News Website Content Management System

A progress report (the first phase)

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First of all, it should be noted that the project was an opportunity to apply several concepts and implement them through the project. We thank you for giving us chance, through this project, to apply several concepts that we learned before.

Before diving into our project documentation, let us briefly remember you and explain what the main idea of our project, what are the most important features it provides, and what are the technologies used in building it.

1. An Overview

Our project aims to create a newspaper website "CMS" from scratch and is based on the concepts of "building and consuming web services."

Our News CMS allows users to manage a website with recurrent publications (blogs, news, articles, multimedia), etc. with no programming knowledge, it allows authors to create, publish, and edit news and articles through a control panel "dashboard" protected by a subsystem for managing users and their access permissions , and to apply the concepts that we studied in the DevOps course related to authorization and authentication, a user management system was added to our project and adequate security was provided to it through the use of technology JSON Web Token (JWT).

The Project implementation divided into two parts/ phases:

The phase	the description	the phase completion rate
1st	Building an ASP.NET Core Web API project with C# (Back-end or "server side")	Complete* **What has been accomplished needs your review
2nd	Building Single Page Application with Angular (Front-end or "Client side")	in progress

2. What are the techniques and tools used in our project?

- **ASP.NET Core 5.0 Web API**

The ASP.NET Web API is a .NET framework for building or developing RESTFUL API with HTTP-based services which can be accessed via any application.

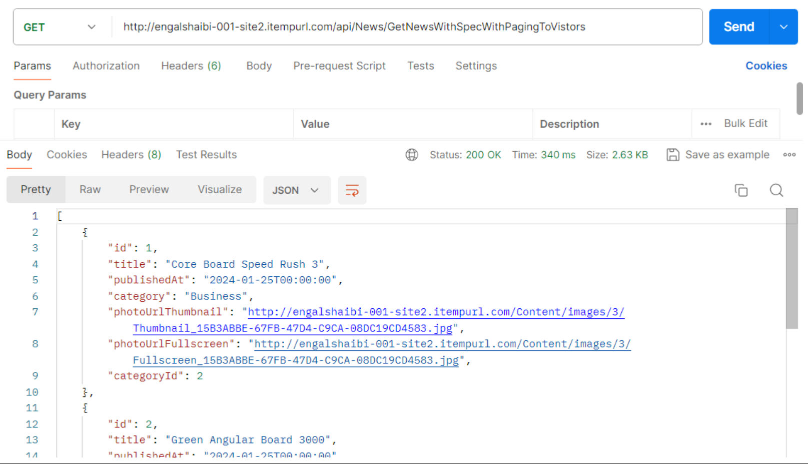
- **SQL Server 2019**

SQL Server is a management system for a relational database designed and developed by Microsoft. Because this type of database is the most compatible with The ASP.NET Web API, we chose it as the database for our applications

3. Project Features

- **All HTTP methods (CRUD)**

HTTP methods allow our project's consumers to perform all CRUD (Create, Read, Update, Delete) actions on API resources in a uniform and predictable manner. The HTTP methods used in our project are:

Methods	**Example**
Get All	http://engalshaibi-001-site2.itempurl.com/api/News/GetNewsWithSpecWithPagingToVistors 
Get one	http://engalshaibi-001-site2.itempurl.com/api/Category/4

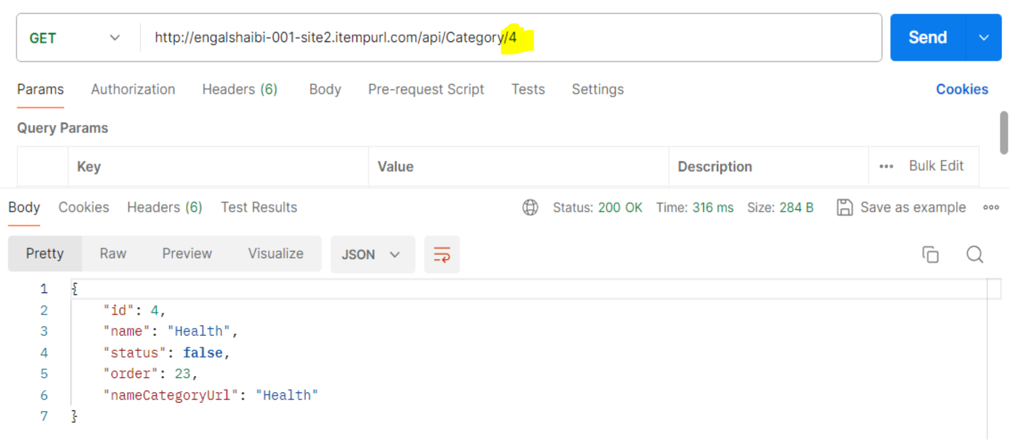
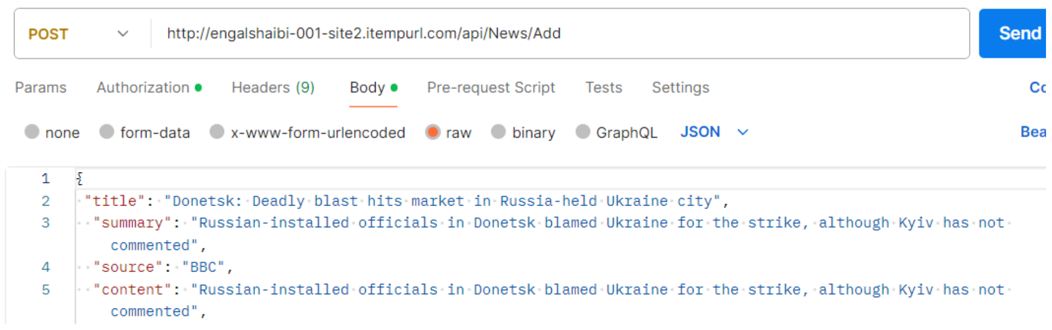
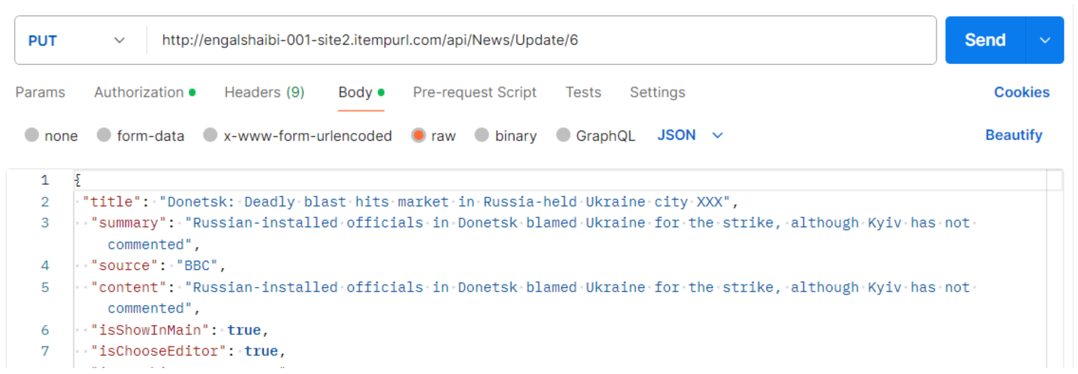
```
http://engalshaibi-001-site2.itempurl.com/api/News/GetNewsWithSpecWithPagingToVistors
```

