: Mastrel

Books

GET

/api/Books

POST

/api/Books

GET

/api/Books/{id}

Cancel

Parameters

Name	Description
id • required	
integer(int64)	2
(path)	

Execute

Clear

Responses

Curl

```
curl -X 'GET' \  'http://localhost:5128/api/Books/2' \  -H 'accept: text/plain'
```

Request URL

http://localhost:5128/api/Books/2

Server response

Code	Details
200	

Response body

```
{  "id": 2,  "category": 23,  "title": "Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)",  "publisher": "IT Visions",  "edition": 8,  "editionDate": "2024-02-12T00:00:00",  "language": 8,  "paperbackPages": 1647,  "isbn_10": "980162JKT8",  "isbn_13": "999-88CL6ZJKT8",  "weight": 5.75,  "dimensions": "9.25 x 7.52 x 3.89"}
```

Response headers

content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:21:18 GMT
server: Mastrel
transfer-encoding: chunked

Responses

Code	Description	Links
200	Success	No links

Media type

Swagger

Select a definitionbookApi v1

bookApi

1.0

OAS3

<http://localhost:5120/swagger/v1/swagger.json>

Books

GET

/api/Books

POST

/api/Books

GET

/api/Books/{id}

PUT

/api/Books/{id}

DELETE

/api/Books/{id}

Parameters

Cancel

Name	Description
id • required	
integer(int64)	2
(path)	

Execute

Clear

Responses

Curl

curl -X 'DELETE' \n"http://localhost:5120/api/Books/2" \n-H 'accept: */*'

Request URL

http://localhost:5120/api/Books/2

Server response

Code	Details
204	

Response headers

date: Mon, 01 Apr 2024 19:21:54 GMT\nserver: Kestrel

Responses

Code	Description	Links
200	Success	No links

Swagger

Select a definitionbookApi v1

bookApi

1.0

OAS3

<http://localhost:5120/swagger/v1/swagger.json>

Books

GET

/api/Books

POST

/api/Books

GET

/api/Books/{id}

Parameters

Cancel

Name	Description
id • required	
integer(int64)	2
(path)	

Execute

Clear

Responses

Curl

curl -X 'GET' \n"http://localhost:5120/api/Books/2" \n-H 'accept: text/plain'

Request URL

http://localhost:5120/api/Books/2

Server response

Code	Details
404	

Response body

{\n "type": "https://tools.ietf.org/html/rfc9110#section-15.5.5",\n "title": "Not Found",\n "status": 404,\n "errorCode": "404-not-found"\n}

Response headers

content-type: application/problem+json; charset=utf-8\ndate: Mon, 01 Apr 2024 19:22:18 GMT\nserver: Kestrel\ntransfer-encoding: chunked

Responses

bookApi 1.0 OAS3

<http://localhost:5120/swagger/v1/swagger.json>

Books

GET /api/Books

Parameters

Cancel

No parameters

Execute

Clear

Responses

Curl

```
curl -X 'GET' \
  'http://localhost:5120/api/Books' \
  -H 'accept: text/plain'
```

Request URL

<http://localhost:5120/api/Books>

Server response

Code

Details

200

Response body

```
{
  "id": 1,
  "category": 23,
  "title": "Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies",
  "publisher": "Packt Publishing",
  "edition": 2,
  "editionDate": "2023-12-12T00:00:00",
  "language": 0,
  "paperbackPages": 798,
  "isbn_10": "183763713X",
  "isbn_13": "978-183763713X",
  "weight": 3.01,
  "dimensions": "9.25 x 7.52 x 1.59"
}
```



Download

Response headers

```
content-type: application/json; charset=utf-8
date: Mon, 01 Apr 2024 19:22:27 GMT
server: Kestrel
transfer-encoding: chunked
```

Responses

Code

Description

Links

200

Success

No links

Exercise 2: Consume the API from dotnet.

Statement:

Create a console application that will consume the previous API. It should create a new book and list existing books.

