

Practice Project

ASP.NET WEB API Application

Aim:

To Create an ASP.NET WEB API Application to Add Subject Marks to Students and View Their Marks

Github link:

<https://github.com/Sukirthalakshmanan1/API>

<https://github.com/Sukirthalakshmanan1/WEBAPI3>

Procedure:

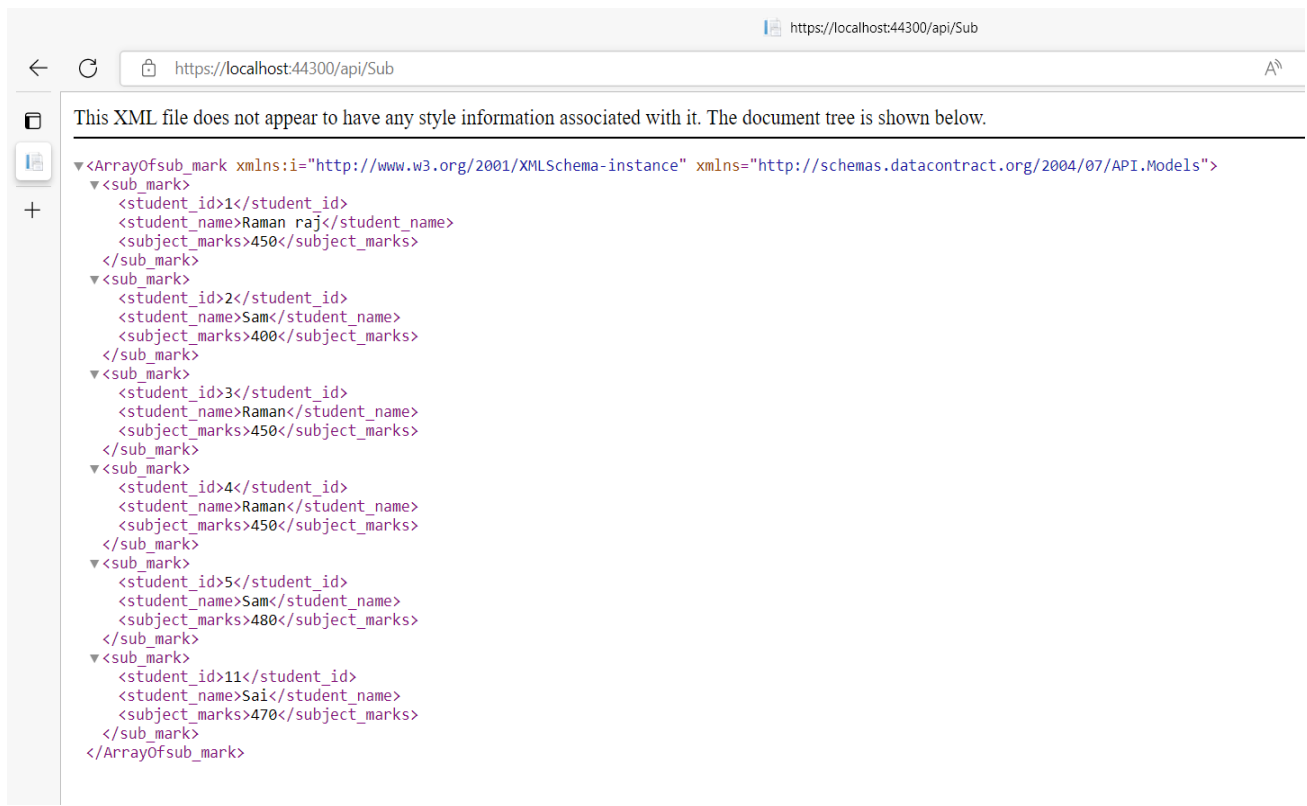
- Create an ASP.NET Web application. Select WEB API application.
- Create Business Logic Library, Data Access Library, Helper Library for student marks.
- Add dependencies for the Project.
- Add controller named Sub and Add GET, POST, PUT, Delete methods and access the operation with the help of helper class.
- Add model class marks.cs in Model Folder and write the necessary properties like student id, student name, subject marks
- Download Postman Application and create an account.
- Run the project and copy the URL and paste it in Postman.
- Test the Method GET(<https://localhost:44300/api/Sub>)
- POST Method(/api/controller) , PUT(/api/controller/id)
- Delete(/api/controller/id) and to find the Student marks with id(<https://localhost:44300/FindById/2>)
- Add project ASP.NET application and select MVC application
- Download microsoft.ASPNET.webapi.client from nuget package manager
- Add dependencies.
- Add controller to perform List and create Operation
- Add model class mark.cs in model
- Create views Index, Create, Delete, Edit and details to perform operations.