Query Params

	Key	Value	Description

Status: 200 OK Time: 340 ms Size: 2.63 KB

```
[
    {
        "id": 1,
        "title": "Core Board Speed Rush 3",
        "publishedAt": "2024-01-25T00:00:00",
        "category": "Business",
        "photoUrlThumbnail": "http://engalshaibi-001-site2.itempurl.com/Content/images/3/
            Thumbnail_15B3ABBE-67FB-47D4-C9CA-08DC19CD4583.jpg",
        "photoUrlFullscreen": "http://engalshaibi-001-site2.itempurl.com/Content/images/3/
            Fullscreen_15B3ABBE-67FB-47D4-C9CA-08DC19CD4583.jpg",
        "categoryId": 2
    },
    {
        "id": 2,
        "title": "Green Angular Board 3000",
        "publishedAt": "2024-01-25T00:00:00"
```

	
Post	http://engalshaibi-001-site2.itempurl.com/api/News/Add 
Put	http://engalshaibi-001-site2.itempurl.com/api/News/Update/6 
Delete	http://engalshaibi-001-site2.itempurl.com/api/News/delete-photo/30/80ec2c04-9dd9-484d-849b-ae2a98063ec5

GET http://engalshaibi-001-site2.itempurl.com/api/Category/4 Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Query Params

Key	Value	Description

Body Cookies Headers (6) Test Results Status: 200 OK Time: 316 ms Size: 284 B Save as example

Pretty Raw Preview Visualize JSON

```
{
    "id": 4,
    "name": "Health",
    "status": false,
    "order": 23,
    "nameCategoryUrl": "Health"
}
```

POST http://engalshaibi-001-site2.itempurl.com/api/News/Add Send

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded [✓ raw] binary GraphQL JSON

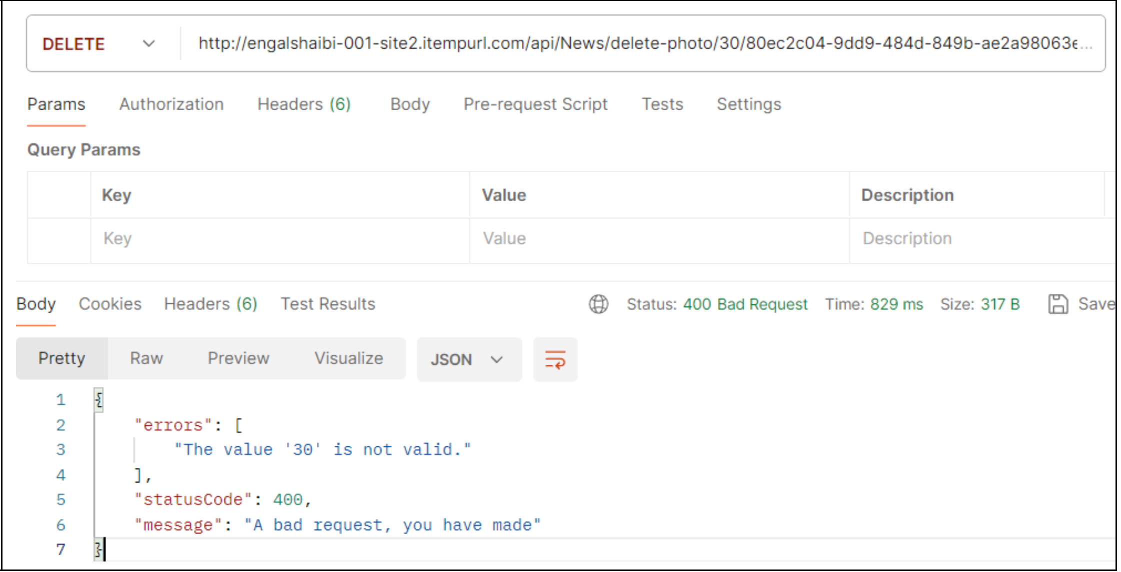
```
{
 "title": "Donetsk: Deadly blast hits market in Russia-held Ukraine city",
  "summary": "Russian-installed officials in Donetsk blamed Ukraine for the strike, although Kyiv has not
   commented",
  "source": "BBC",
  "content": "Russian-installed officials in Donetsk blamed Ukraine for the strike, although Kyiv has not
   commented",
```

PUT http://engalshaibi-001-site2.itempurl.com/api/News/Update/6 Send

Params Authorization Headers (9) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded [✓ raw] binary GraphQL JSON Beautify

```
{
"title": "Donetsk: Deadly blast hits market in Russia-held Ukraine city XXX",
  "summary": "Russian-installed officials in Donetsk blamed Ukraine for the strike, although Kyiv has not
   commented",
  "source": "BBC",
  "content": "Russian-installed officials in Donetsk blamed Ukraine for the strike, although Kyiv has not
   commented",
  "isShowInMain": true,
  "isChooseEditor": true,
```



DELETE http://engalshaibi-001-site2.itempurl.com/api/News/delete-photo/30/80ec2c04-9dd9-484d-849b-ae2a98063e...

Key	Value	Description
Key	Value	Description

Status: 400 Bad Request Time: 829 ms Size: 317 B

```
{
    "errors": [
        "The value '30' is not valid."
    ],
    "statusCode": 400,
    "message": "A bad request, you have made"
}
```

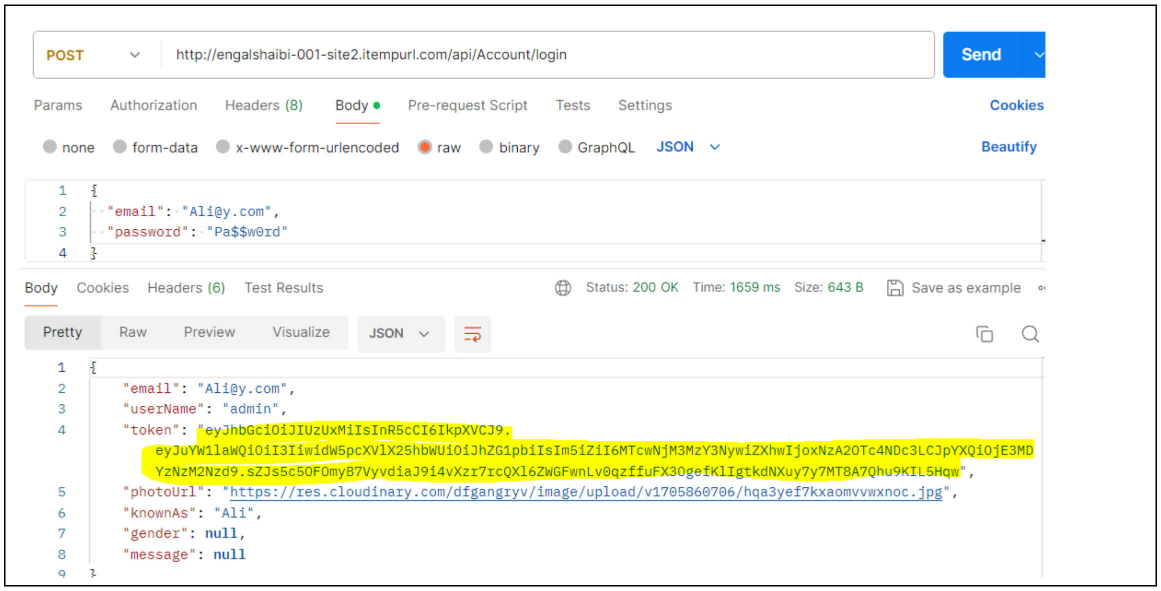
- ## Authorization and Authentication

Accessing to all End points (resources) is not always possible. In order to use some of them (such as adding, deleting, or modifying resources), you will need to log in with a special account.
A token is generated for each account in order to protect the resource and ensure that it was accessed by a valid user.