Topics to Practice:

- C# HTTP requests
- JSON serialization

```
-----
Welcome to the Book Collection Application:
-----
```

```
Important Note:
-----
```

```
You must first run the bookApi project for the BookAPI to be available for this project.
After 'dotnet run', remember to note the bookApi port, for example:
    info: Microsoft.Hosting.Lifetime[14]
    Now listening on: https://localhost:7228
```

```
Enter the number of the Books API port: 7111
```

```
You entered the wrong port 7111, please review and enter the correct Book API port number!
```

```
-----
Press any key to continue...
-----
```

```
-----
Welcome to the Book Collection Application:
-----
```

```
Important Note:
-----
```

```
You must first run the bookApi project for the BookAPI to be available for this project.
After 'dotnet run', remember to note the bookApi port, for example:
    info: Microsoft.Hosting.Lifetime[14]
    Now listening on: https://localhost:7228
```

```
Enter the number of the Books API port: 7228
```

```
-----
Add some Books to the Collection:
-----
```

```
POST https://localhost:7228/api/Books HTTP/1.1
```

```
Book Added:
```

```
{ "id":1,"category":23,"title":"Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies", "publisher":"Packt Publishing", "edition":2, "editionDate":"2023-12-12T00:00:00", "language":0, "paperbackPages":798, "isbn_10":"183763713X", "isbn_13":"978-183763713X", "weight":3.01, "dimensions":"9.25 x 7.52 x 1.59" }
```

```
POST https://localhost:7228/api/Books HTTP/1.1
```

```
Book Added:
```

```
{ "id":2,"category":23,"title":"Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)", "publisher":"IT Visions", "edition":8, "editionDate":"2023-07-23T00:00:00", "language":7, "paperbackPages":1647, "isbn_10":"183763713X", "isbn_13":"ASN-B0CLKZJXTX", "weight":5.75, "dimensions":"9.25 x 7.52 x 3.09" }
```

```
POST https://localhost:7228/api/Books HTTP/1.1
```

```
Book Added:
```

```
{ "id":3,"category":48,"title":"The Hierarchy of Energy in Architecture: Emergy Analysis", "publisher":"Routledge", "edition":1, "editionDate":"2015-06-12T00:00:00", "language":0, "paperbackPages":167, "isbn_10":"1138803537", "isbn_13":"ASN-1138803537", "weight":1.75, "dimensions":"8.00 x 6.00 x 1.10" }
```

```
-----
Press any key to continue...
-----
```



```
-----
List of All Books Available:
-----
```

```
ID: 1
-----
```

```
Title: Apps and Services with .NET 8: Build practical projects with Blazor, .NET MAUI, gRPC, GraphQL, and other enterprise technologies
Category: IT
Publisher: Packt Publishing
Edition: 2 - Edition Date: 12-11-2023
Language: English
Paperback: 798 pages
ISBN_10: 183763713X - ISBN_13: 978-183763713X
Weight: 3,01
```

```
ID: 2
-----
```

```
Title: Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)
Category: IT
Publisher: IT Visions
Edition: 8 - Edition Date: 07-22-2023
Language: German
Paperback: 1647 pages
ISBN_10: 183763713X - ISBN_13: ASIN-B0CLKZJKTX
Weight: 5,75
```

```
ID: 3
-----
```

```
Title: The Hierarchy of Energy in Architecture: Energy Analysis
Category: Science
Publisher: Routledge
Edition: 1 - Edition Date: 06-11-2015
Language: English
Paperback: 167 pages
ISBN_10: 1138803537 - ISBN_13: ASIN-1138803537
Weight: 1,75
```

```
-----
Press any key to continue...

```

```
-----
Get the Book Id 2 before update it:
-----
```

```
GET https://localhost:7228/api/Books/2 HTTP/1.1
```

```
Response:
```

```
{"id":2,"category":23,"title":"Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022 (.NET 8.0-Fachbuchreihe von Dr. Holger Schwichtenberg 3)","publisher":"IT Visions","edition":8,"editionDate":"2023-07-23T00:00:00","language":7,"paperbackPages":1647,"isbn_10":"183763713X","isbn_13":"ASIN-B0CLKZJKTX","weight":5.75,"dimensions":"9.25 x 7.52 x 3.09"}
```

```
-----
Update the Book Id 2:
-----
```

```
PUT https://localhost:7228/api/Books/2 HTTP/1.1
```

```
-----
Press any key to continue...

```

```
-----
Get the Book Id 2 Details:
-----
```

```
ID: 2
-----
```

```
Title: Blazor 8.0: Moderne Webanwendungen und hybride Cross-Platform-Apps mit .NET 8.0, C# 12.0 und Visual Studio 2022
Category: IT
Publisher: IT Visions
Edition: 9 - Edition Date: 01-20-2024
Language: German
Paperback: 1731 pages
ISBN_10: 183763714X - ISBN_13: ASIN-183763714X
Weight: 5,8
```

```
-----
Press any key to stop the application...

```