- From solution of the project. select start up project and select project build order.
- Set the WEB API start and MVC application start
- Run the project.

Output:

GET:

List of students with their marks:



This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<ArrayOfsub_mark xmlns:i="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://schemas.datacontract.org/2004/07/API.Models">
  <sub_mark>
    <student_id>1</student_id>
    <student_name>Raman raj</student_name>
    <subject_marks>450</subject_marks>
  </sub_mark>
  <sub_mark>
    <student_id>2</student_id>
    <student_name>Sam</student_name>
    <subject_marks>400</subject_marks>
  </sub_mark>
  <sub_mark>
    <student_id>3</student_id>
    <student_name>Raman</student_name>
    <subject_marks>450</subject_marks>
  </sub_mark>
  <sub_mark>
    <student_id>4</student_id>
    <student_name>Raman</student_name>
    <subject_marks>450</subject_marks>
  </sub_mark>
  <sub_mark>
    <student_id>5</student_id>
    <student_name>Sam</student_name>
    <subject_marks>480</subject_marks>
  </sub_mark>
  <sub_mark>
    <student_id>11</student_id>
    <student_name>Sai</student_name>
    <subject_marks>470</subject_marks>
  </sub_mark>
</ArrayOfsub_mark>
```

POSTMAN:

GET:

Home Workspaces API Network Explore Search Postman

Overview GET https://localhost:4435 GET https://localhost:4435 GET https://localhost:4435 GET https://localhost:4435 GET https://localhost:4435 + ...

https://localhost:44300/api/Sub

GET https://localhost:44300/api/Sub

Params Authorization Headers (8) Body Pre-request Script Tests Settings

Query Params

KEY	VALUE	DESCRIPTION
Key	Value	Description

Body Cookies Headers (10) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   {
3     "student_id": 1,
4     "student_name": "Raman raj",
5     "subject_marks": 450
6   },
7   {
8     "student_id": 2,
9     "student_name": "Sam",
10    "subject_marks": 400
11  },
12  {
13    "student_id": 3,
14    "student_name": "Raman",
15    "subject_marks": 450
16  },
17  {
18    "student_id": 4,
19    "student_name": "Raman",
20    "subject_marks": 450
21  },
22  {
23    "student_id": 5,
24    "student_name": "Sam",
25    "subject_marks": 400
26  },
27  {
28    "student_id": 11,
29    "student_name": "Sai",
30    "subject_marks": 470
31  }
32 }
```

DELETE:

Home

Workspaces

API Network

Explore

Search Postman

Overview

GET https://localhost:4435

GET https://localhost:4435

GET https://localhost:4433

GET https://localhost:4430

DEL https://localhost:4430

+

...

https://localhost:44300/api/Sub/4

DELETE

https://localhost:44300/api/Sub/4

Params

Authorization

Headers (8)

Body

Pre-request Script

Tests

Settings

Query Params

KEY	VALUE	DESCRIPTION
Key	Value	Description

Body

Cookies

Headers (10)

Test Results

Pretty

Raw

Preview

Visualize

JSON

```
1  {
2    {
3      "student_id": 1,
4      "student_name": "Raman raj",
5      "subject_marks": 450
6    },
7    {
8      "student_id": 2,
9      "student_name": "Sam",
10     "subject_marks": 400
11   },
12   {
13     "student_id": 3,
14     "student_name": "Raman",
15     "subject_marks": 450
16   },
17   {
18     "student_id": 4,
19     "student_name": "Raman",
20     "subject_marks": 450
21   },
22   {
23     "student_id": 5,
24     "student_name": "Sam",
25     "subject_marks": 400
26   },
27   {
28     "student_id": 11,
29     "student_name": "Sai",
30     "subject_marks": 470
31   }
32 }
```