Note : You can access and log in to the application using the username and password attached below:

http://engalshaibi-001-site2.itempurl.com/api/Account/login

```
{
 "email": "Ali@y.com",
 "password": "Pa$$w0rd"
}
```



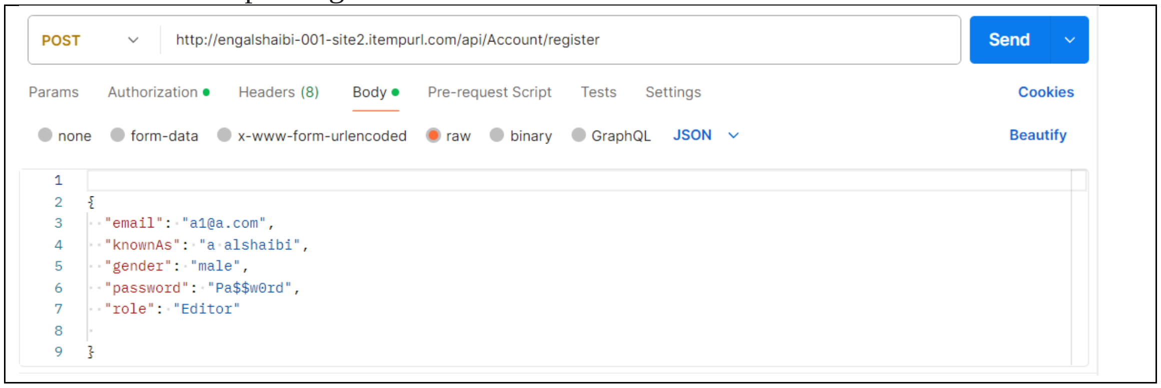
http://engalshaibi-001-site2.itempurl.com/api/Account/login

```
{
  "email": "Ali@y.com",
  "password": "Pa$$w0rd"
}
```

Status: 200 OK Time: 1659 ms Size: 643 B

```
{
    "email": "Ali@y.com",
    "userName": "admin",
    "token": "eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.
      eyJuYW1laWQiOiI3IiwidW5pcXVlX25hbWUiOiJhZG1pbiIsIm5iZiI6MTcwNjM3MzY3NywiZXhwIjoxNzA2OTc4NDc3LCJpYXQiOjE3MD
      YzNzM2Nzd9.sZJs5c5OFOmyB7VyvdiaJ9i4vXzr7rcQXl6ZWGFwnLv0qzffuFX3OgefKlIgtkdNXuy7y7MT8A7Qhu9KIL5Hqw",
    "photoUrl": "https://res.cloudinary.com/dfgangryv/image/upload/v1705860706/hqa3yef7kxaomvvwxnoc.jpg",
    "knownAs": "Ali",
    "gender": null,
    "message": null
}
```

Note : By using this account, which has full privileges (Admin), you can create other accounts with less privileges



http://engalshaibi-001-site2.itempurl.com/api/Account/register

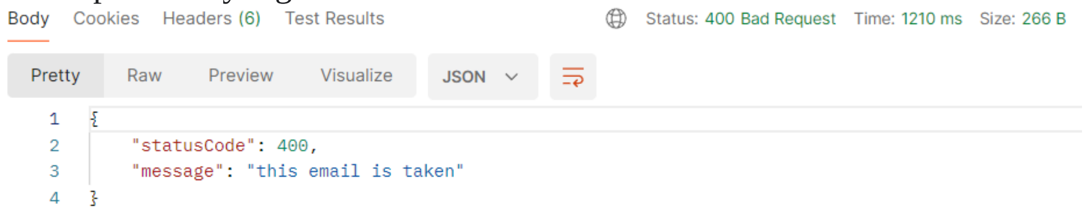
```

{
  "email": "a1@a.com",
  "knownAs": "a alshaibi",
  "gender": "male",
  "password": "Pa$$w0rd",
  "role": "Editor"

}
```

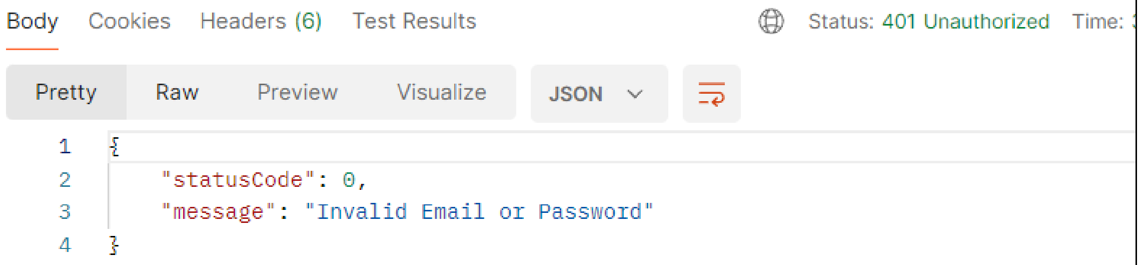
- **API Error Handling**
  The types of errors are many and varied, and their return formats are also different. For this reason, all types of common errors were handled and a unified format (JSON) was returned that contains a description of the error in a clear language that is understandable even to non-programmers. Below are some examples.

  - If we try to register a new account with an email address that was previously registered with



Status: 400 Bad Request Time: 1210 ms Size: 266 B

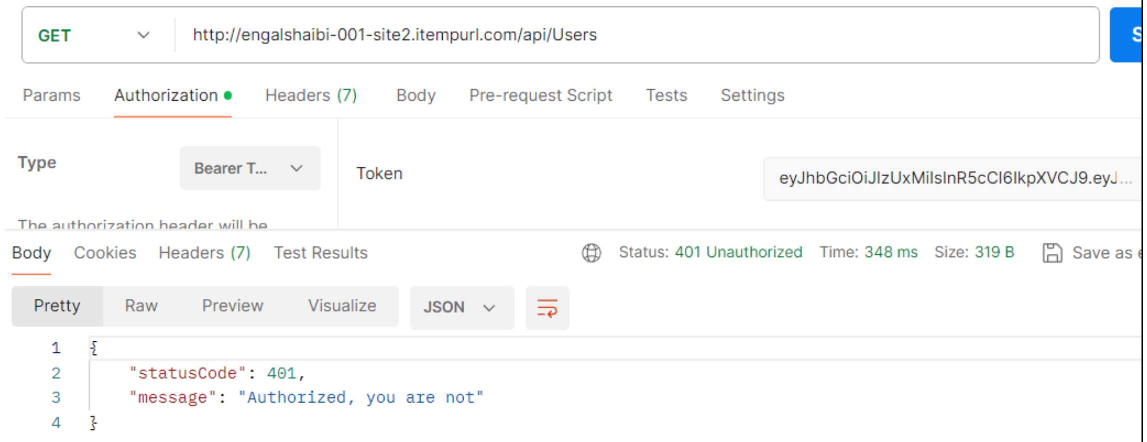
```
{
    "statusCode": 400,
    "message": "this email is taken"
}
```



Status: 401 Unauthorized Time:

```
{
    "statusCode": 0,
    "message": "Invalid Email or Password"
}
```

  - If we try to log in to the system with an incorrect email or password



GET http://engalshaibi-001-site2.itempurl.com/api/Users

Type: Bearer T...

