SCHOOL OF COMPUTING

Diploma in Information Technology

ST0280 Cloud Service Computing

Supervisor: Mr Ji Peng Xiang

Admission's Number :

P1828849 Hew Zhong Xuan

P1829035 Isaiah Ang Hao Le

P1829150 Ryan Tan Jun Wei

P1829192 Thang Weng Khong

P1843088 Toh Zeng Hau

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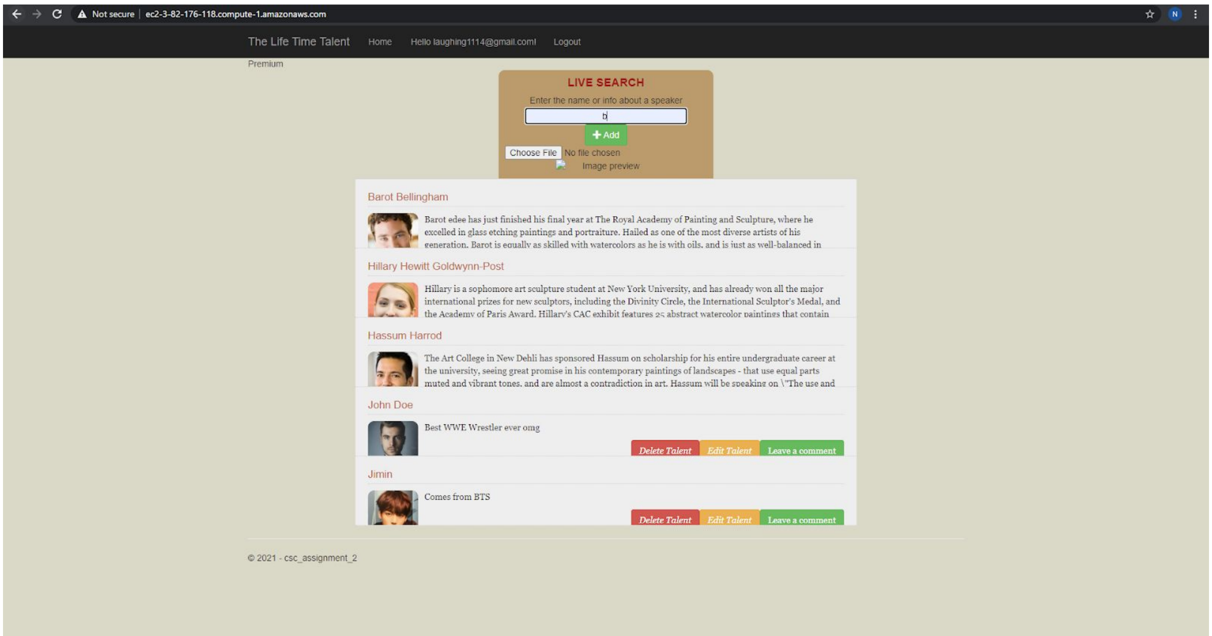
1. Hosting At EC2 Instance



Not secure | ec2-3-82-176-118.compute-1.amazonaws.com
The Life Time Talent
Home
Hello laughing1114@gmail.coml
Logout
Premium
LIVE SEARCH
Enter the name or info about a speaker
b
+ Add
Choose File
No file chosen
Image preview

Barot Bellingham

Barot edee has just finished his final year at The Royal Academy of Painting and Sculpture, where he excelled in glass etching paintings and portraiture. Hailed as one of the most diverse artists of his generation. Barot is equally as skilled with watercolors as he is with oils. and is just as well-balanced in

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Hillary is a sophomore art sculpture student at New York University, and has already won all the major international prizes for new sculptors, including the Divinity Circle, the International Sculptor's Medal, and the Academy of Paris Award. Hillary's CAC exhibit features 25 abstract watercolor paintings that contain

Hassum Harrod

The Art College in New Dehli has sponsored Hassum on scholarship for his entire undergraduate career at the university, seeing great promise in his contemporary paintings of landscapes - that use equal parts muted and vibrant tones. and are almost a contradiction in art. Hassum will be speaking on \"The use and

John Doe

Best WWE Wrestler ever omg

Jimin

Comes from BTS

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2. API Management

Publish/Deploy your Talents data REST API

2.1 API Documentation

1. GET API

HttpMethod	GET
Route	https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents
Description	Get All Talents
URI Parameters	None
Body Parameters	None
HttpResponseStatusCode	200 OK
HttpResponseData	[{"Id":1,"Name":"Barot Bellingham","ShortName":"Barot_Bellingham","Reknown":"Royal Academy of Painting and Sculpture","Bio":"Barot edee has just finished his final year at The Royal Academy of Painting and Sculpture, where he excelled in glass etching paintings and portraiture. Hailed as one of the most diverse artists of his generation, Barot is equally as skilled with watercolors as he is with oils, and is just as well-balanced in different subject areas. Barot's collection entitled \\\"The Un-Collection\\\" will adorn the walls of Gilbert Hall, depicting his range of skills and sensibilities - all of them, uniquely Barot, yet undeniably different","Img_url":"https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Barot_Bellingham_tn.jpg"},{"Id":3,"Name":"Hillary Hewitt Goldwynn-Post","ShortName":"Hillary_Goldwynn","Reknown":"New York University","Bio":"Hillary is a sophomore art sculpture student at New York University, and has already won all the major

	international prizes for new sculptors, including the Divinity Circle, the International Sculptor's Medal, and the Academy of Paris Award. Hillary's CAC exhibit features 25 abstract watercolor paintings that contain only water images including waves, deep sea, and river.","Img_url":"https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Hillary_Goldwynn_tn.jpg"},{"Id":4,"Name":" Hassum Harrod","ShortName":"Hassum_Harrod","Reknown":"Art College in New Dehli","Bio":"The Art College in New Dehli has sponsored Hassum on scholarship for his entire undergraduate career at the university, seeing great promise in his contemporary paintings of landscapes - that use equal parts muted and vibrant tones, and are almost a contradiction in art. Hassum will be speaking on \\\"The use and absence of color in modern art\\\" during Thursday's agenda.","Img_url":"https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Hassum_Harrod_tn.jpg"},{"Id":27,"Name":"as","ShortName":"as","Reknown":"as","Bio":"as","Img_url":"http://csc-assignment-1.s3.amazonaws.com/pexels-photo-220453.jpeg"},{"Id":28,"Name":"John Doe","ShortName":"John_Doe","Reknown":"Wrestler","Bio":"Best WWE Wrestler ever omg","Img_url":"http://csc-assignment-1.s3.amazonaws.com/pexels-photo-614810.jpeg"}]

2. POST API

HttpMethod	POST
Route	**https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents**

Description	Adding a Talent
URI Parameters	None
Body Parameters	Variable name: Name Data Type: String Variable name: ShortName Data Type: String Variable name: Reknown Data Type: String Variable name: Bio Data Type: String Variable name: Img_Url Data Type: String
HttpResponseStatusCode	201 Created
HttpResponseData	{"Id":37,"Name":"Adam","ShortName":"2334","Reknown":"uni of test","Bio":"aaaaa","Img_url":"https://aaa.com"}

3. PUT API

HttpMethod	PUT
Route	https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=?
Description	Updating Talent Information
URI Parameters	Variable name: id Data Type: Integer Required: Required
Body Parameters	

	Variable name: Name Data Type: String Variable name: ShortName Data Type: String Variable name: Reknown Data Type: String Variable name: Bio Data Type: String Variable name: Img_Url Data Type: String
HttpResponseStatusCode	200 OK