After Deletion:

HomeWorkspaces ▾API Network ▾Explore

Q Search Postman

OverviewGET https://localhost:4435GET https://localhost:4435GET https://localhost:4435GET https://localhost:4435GET https://localhost:4435+ ...

https://localhost:44300/api/Sub

GET ▾https://localhost:44300/api/Sub

ParamsAuthorizationHeaders (8)Body ●Pre-request ScriptTestsSettings

Query Params

KEY	VALUE
Key	Value

BodyCookiesHeaders (10)Test Results

PrettyRawPreviewVisualizeJSON ▾

```
1 {
2   {
3     "student_id": 1,
4     "student_name": "Raman raj",
5     "subject_marks": 450
6   },
7   {
8     "student_id": 2,
9     "student_name": "Sam",
10    "subject_marks": 400
11  },
12  {
13    "student_id": 3,
14    "student_name": "Raman",
15    "subject_marks": 450
16  },
17  {
18    "student_id": 5,
19    "student_name": "Sam",
20    "subject_marks": 400
21  },
22  {
23    "student_id": 11,
24    "student_name": "Sai",
25    "subject_marks": 470
26  }
27 }
```

POST:

HomeWorkspaces ▾API Network ▾Explore

Search Postman

Overview

GET https://localhost:4435 GET https://localhost:4435 GET https://localhost:4433 GET https://localhost:4430 POST https://localhost:4430 + ...

https://localhost:44300/api/Sub

POST

https://localhost:44300/api/Sub

Params

Authorization

Headers (8)

Body

Pre-request Script

Tests

Settings

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON ▾

1

2

3

4

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21

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23

24

25

26

Body

Cookies

Headers (10)

Test Results

Pretty

Raw

Preview

Visualize

JSON ▾

1

2

3

4

5

6

7

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```
[
  {
    "student_id": 1,
    "student_name": "Raman raj",
    "subject_marks": 450
  },
  {
    "student_id": 2,
    "student_name": "Sam",
    "subject_marks": 400
  },
  {
    "student_id": 3,
    "student_name": "Raman",
    "subject_marks": 450
  },
  {
    "student_id": 5,
    "student_name": "Sam",
    "subject_marks": 480
  },
  {
    "student_id": 11,
    "student_name": "Sai",
    "subject_marks": 470
  }
]
```

Success status code:

The screenshot displays the Postman interface for a REST client. The top navigation bar includes links for Home, Workspaces, API Network, and Explore, along with a search bar and utility icons. The main workspace shows a collection of requests, with the current one being a POST request to `https://localhost:44300/api/Sub`. The request body is a JSON object with the following structure:

```
1 {
2   "student_id": 4,
3   "student_name": "Gita",
4   "subject_marks": 350
5 }
```

The response tab at the bottom indicates a successful status code of 200 OK, with a response time of 277 ms and a size of 288 B. The response body is currently empty, and the interface offers options to view the response in different formats (Pretty, Raw, Preview, Visualize, Text).

After Insertion:

The image shows the Postman REST client interface. At the top, there's a navigation bar with 'Home', 'Workspaces', 'API Network', and 'Explore'. A search bar labeled 'Search Postman' is on the right. Below the navigation bar, a list of recent requests is shown, including several 'GET https://localhost:4435' and one 'GET https://localhost:44300'. The main panel displays a request to 'https://localhost:44300/api/Sub' with a 'GET' method. The 'Body' tab is selected, showing a JSON array of student records. The 'Body' tab is also selected in the bottom panel, showing the same JSON array in a 'Pretty' format. The JSON data is as follows:

```
[{"student_id": 1, "student_name": "Raman raj", "subject_marks": 450}, {"student_id": 2, "student_name": "Sam", "subject_marks": 400}, {"student_id": 3, "student_name": "Raman", "subject_marks": 450}, {"student_id": 4, "student_name": "Gita", "subject_marks": 350}, {"student_id": 5, "student_name": "Sam", "subject_marks": 400}]
```


PUT:

The screenshot displays the Postman API client interface. At the top, there is a navigation bar with 'Home', 'Workspaces', 'API Network', and 'Explore' tabs. A search bar labeled 'Search Postman' is also present. Below the navigation bar, the 'Overview' tab is active, showing a list of requests. The selected request is a PUT request to 'https://localhost:44300/api/Sub/4'.

The request details are shown below the URL bar. The method is 'PUT' and the URL is 'https://localhost:44300/api/Sub/4'. The 'Body' tab is selected, showing a JSON body with the following content:

```
1 {
2   "student_id": 4,
3   "student_name": "Gita Angel",
4   "subject_marks": 450
5 }
```

Below the request details, the 'Body' tab is selected, showing the response body. The response is a JSON array of five objects, each representing a student record. The response is formatted as 'Pretty' and 'JSON'.

```
1 [
2   {
3     "student_id": 1,
4     "student_name": "Raman raj",
5     "subject_marks": 450
6   },
7   {
8     "student_id": 2,
9     "student_name": "Sam",
10    "subject_marks": 400
11  },
12  {
13    "student_id": 3,
14    "student_name": "Raman",
15    "subject_marks": 450
16  },
17  {
18    "student_id": 4,
19    "student_name": "Gita",
20    "subject_marks": 350
21  },
22  {
23    "student_id": 5,
24    "student_name": "Sam",
25    "subject_marks": 400
26  },
27 ]
```

Success Status Code:

The screenshot displays the Postman interface for a REST client. The top navigation bar includes 'Home', 'Workspaces', 'API Network', and 'Explore'. A search bar labeled 'Search Postman' is present. The main area shows a collection of requests, with the selected one being a PUT request to 'https://localhost:44300/api/Sub/4'. The request body is a JSON object:

```
{  "student_id": 4,  "student_name": "Gita Angel",  "subject_marks": 450}
```

. The bottom section shows the response, which is a status of 200 OK, indicating a successful operation. The response is displayed in 'Pretty' format. The status bar at the bottom indicates 'Status: 200 OK', 'Time: 19 ms', and 'Size: 288 B'.

Home Workspaces API Network Explore

Search Postman

https://localhost:44300/api/Sub/4

PUT https://localhost:44300/api/Sub/4

Params Authorization Headers (8) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "student_id": 4,
3   "student_name": "Gita Angel",
4   "subject_marks": 450
5 }
```

Body Cookies Headers (9) Test Results

Pretty Raw Preview Visualize Text

Status: 200 OK Time: 19 ms Size: 288 B Save Response

After Updation:

The image shows the Postman application interface. At the top, there's a navigation bar with 'Home', 'Workspaces', 'API Network', and 'Explore'. A search bar labeled 'Search Postman' is on the right. Below this, a list of recent requests is shown, all pointing to 'https://localhost:44300/api/Sub'. The main workspace displays a GET request to this URL. The 'Body' tab is selected, showing a JSON array of five student records. The 'Headers' tab shows 10 headers. The 'Test Results' tab is also visible. The response body is shown in the 'Pretty' view, displaying a JSON array of five student records, each with 'student_id', 'student_name', and 'subject_marks'.

Overview | GET https://localhost:4435 | GET https://localhost:4435 | GET https://localhost:4433 | GET https://localhost:4430 | GET https://localhost:4430 | + ...

https://localhost:44300/api/Sub

GET | https://localhost:44300/api/Sub

Params | Authorization | Headers (8) | **Body** | Pre-request Script | Tests | Settings

none | form-data | x-www-form-urlencoded | **raw** | binary | GraphQL | **JSON** |