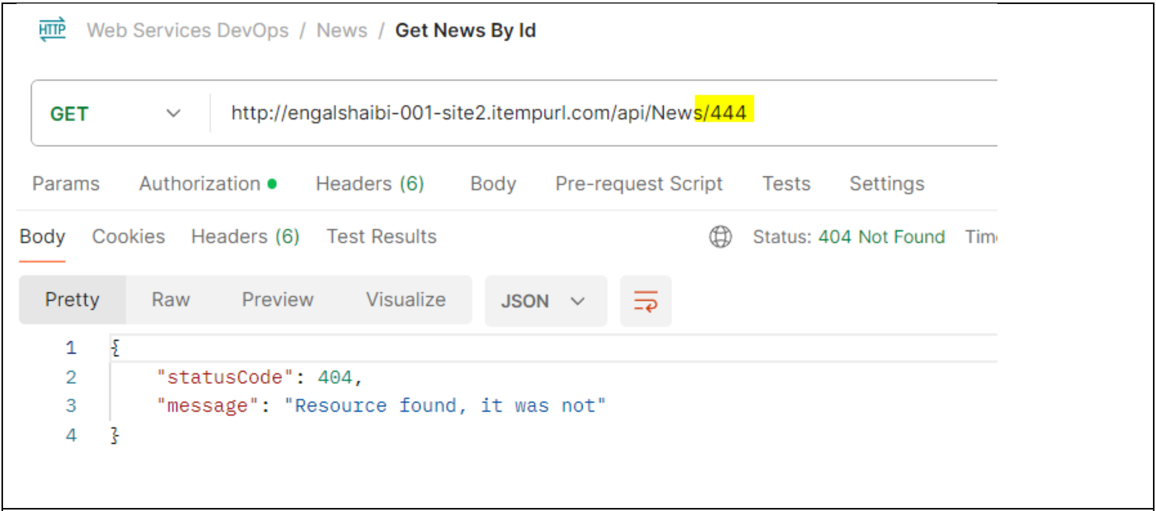
Token: eyJhbGciOiJIzUxMilsInR5cCI6IkpXVCJ9.eyJ...

The authorization header will be

Status: 401 Unauthorized Time: 348 ms Size: 319 B

```
{
    "statusCode": 401,
    "message": "Authorized, you are not"
}
```

  - If we try to access news that we do not have in the database



Web Services DevOps / News / **Get News By Id**

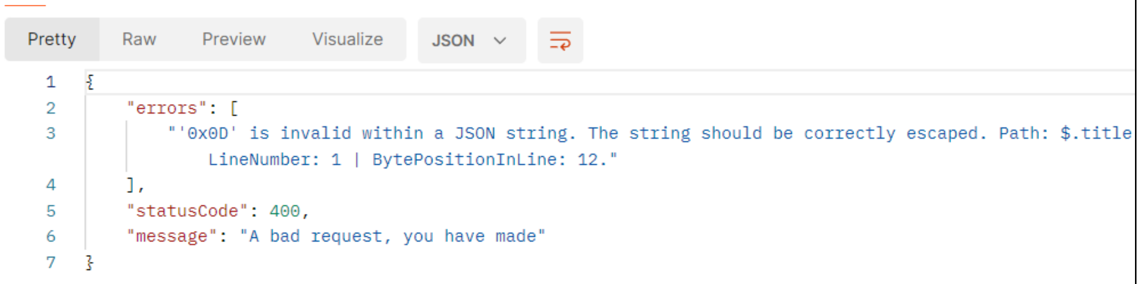
GET http://engalshaibi-001-site2.itempurl.com/api/News/444

Params | Authorization | Headers (6) | Body | Pre-request Script | Tests | Settings

Body | Cookies | Headers (6) | Test Results — Status: 404 Not Found

```
{
    "statusCode": 404,
    "message": "Resource found, it was not"
}
```

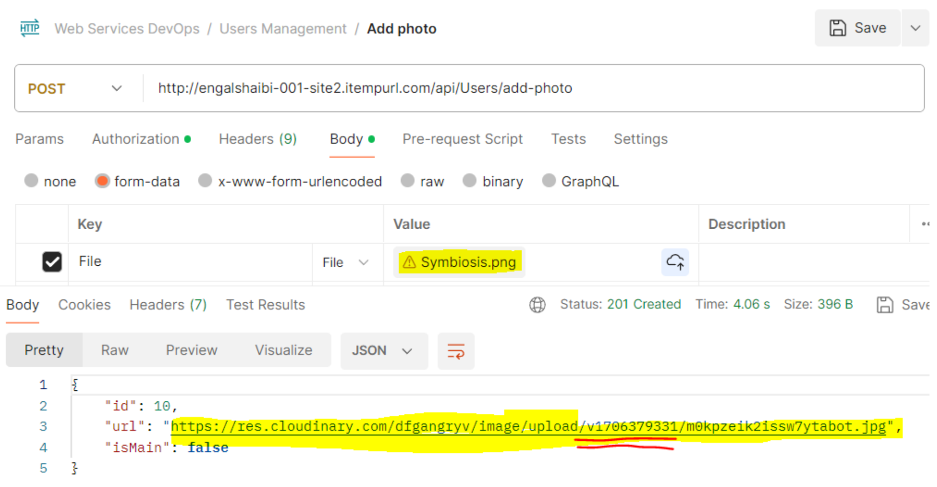
- If we enter incorrect data while adding news



```
{
    "errors": [
        "'0x0D' is invalid within a JSON string. The string should be correctly escaped. Path: $.title
          LineNumber: 1 | BytePositionInLine: 12."
    ],
    "statusCode": 400,
    "message": "A bad request, you have made"
}
```

- **Photo Management (Cloudinary / Server)**
  Our project supports image uploading and processing in two ways
  - **Cloud Storage**
    The user's photos are uploaded to the cloud via the free service provided by the **Cloudinary** website

http://engalshaibi-001-site2.itempurl.com/api/Users/add-photo



Web Services DevOps / Users Management / **Add photo**

POST http://engalshaibi-001-site2.itempurl.com/api/Users/add-photo

Params | Authorization | Headers (9) | Body | Pre-request Script | Tests | Settings