HttpResponseData	{
	“Recordsets”: [],
	“Output”: {},
	“rowsAffected”: [1]
	}

4. DELETE API

HttpMethod	DELETE
Route	https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=?
Description	Deleting a Talent
URI Parameters	Variable name: id Data Type: Integer Required: Required
Body Parameters	None
HttpResponseStatusCode	200 OK

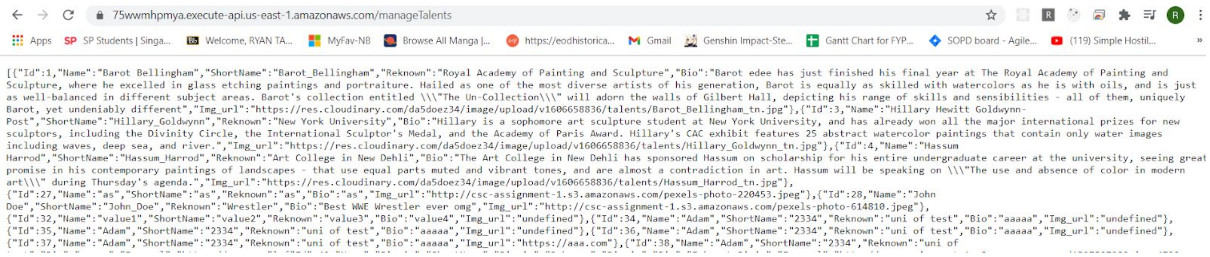
HttpResponseData	{
	“Recordsets”: [],
	“Output”: {},
	“rowsAffected”: [1]
	}

5. GET By ID API

HttpMethod	GET
Route	https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=?
Description	Get one talent by id
URI Parameters	Variable name: Id Datatype: Int Required: Required
Body Parameters	None
HttpResponseStatusCode	200 OK
HttpResponseData	[{ "Id": 58, "Name": "Haachama", "ShortName": "Akai Haato", "Reknown": "HoloEn Gen 0", "Bio": "Hololive Gen 1", "Img_url": "www.haachamchama.com" }]

2.2 POSTMAN Screenshots

[GET]



```
[{"Id":1,"Name":"Barot Bellingham","ShortName":"Barot_Bellingham","Reknown":"Royal Academy of Painting and Sculpture","Bio":"Barot edee has just finished his final year at The Royal Academy of Painting and
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{"Id":27,"Name":"as","ShortName":"as","Reknown":"as","Bio":"as","Img_url":"http://csc-assignment-1.s3.amazonaws.com/pexels-photo-220453.jpeg"},{"Id":28,"Name":"John
Doe","ShortName":"John_Doe","Reknown":"Wrestler","Bio":"Best WWE Wrestler ever omg","Img_url":"http://csc-assignment-1.s3.amazonaws.com/pexels-photo-614810.jpeg"},
{"Id":32,"Name":"value1","ShortName":"value2","Reknown":"value3","Bio":"value4","Img_url":"undefined"},{"Id":34,"Name":"Adam","ShortName":"2334","Reknown":"uni of test","Bio":"aaaaa","Img_url":"undefined"},
{"Id":35,"Name":"Adam","ShortName":"2334","Reknown":"uni of test","Bio":"aaaaa","Img_url":"undefined"},{"Id":36,"Name":"Adam","ShortName":"2334","Reknown":"uni of test","Bio":"aaaaa","Img_url":"undefined"},
{"Id":37,"Name":"Adam","ShortName":"2334","Reknown":"uni of test","Bio":"aaaaa","Img_url":"https://aaa.com"},{"Id":38,"Name":"Adam","ShortName":"2334","Reknown":"uni of
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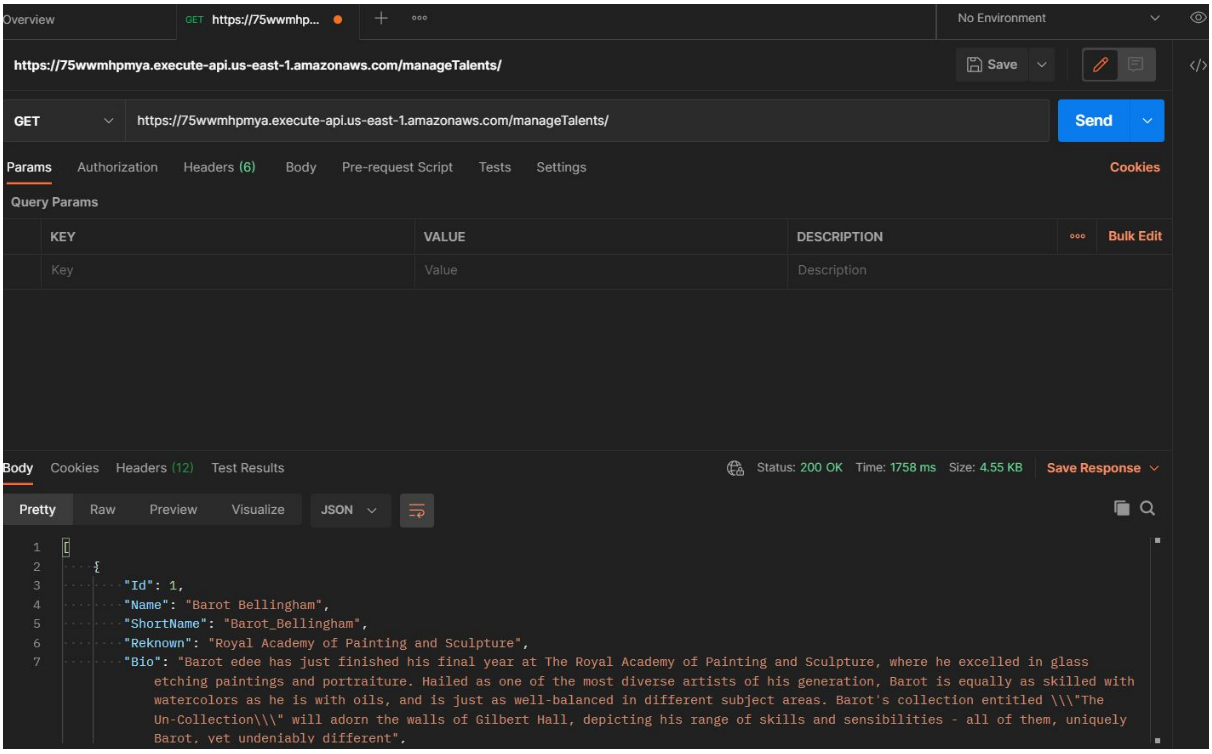


https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

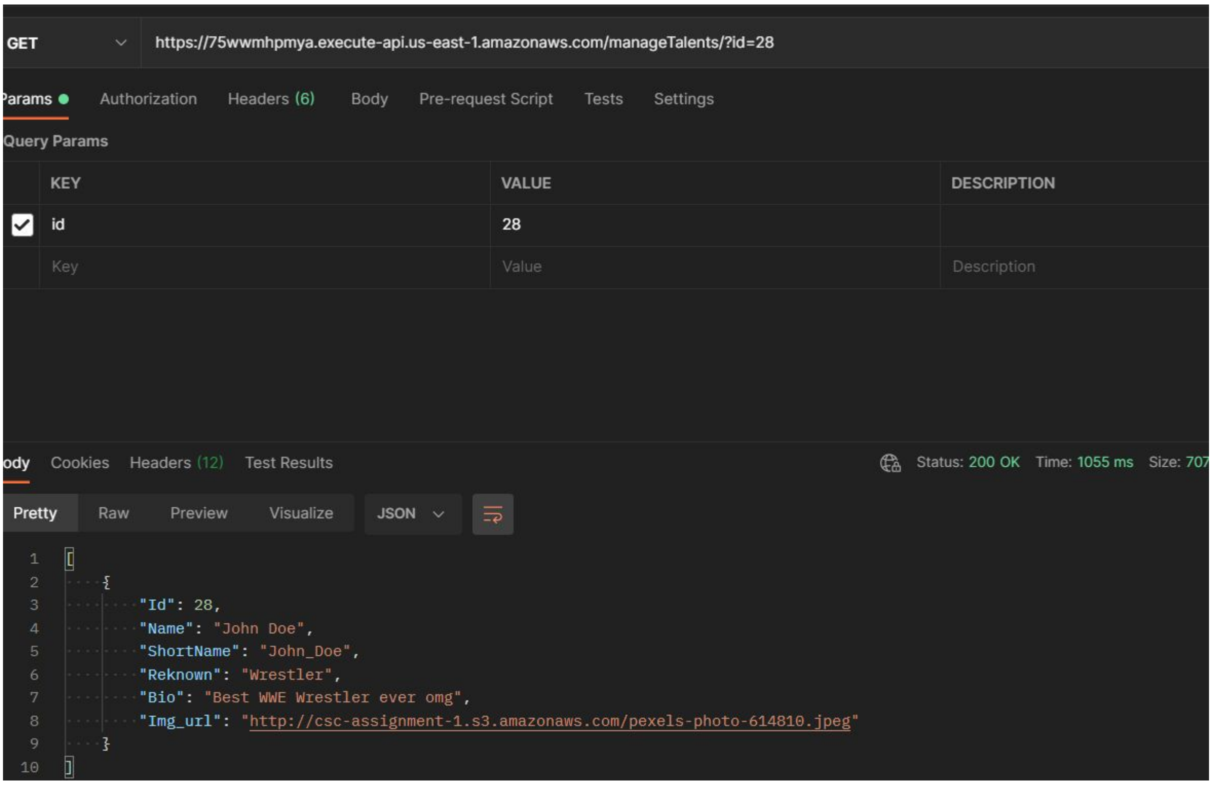
GET https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

KEY	VALUE	DESCRIPTION
Key	Value	Description

Status: 200 OK Time: 1758 ms Size: 4.55 KB