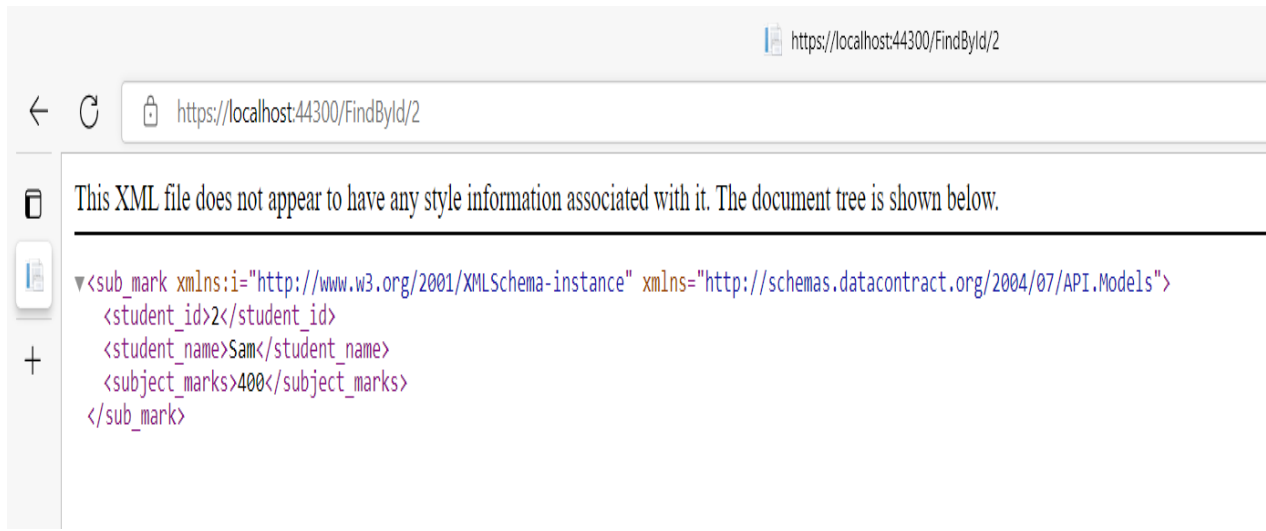
```
1 [
2   {
3     "student_id": 1,
4     "student_name": "Raman raj",
5     "subject_marks": 450
6   },
7   {
8     "student_id": 2,
9     "student_name": "Sam",
10    "subject_marks": 400
11  },
12  {
13    "student_id": 3,
14    "student_name": "Raman",
15    "subject_marks": 450
16  },
17  {
18    "student_id": 4,
19    "student_name": "Gita Angel",
20    "subject_marks": 450
21  },
22  {
23    "student_id": 5,
24    "student_name": "Sam",
25    "subject_marks": 400
26  },
27 ]
```