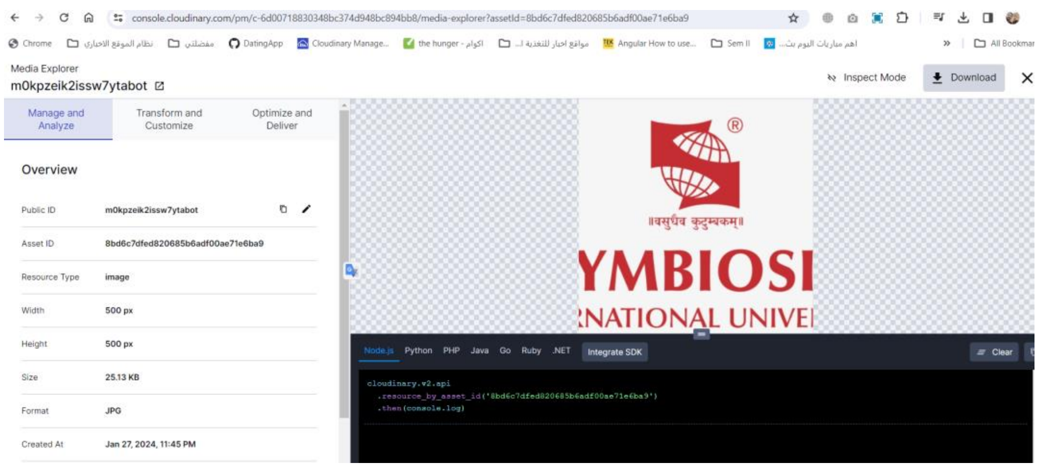
none | form-data | x-www-form-urlencoded | raw | binary | GraphQL

	Key		Value	Description
✓	File	File	Symbiosis.png	

Body | Cookies | Headers (7) | Test Results — Status: 201 Created Time: 4.06 s Size: 396 B

```
{
    "id": 10,
    "url": "https://res.cloudinary.com/dfgangryv/image/upload/v1706379331/m0kpzeik2issw7ytabot.jpg",
    "isMain": false
}
```

If we log in to the control panel on the **Cloudinary** website, we will find that the image has been uploaded there


console.cloudinary.com/pm/c-6d00718830348bc374d948bc894bb8/media-explorer?assetId=8bd6c7dfed820685b6adf00ae71e6ba9

Media Explorer
m0kpzeik2issw7ytabot

Overview

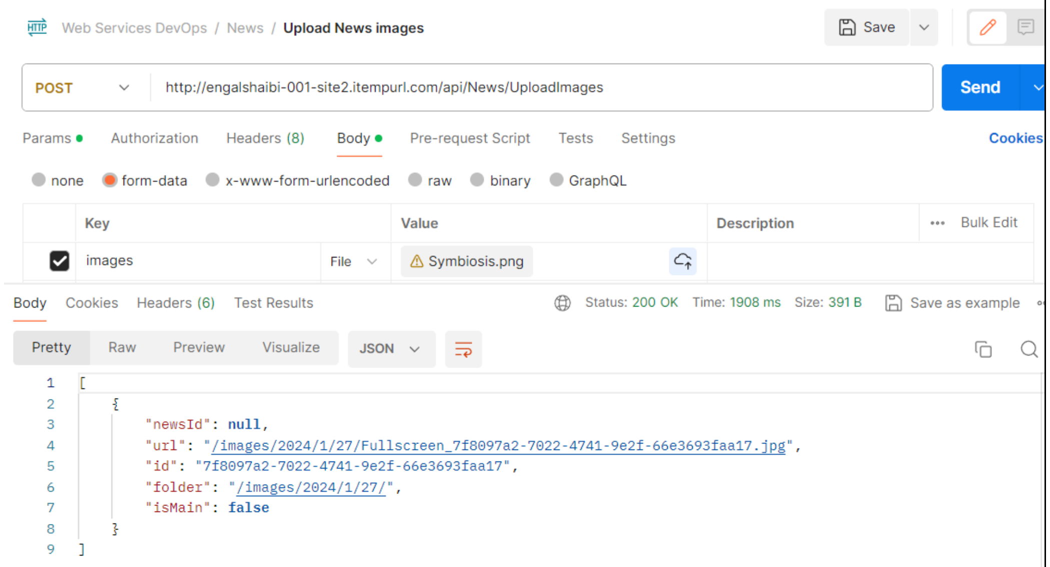
Public ID	m0kpzeik2issw7ytabot
Asset ID	8bd6c7dfed820685b6adf00ae71e6ba9
Resource Type	image
Width	500 px
Height	500 px
Size	25.13 KB
Format	JPG
Created At	Jan 27, 2024, 11:45 PM

```
cloudinary.v2.api
  .resource_by_asset_id('8bd6c7dfed820685b6adf00ae71e6ba9')
  .then(console.log)
```

○ Uploading to the server

Also for the purpose of learning, we have taken another approach to uploading news images in the traditional way, where the image is uploaded to the server and its id is stored in the database.
Note : The image is processed, its size is adjusted, and several copies of it are created in different sizes (thumbnail , Full screen and original) before storing it on the server.