```
[
    {
        "Id": 1,
        "Name": "Barot Bellingham",
        "ShortName": "Barot_Bellingham",
        "Reknown": "Royal Academy of Painting and Sculpture",
        "Bio": "Barot edee has just finished his final year at The Royal Academy of Painting and Sculpture, where he excelled in glass
            etching paintings and portraiture. Hailed as one of the most diverse artists of his generation, Barot is equally as skilled with
            watercolors as he is with oils, and is just as well-balanced in different subject areas. Barot's collection entitled \\\"The
            Un-Collection\\\" will adorn the walls of Gilbert Hall, depicting his range of skills and sensibilities - all of them, uniquely
            Barot, yet undeniably different",
```

[GetById]



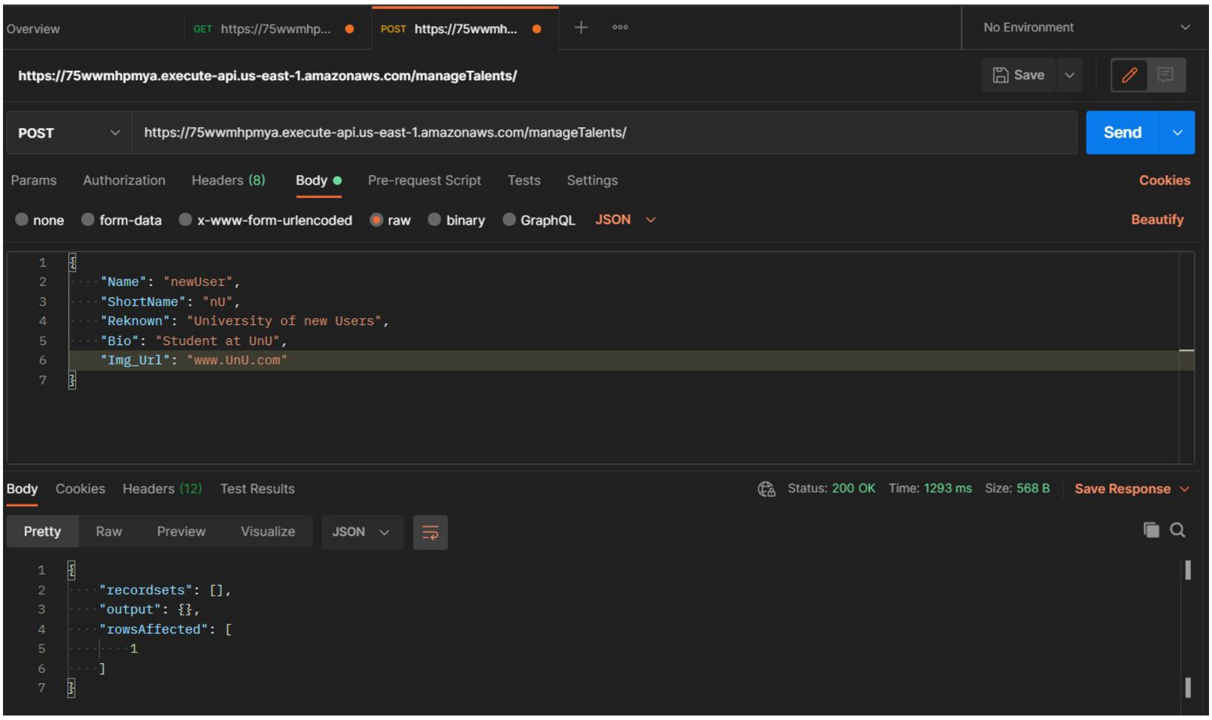
GET https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=28

	KEY	VALUE	DESCRIPTION
☑	id	28	
	Key	Value	Description

Status: 200 OK Time: 1055 ms Size: 707

```
[
    {
        "Id": 28,
        "Name": "John Doe",
        "ShortName": "John_Doe",
        "Reknown": "Wrestler",
        "Bio": "Best WWE Wrestler ever omg",
        "Img_url": "http://csc-assignment-1.s3.amazonaws.com/pexels-photo-614810.jpeg"
    }
]
```

[POST]



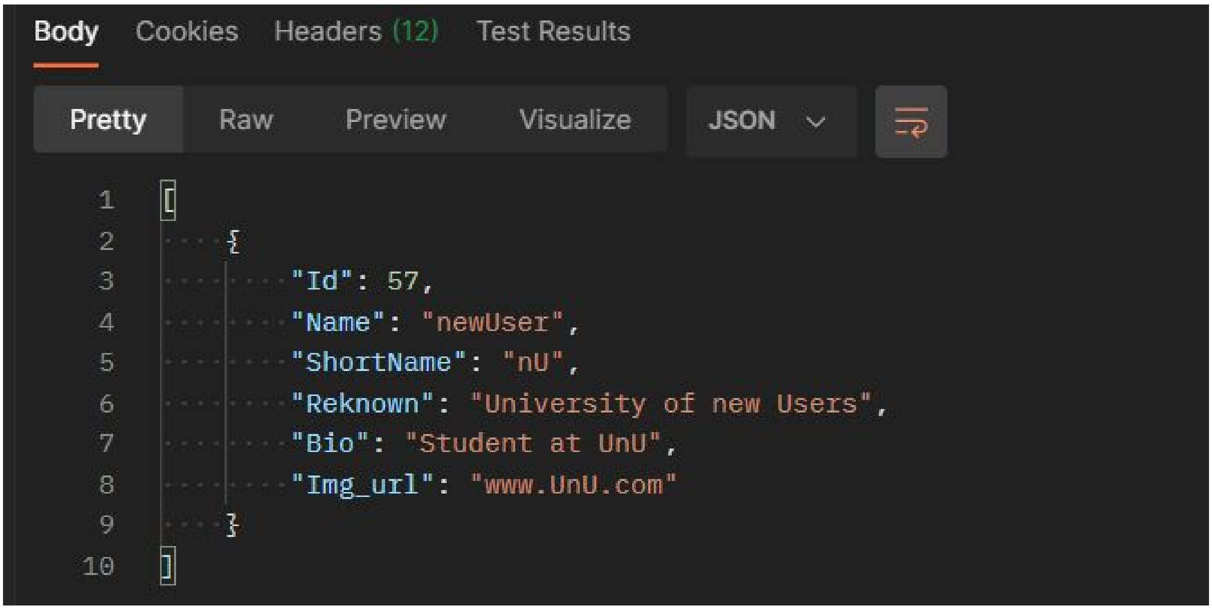
https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

POST https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