Body | Cookies | Headers (10) | Test Results

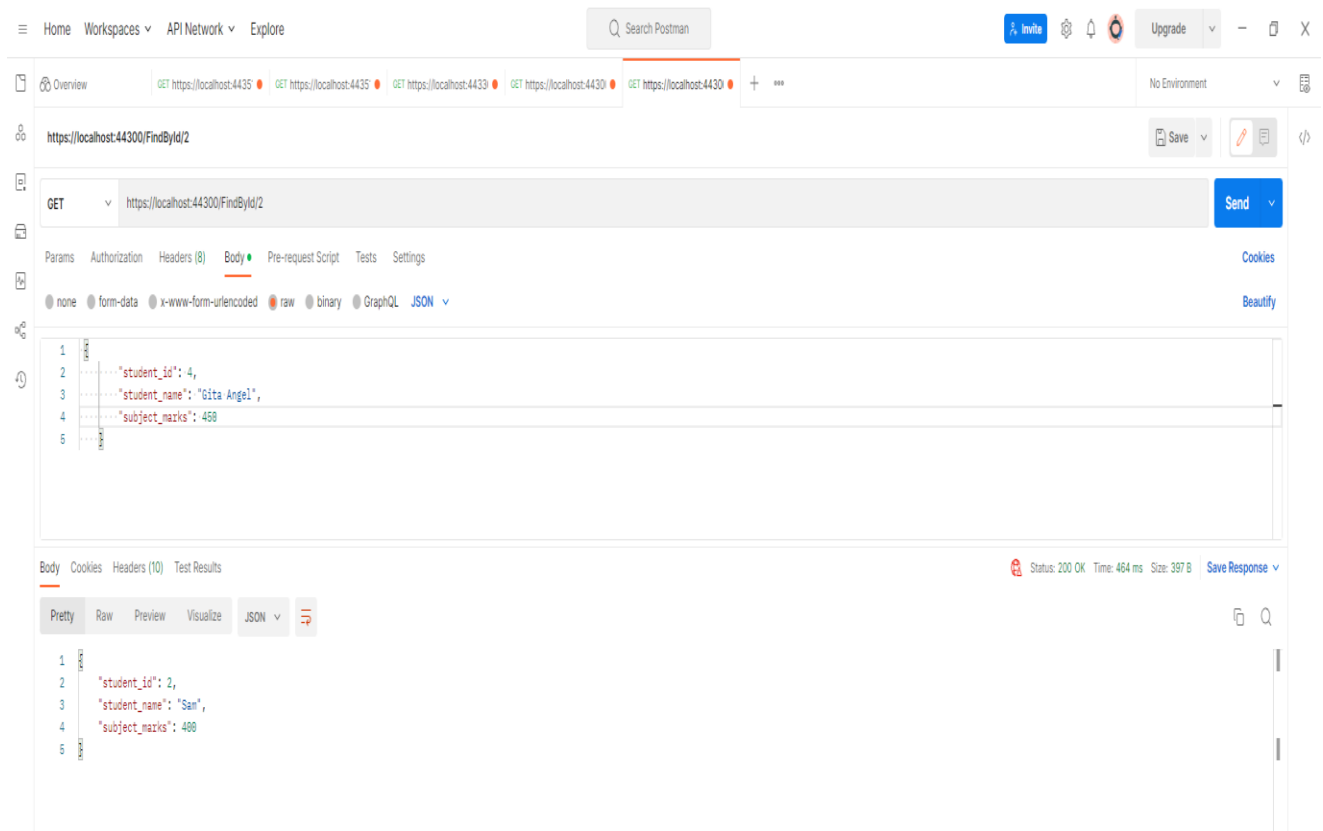
Pretty | Raw | Preview | Visualize | **JSON** |

```
1 [
2   {
3     "student_id": 1,
4     "student_name": "Raman raj",
5     "subject_marks": 450
6   },
7   {
8     "student_id": 2,
9     "student_name": "Sam",
10    "subject_marks": 400
11  },
12  {
13    "student_id": 3,
14    "student_name": "Raman",
15    "subject_marks": 450
16  },
17  {
18    "student_id": 4,
19    "student_name": "Gita Angel",
20    "subject_marks": 450
21  },
22  {
23    "student_id": 5,
24    "student_name": "Sam",
25    "subject_marks": 400
26  },
27 ]
```

Find By ID:



In POSTMAN:



Index:

Index - My ASP.NET Application

← ↻ https://localhost:44303/mark/Index 🔍 📄 🔄 ⚙️ ⌨️ Not syncing ⋮

Application name Home About Contact

Index

Create New

student_id	student_name	subject_marks	
1	Raman raj	450	Edit Details Delete
2	Sam	400	Edit Details Delete
3	Raman	450	Edit Details Delete
4	Gita Angel	450	Edit Details Delete
5	Sam	480	Edit Details Delete
10	Gita	450	Edit Details Delete

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Create:

Create - My ASP.NET Application

← ↻ https://localhost:44303/mark/Create 🔍 📄 🔄 ⚙️ ⌨️

Application name Home About Contact

Create

mark

student_id

student_name

subject_marks

Create

[Back to List](#)

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← ↻ 🔒 Create - My ASP.NET Application

https://localhost:44303/mark/Create

Application name Home About Contact

Create

mark

student_id 11

student_name RajaRam

subject_marks 300

Create

[Back to List](#)

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List of student with marks:

← ↻ 🔒 Index - My ASP.NET Application

https://localhost:44303/mark

Application name Home About Contact

Index

[Create New](#)

student_id	student_name	subject_marks	
1	Raman raj	450	Edit Details Delete
2	Sam	400	Edit Details Delete
3	Raman	450	Edit Details Delete
4	Gita Angel	450	Edit Details Delete
5	Sam	480	Edit Details Delete
10	Gita	450	Edit Details Delete
11	RajaRam	300	Edit Details Delete

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Conclusion:

Thus the Web API application is created successfully.