http://engalshaibi-001-site2.itempurl.com/api/News/UploadImages


Web Services DevOps / News / **Upload News images**

POST http://engalshaibi-001-site2.itempurl.com/api/News/UploadImages

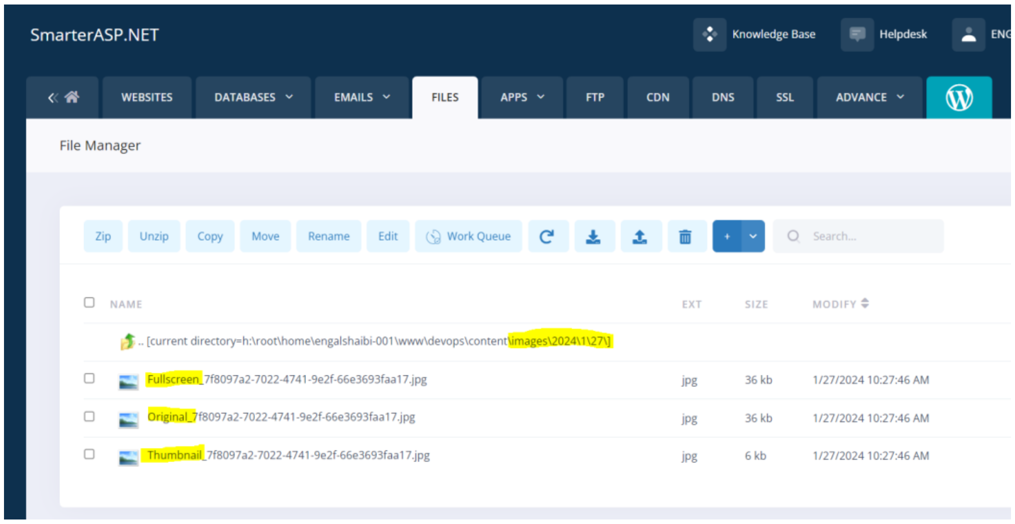
Body: form-data

Key		Value	Description
images	File	Symbiosis.png	

Status: 200 OK Time: 1908 ms Size: 391 B

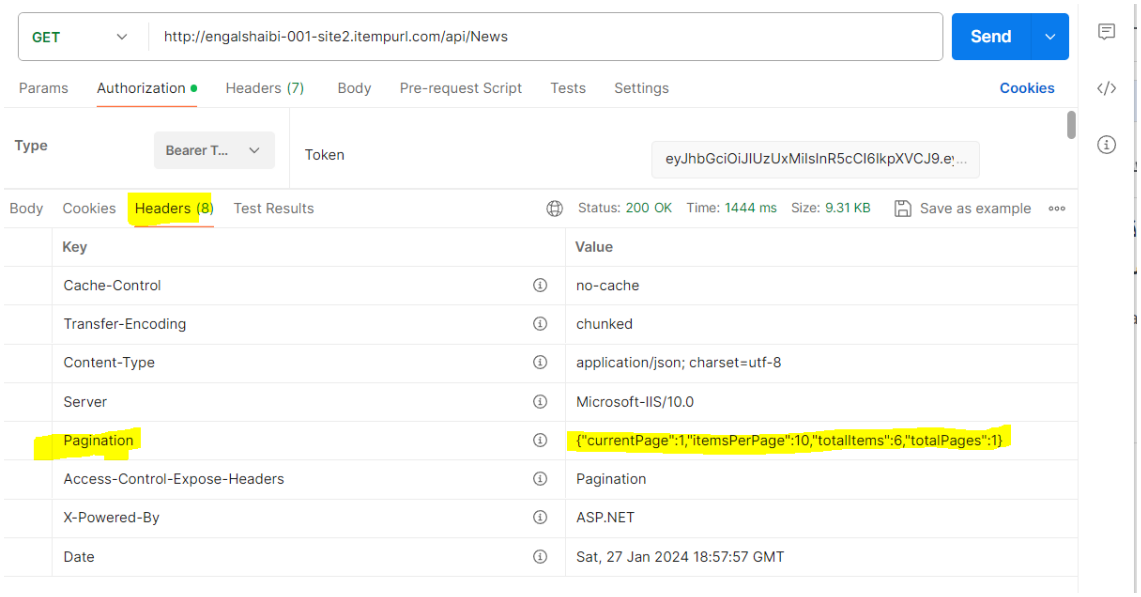
```
[
    {
        "newsId": null,
        "url": "/images/2024/1/27/Fullscreen_7f8097a2-7022-4741-9e2f-66e3693faa17.jpg",
        "id": "7f8097a2-7022-4741-9e2f-66e3693faa17",
        "folder": "/images/2024/1/27/",
        "isMain": false
    }
]
```

If we verify and log into the hosting on the server, we will find that the image has been uploaded successfully



NAME	EXT	SIZE	MODIFY
.. [current directory=h:\root\home\engalshaibi-001\www\devops\content\images\2024\1\27\]			
Fullscreen_7f8097a2-7022-4741-9e2f-66e3693faa17.jpg	jpg	36 kb	1/27/2024 10:27:46 AM
Original_7f8097a2-7022-4741-9e2f-66e3693faa17.jpg	jpg	36 kb	1/27/2024 10:27:46 AM
Thumbnail_7f8097a2-7022-4741-9e2f-66e3693faa17.jpg	jpg	6 kb	1/27/2024 10:27:46 AM

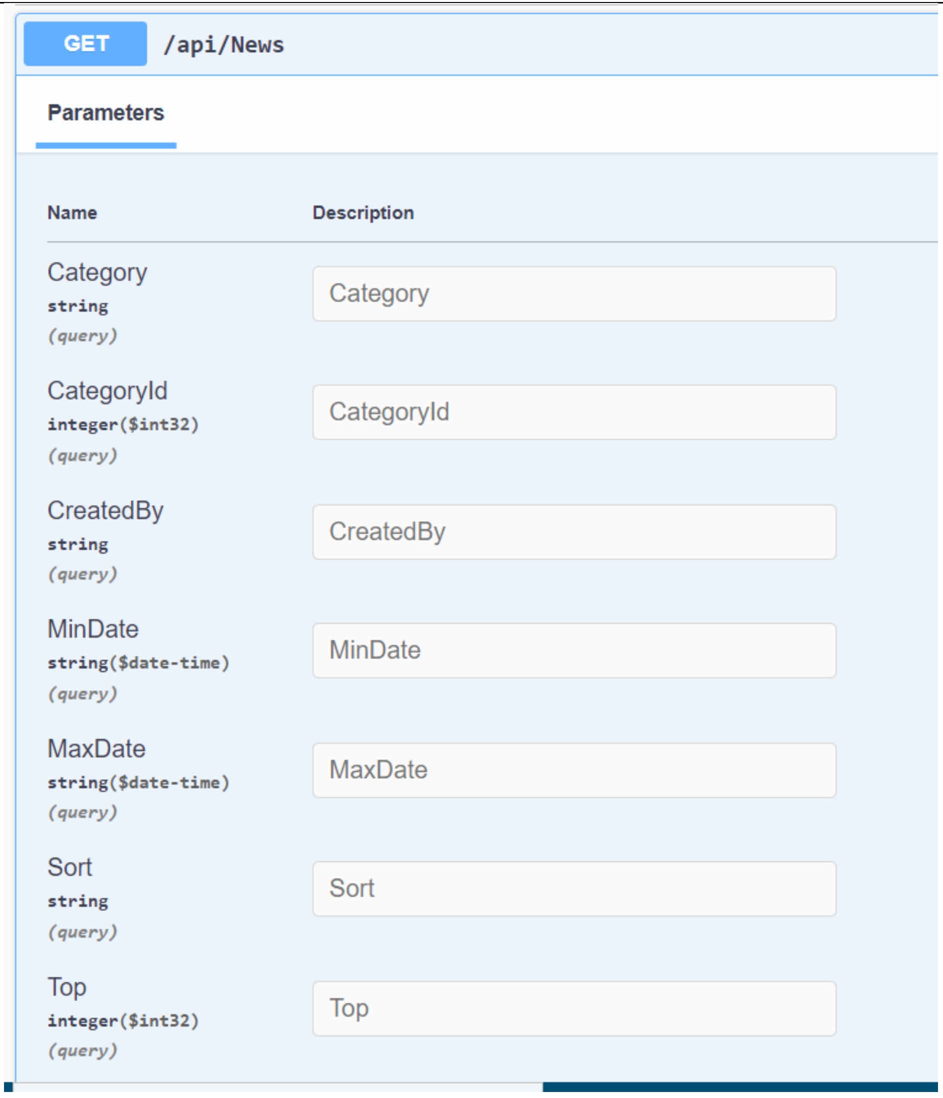
- **Pagination**
  Because the database will contain thousands of news records, it is best to improve performance to return these records within certain ranges.



```
GET http://engalshaibi-001-site2.itempurl.com/api/News
Type: Bearer T...    Token: eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.ey...
Status: 200 OK  Time: 1444 ms  Size: 9.31 KB
```