```
{
    "Name": "newUser",
    "ShortName": "nU",
    "Reknown": "University of new Users",
    "Bio": "Student at UnU",
    "Img_Url": "www.UnU.com"
}
```

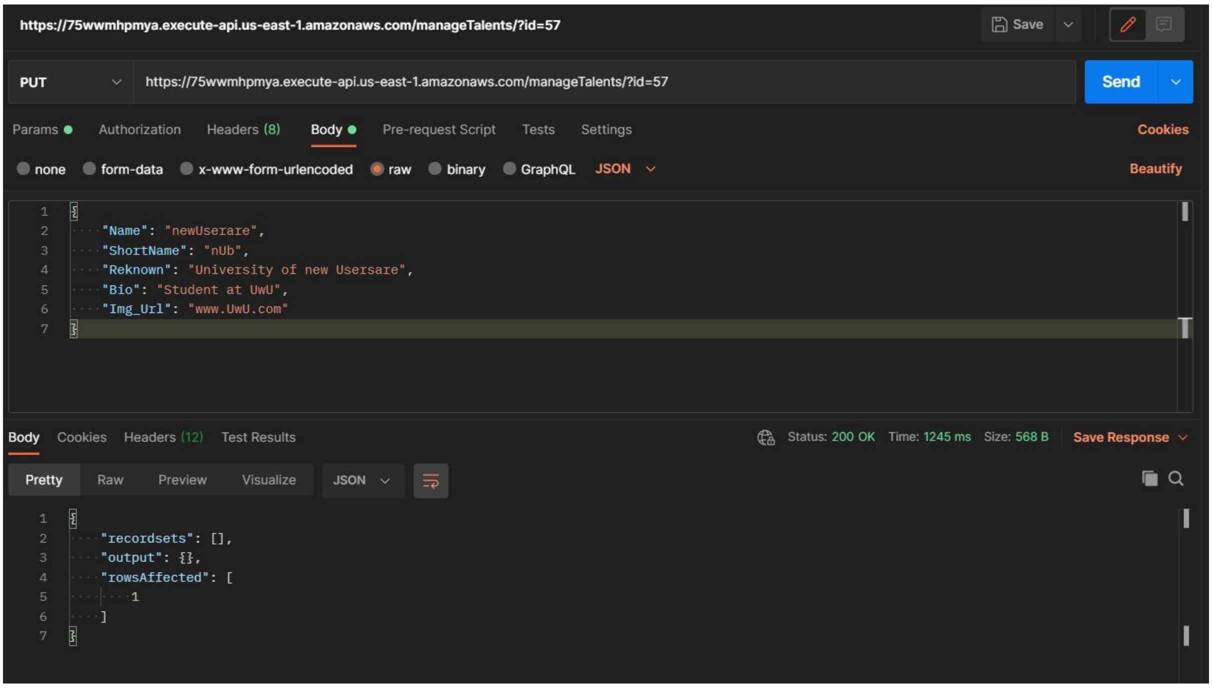
Status: 200 OK Time: 1293 ms Size: 568 B

```
{
    "recordsets": [],
    "output": {},
    "rowsAffected": [
        1
    ]
}
```



```
[
    {
        "Id": 57,
        "Name": "newUser",
        "ShortName": "nU",
        "Reknown": "University of new Users",
        "Bio": "Student at UnU",
        "Img_url": "www.UnU.com"
    }
]
```

[Put]



https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

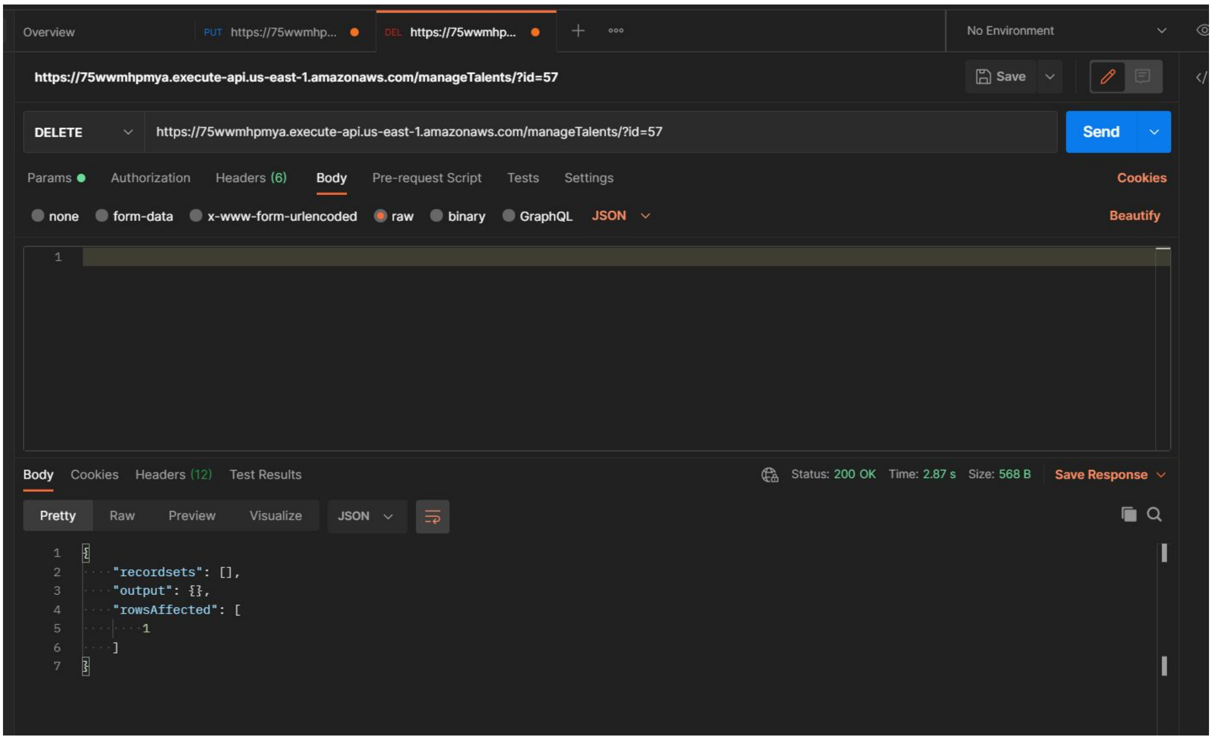
PUT https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

```
{
    "Name": "newUserare",
    "ShortName": "nUb",
    "Reknown": "University of new Usersare",
    "Bio": "Student at UwU",
    "Img_Url": "www.UwU.com"
}
```

Status: 200 OK Time: 1245 ms Size: 568 B

```
{
    "recordsets": [],
    "output": {},
    "rowsAffected": [
        1
    ]
}
```

[Delete]



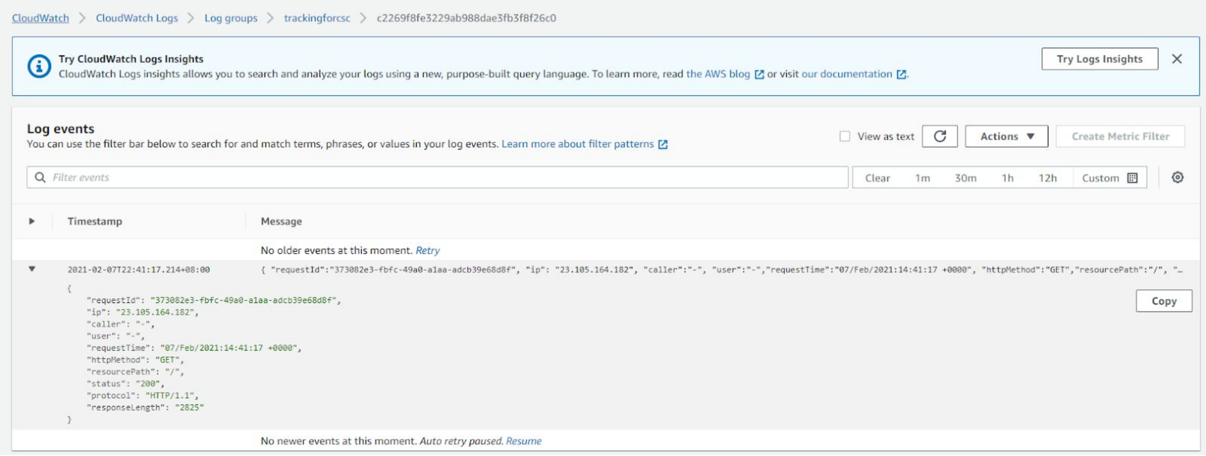
https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

DELETE https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

Status: 200 OK Time: 2.87 s Size: 568 B

```
{
    "recordsets": [],
    "output": {},
    "rowsAffected": [
        1
    ]
}
```

2.3 Cloudwatch - API Logging



CloudWatch > CloudWatch Logs > Log groups > trackingforcsc > c2269f8fe3229ab988dae3fb3f8f26c0
Try Logs Insights
Actions ▼
Create Metric Filter
Clear
1m
30m
1h
12h
Custom
Copy

Try CloudWatch Logs Insights
CloudWatch Logs insights allows you to search and analyze your logs using a new, purpose-built query language. To learn more, read the AWS blog or visit our documentation.

Log events
You can use the filter bar below to search for and match terms, phrases, or values in your log events. Learn more about filter patterns

□ View as text

Filter events

Timestamp	Message
	No older events at this moment. *Retry*
2021-02-07T22:41:17.214+08:00	{ "requestId":"373082e3-fbfc-49a0-a1aa-adcb39e68d8f", "ip": "23.105.164.182", "caller":"-", "user":"-","requestTime":"07/Feb/2021:14:41:17 +0000", "httpMethod":"GET","resourcePath":"/", "…