Key	Value
Cache-Control	no-cache
Transfer-Encoding	chunked
Content-Type	application/json; charset=utf-8
Server	Microsoft-IIS/10.0
Pagination	{"currentPage":1,"itemsPerPage":10,"totalItems":6,"totalPages":1}
Access-Control-Expose-Headers	Pagination
X-Powered-By	ASP.NET
Date	Sat, 27 Jan 2024 18:57:57 GMT

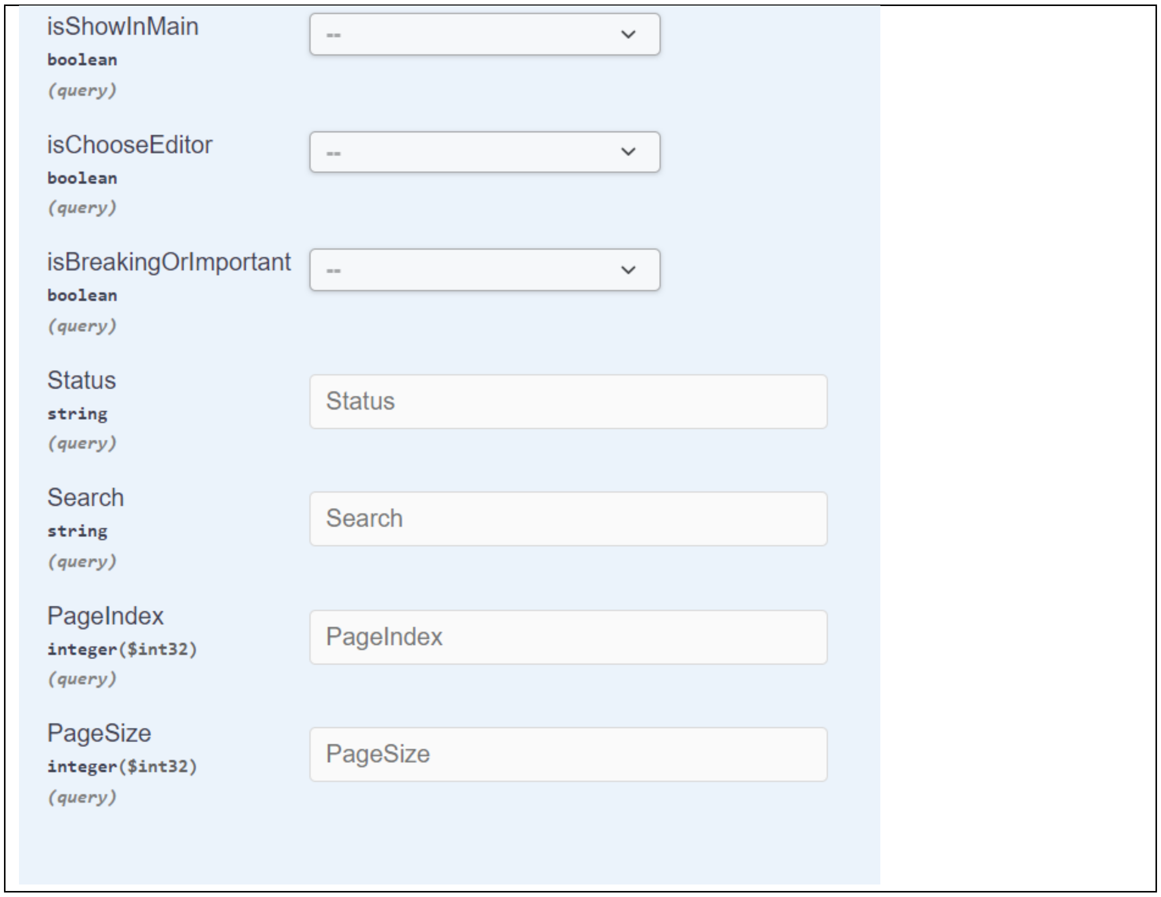
- **Sorting, Searching, and Filtering Data**
  The most important feature of the project is the full ability to control the returned data through a large number of parameters passed through the URL to the back-end.



GET /api/News

Parameters

Name	Description
Category string *(query)*	Category
CategoryId integer($int32) *(query)*	CategoryId
CreatedBy string *(query)*	CreatedBy
MinDate string($date-time) *(query)*	MinDate
MaxDate string($date-time) *(query)*	MaxDate
Sort string *(query)*	Sort
Top integer($int32) *(query)*	Top

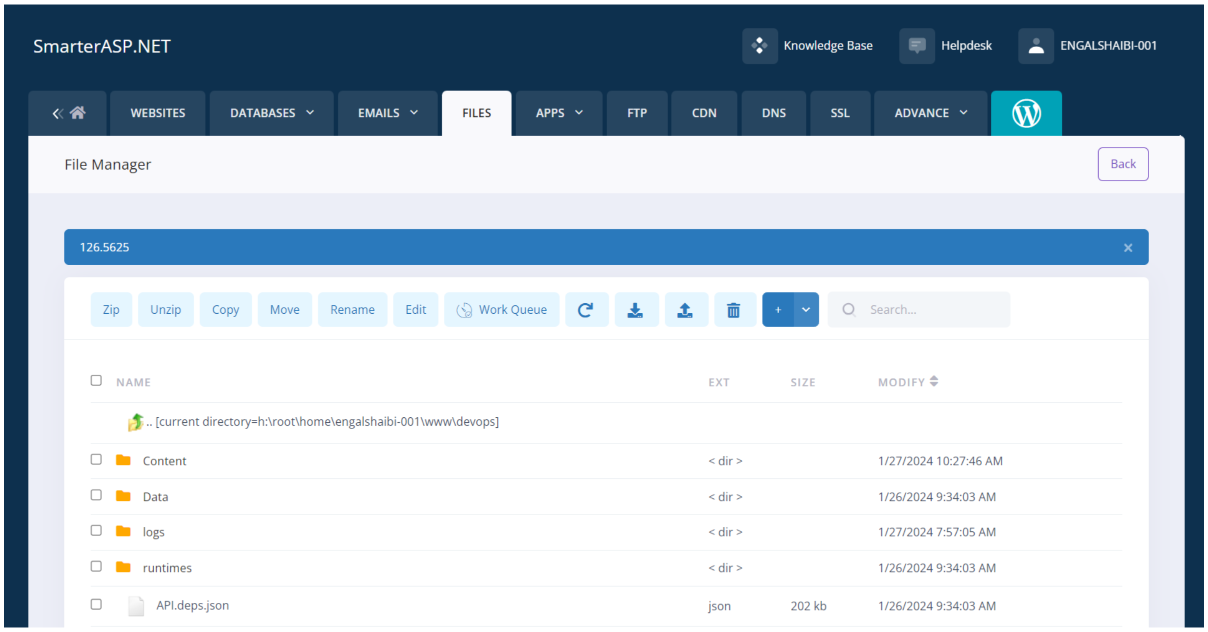


isShowInMain boolean *(query)*	--
isChooseEditor boolean *(query)*	--
isBreakingOrImportant boolean *(query)*	--
Status string *(query)*	Status
Search string *(query)*	Search
PageIndex integer($int32) *(query)*	PageIndex
PageSize integer($int32) *(query)*	PageSize

- **Clean Architecture**
  Repository Design Pattern, Generic Repository Design Pattern, The Unit of Work pattern and Specification Pattern, All of these a software design patterns were used in developing the project to provide scalability and ease of development.