```
{
    "requestId": "373082e3-fbfc-49a0-a1aa-adcb39e68d8f",
    "ip": "23.105.164.182",
    "caller": "-",
    "user": "-",
    "requestTime": "07/Feb/2021:14:41:17 +0000",
    "httpMethod": "GET",
    "resourcePath": "/",
    "status": "200",
    "protocol": "HTTP/1.1",
    "responseLength": "2825"
}
```

No newer events at this moment. *Auto retry paused.* Resume

3. Payment Management

3.1 Subscribe

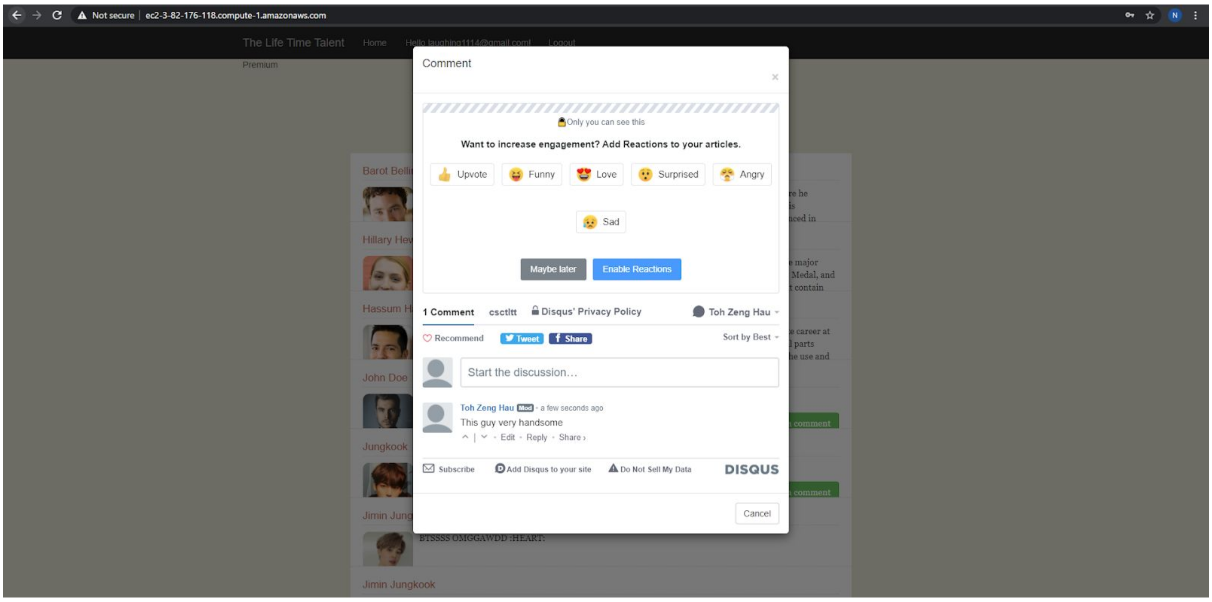
1. To subscribe premium plan
2. Method: POST
3. URL: /Payment/Subscribe
4. Params:
    a. Email
    b. Plan
    c. Token
    d. Customer_user_id

3.2 Webhook

1. To receive charge status and last paid
2. Method: GET
3. URL: /Payment/Webhook

3.3 Discussion Management

Enable real time commenting for Paid User



Only you can see this

Want to increase engagement? Add Reactions to your articles.

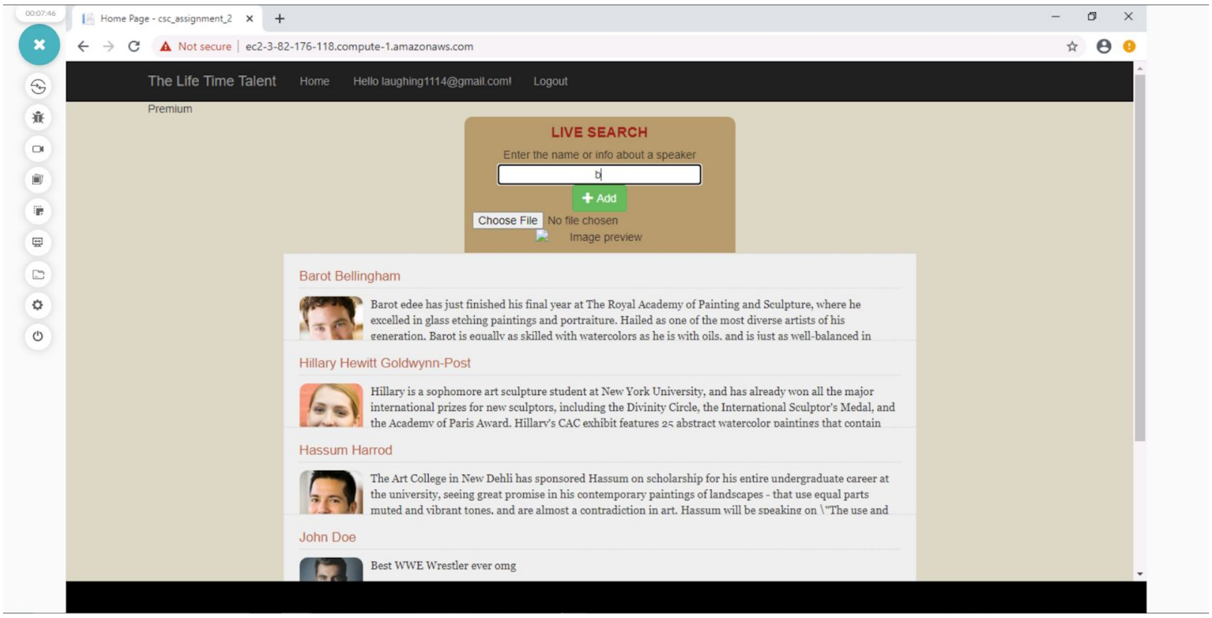
Toh Zeng Hau Mod · a few seconds ago

This guy very handsome

BTSSSS OMGGAWDD :HEART:

4. Cross Browser Testing

4.1 Google Chrome


Home Page - csc_assignment_2
Not secure | ec2-3-82-176-118.compute-1.amazonaws.com
The Life Time Talent
Home
Hello laughing1114@gmail.com!
Logout
Premium
LIVE SEARCH
Enter the name or info about a speaker
b
+ Add
Choose File
No file chosen
Image preview

Barot Bellingham

Barot edee has just finished his final year at The Royal Academy of Painting and Sculpture, where he excelled in glass etching paintings and portraiture. Hailed as one of the most diverse artists of his generation. Barot is equally as skilled with watercolors as he is with oils. and is just as well-balanced in

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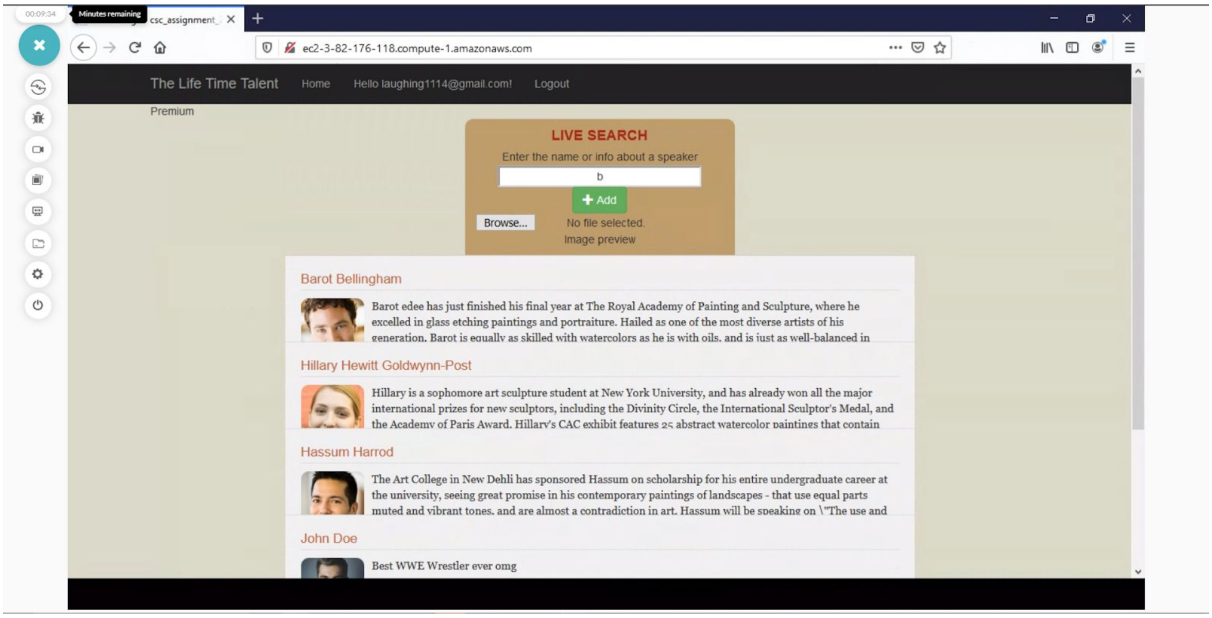
John Doe

Best WWE Wrestler ever omg

4.2 FireFox



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John Doe

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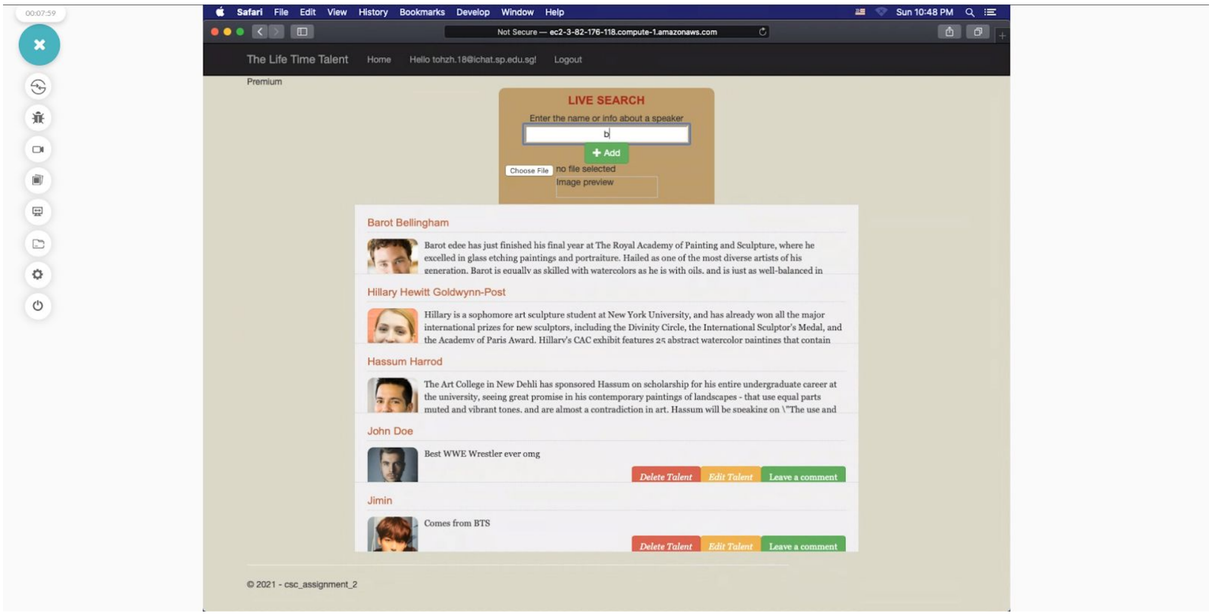
4.3 Safari



Enter the name or info about a speaker

b

no file selected

Image preview

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John Doe

Best WWE Wrestler ever omg

Jimin

Comes from BTS

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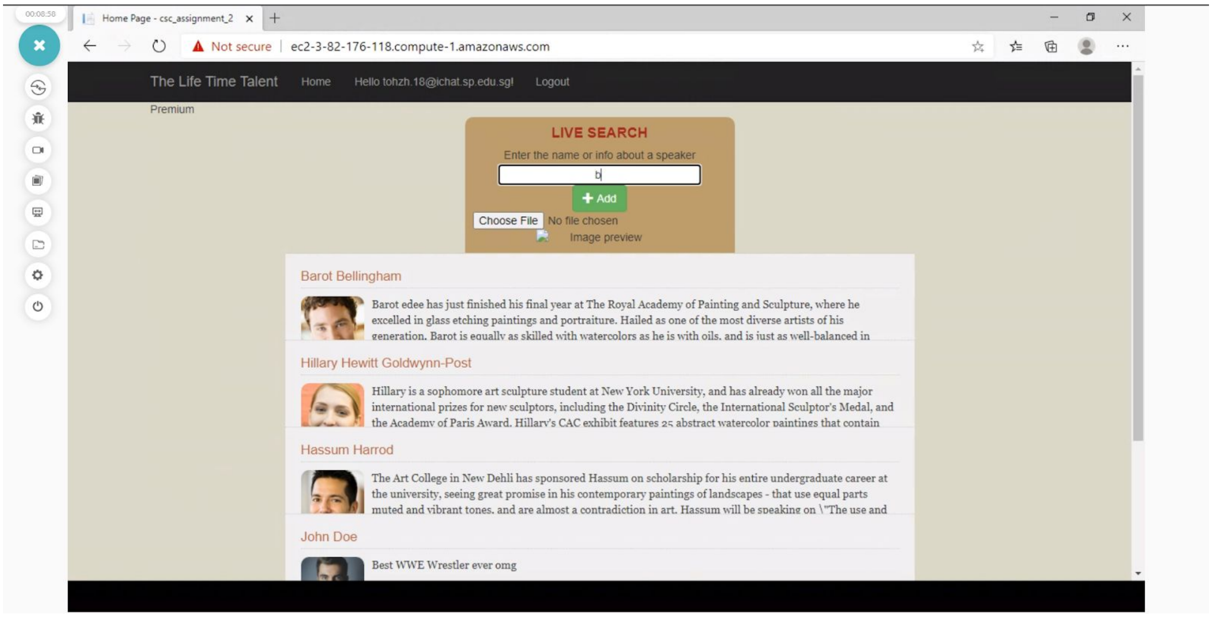
4.4 Microsoft Edge


00:08:58
Home Page - csc_assignment_2
Not secure | ec2-3-82-176-118.compute-1.amazonaws.com
The Life Time Talent
Home
Hello tohzh.18@ichat.sp.edu.sg!
Logout
Premium
LIVE SEARCH
+ Add
Choose File

Enter the name or info about a speaker

b

No file chosen

Image preview

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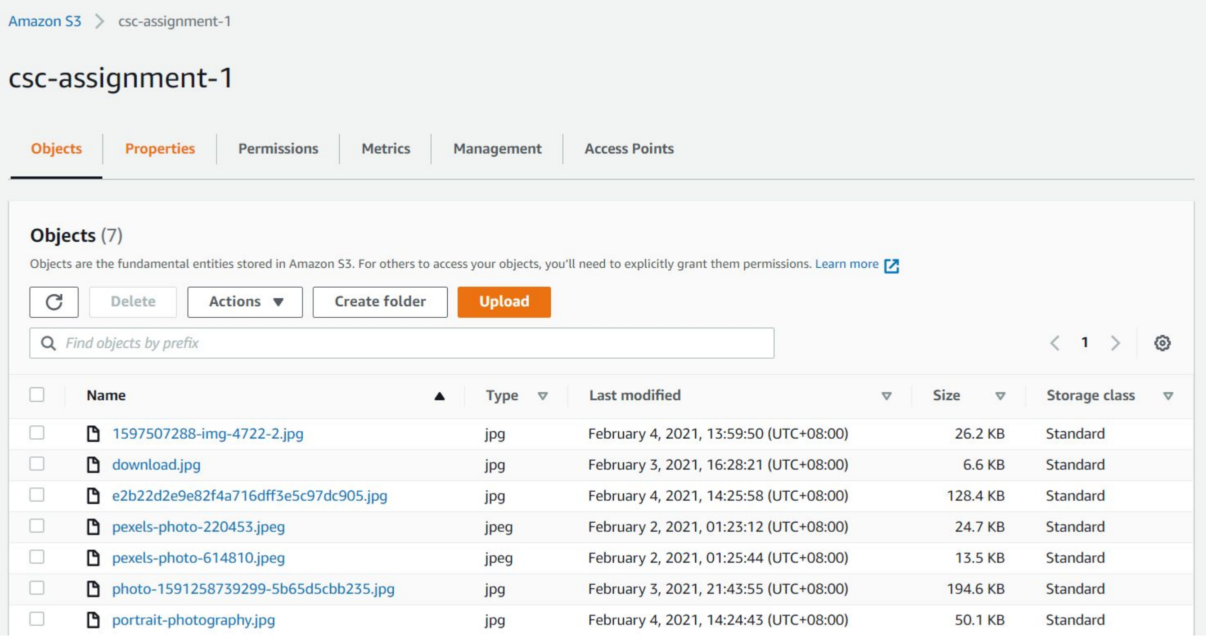
John Doe

Best WWE Wrestler ever omg

5. Upload talent Image

5.1 - S3 Bucket



Amazon S3 > csc-assignment-1

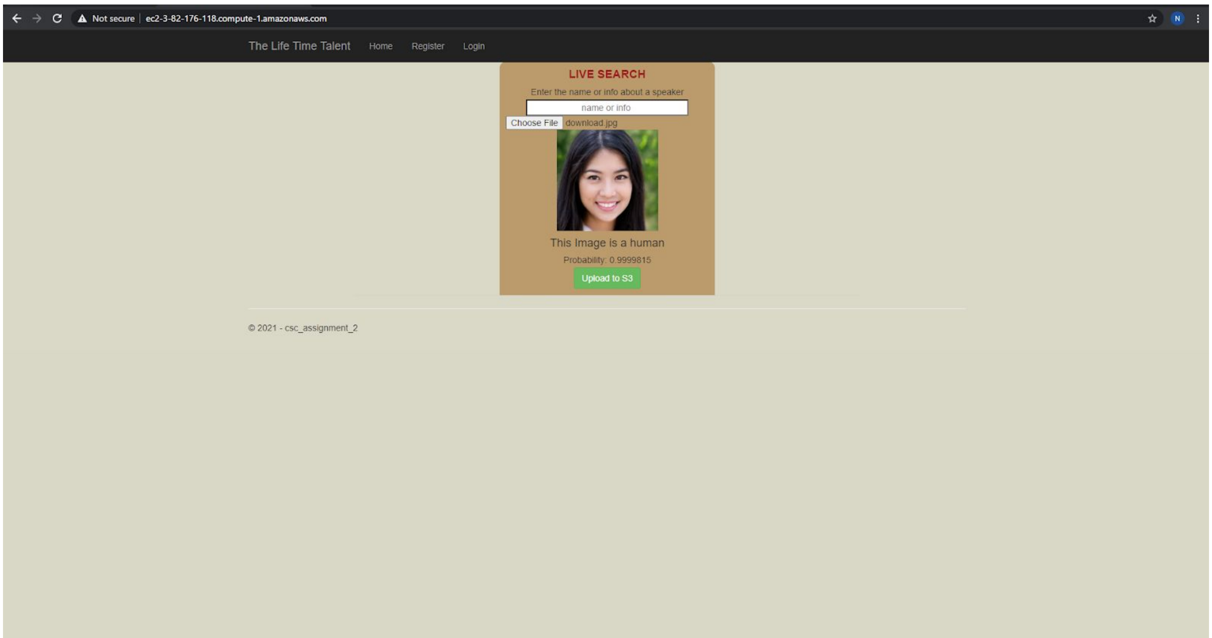
csc-assignment-1

Objects (7)

Objects are the fundamental entities stored in Amazon S3. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