4. Hosting and Testing Web API

The project and its database have uploaded and published on paid SmarterASP hosting.



126.5625

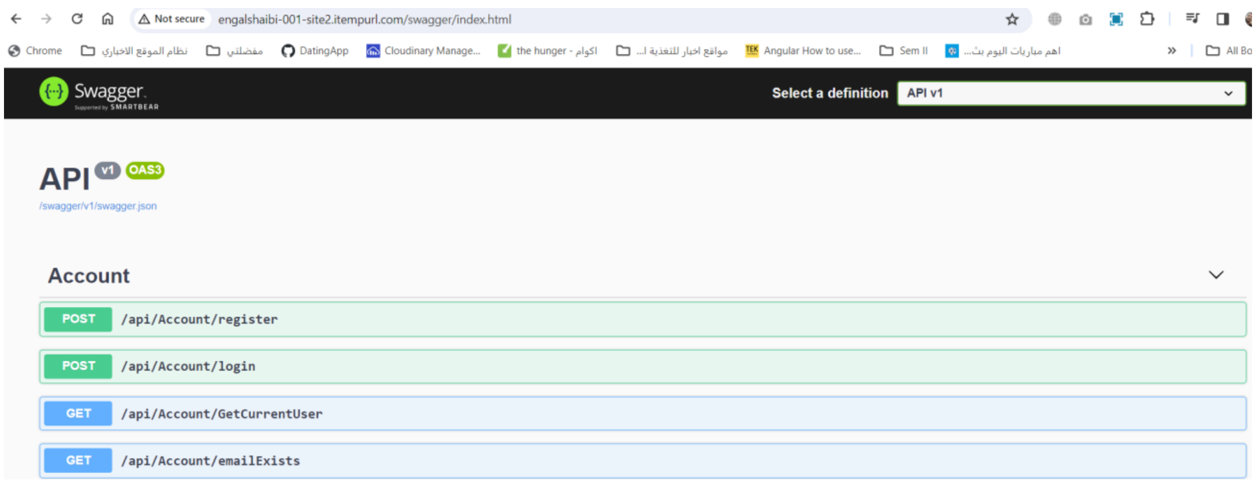
NAME	EXT	SIZE	MODIFY
.. [current directory=h:\root\home\engalshaibi-001\www\devops]			
Content	< dir >		1/27/2024 10:27:46 AM
Data	< dir >		1/26/2024 9:34:03 AM
logs	< dir >		1/27/2024 7:57:05 AM
runtimes	< dir >		1/26/2024 9:34:03 AM
API.deps.json	json	202 kb	1/26/2024 9:34:03 AM

- Swagger

Swagger easy tool to design and document our APIs at scale.

To get a feel of our project's api, click on the following link

http://engalshaibi-001-site2.itempurl.com/swagger/index.html

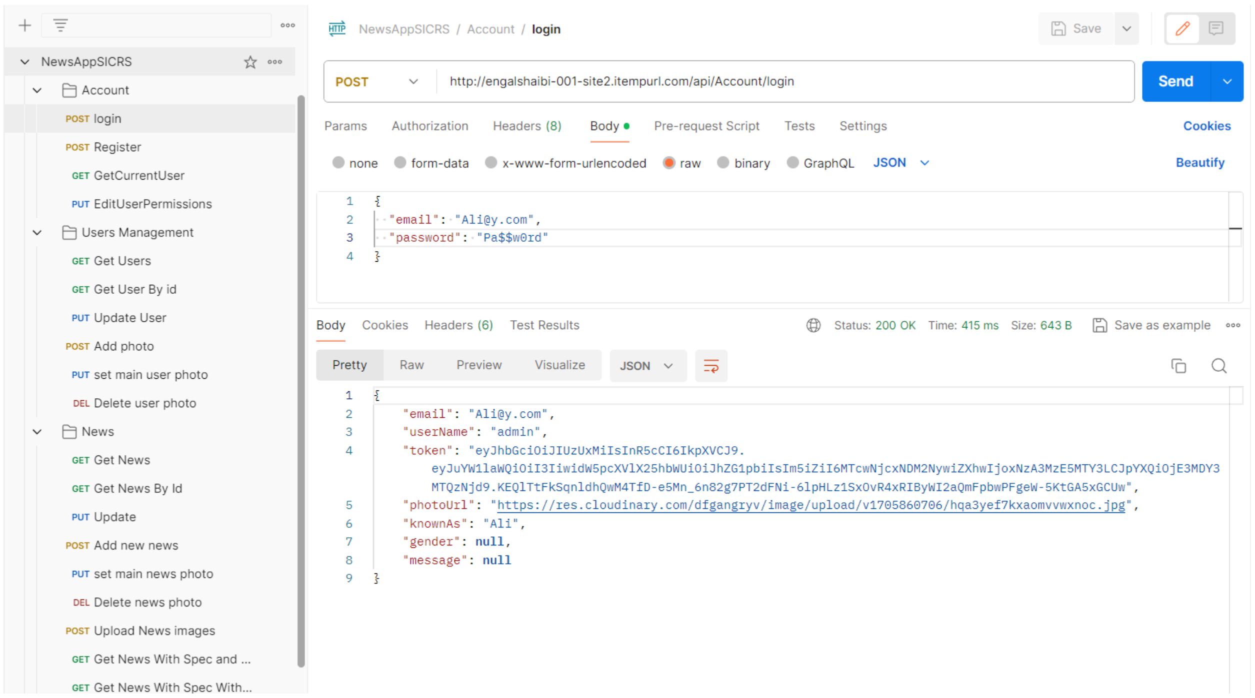


```
POST /api/Account/register
POST /api/Account/login
GET  /api/Account/GetCurrentUser
GET  /api/Account/emailExists
```

- Postman

Postman Collections are the gold standard for API organization. With collections, we can link related API elements together for easy editing, sharing, testing, and reuse.

For this reason, I have previously created a collection for each Endpoint and I will attach it to you within the project files



POST http://engalshaibi-001-site2.itempurl.com/api/Account/login

```
{
  "email": "Ali@y.com",
  "password": "Pa$$w0rd"
}
```

Status: 200 OK Time: 415 ms Size: 643 B

```
{
    "email": "Ali@y.com",
    "userName": "admin",
    "token": "eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.
        eyJuYW1laWQiOiI3IiwidW5pcXVlX25hbWUiOiJhZG1pbiIsIm5iZiI6MTcwNjcxNDM2NywiZXhwIjoxNzA3MzE5MTY3LCJpYXQiOjE3MDY3
        MTQzNjd9.KEQlTtFkSqnldhQwM4TfD-e5Mn_6n82g7PT2dFNi-6lpHLz1SxOvR4xRIByWI2aQmFpbwPFgeW-5KtGA5xGCUw",
    "photoUrl": "https://res.cloudinary.com/dfgangryv/image/upload/v1705860706/hqa3yef7kxaomvvwxnoc.jpg",
    "knownAs": "Ali",
    "gender": null,
    "message": null
}
```