□	Name ▲	Type	Last modified	Size	Storage class
□	1597507288-img-4722-2.jpg	jpg	February 4, 2021, 13:59:50 (UTC+08:00)	26.2 KB	Standard
□	download.jpg	jpg	February 3, 2021, 16:28:21 (UTC+08:00)	6.6 KB	Standard
□	e2b22d2e9e82f4a716dff3e5c97dc905.jpg	jpg	February 4, 2021, 14:25:58 (UTC+08:00)	128.4 KB	Standard
□	pexels-photo-220453.jpeg	jpeg	February 2, 2021, 01:23:12 (UTC+08:00)	24.7 KB	Standard
□	pexels-photo-614810.jpeg	jpeg	February 2, 2021, 01:25:44 (UTC+08:00)	13.5 KB	Standard
□	photo-1591258739299-5b65d5cbb235.jpg	jpg	February 3, 2021, 21:43:55 (UTC+08:00)	194.6 KB	Standard
□	portrait-photography.jpg	jpg	February 4, 2021, 14:24:43 (UTC+08:00)	50.1 KB	Standard

5.2 - Image Recognition



Not secure | ec2-3-82-176-118.compute-1.amazonaws.com

LIVE SEARCH

Enter the name or info about a speaker

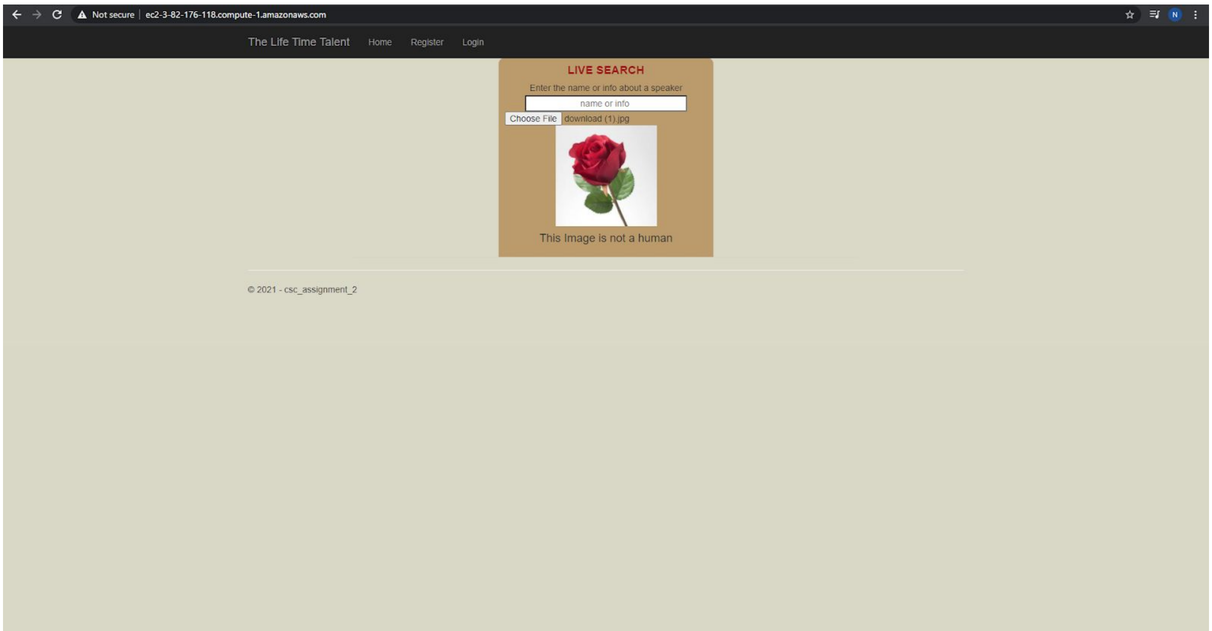
download.jpg

This Image is a human

Probability: 0.9999815

© 2021 - csc_assignment_2

Image 5.2.1 - Human Image



LIVE SEARCH

Enter the name or info about a speaker

name or info

download (1).jpg

This Image is not a human

© 2021 - csc_assignment_2

Image 5.2.2 - Non human image

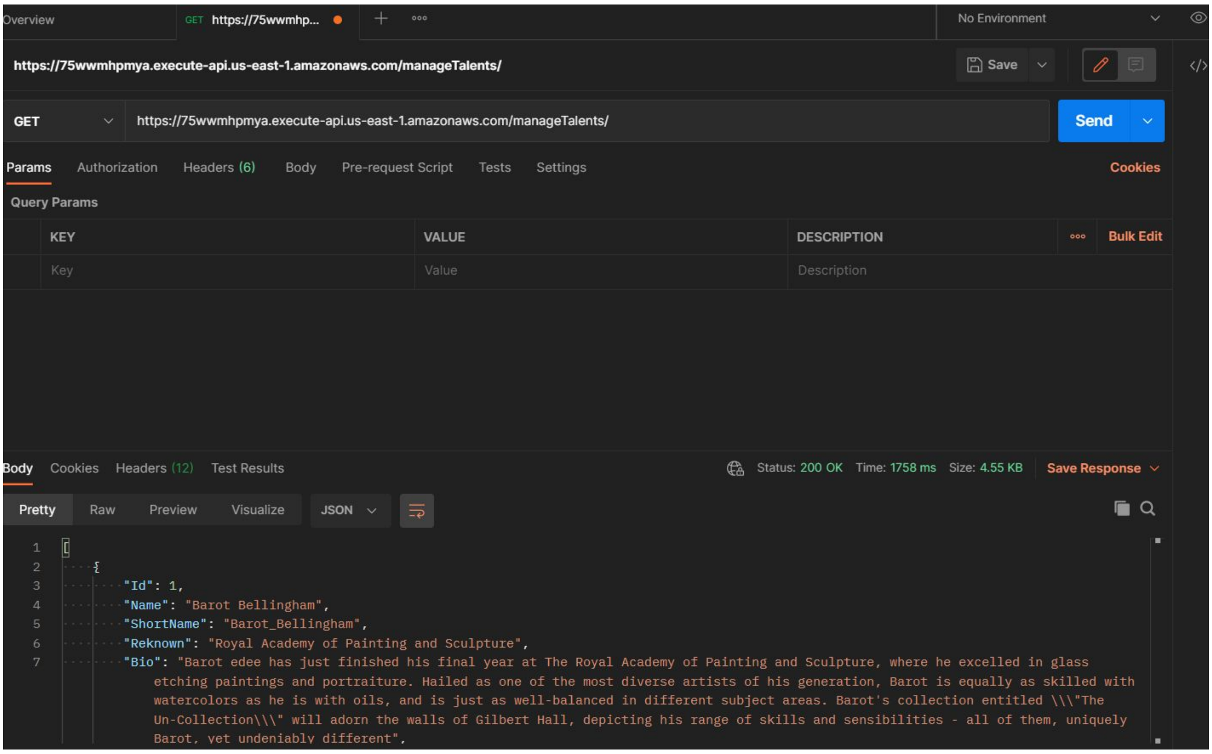
6. Databases

6.1 SQL Database (Amazon RDS)

Used to store Talent data such as Image URL and talent details
Also used to store users that are currently registered into the web application.

API Documentation

1. Get All Talents
   a. Gets all talents
   b. Method: GET
   c. URL: /manageTalents



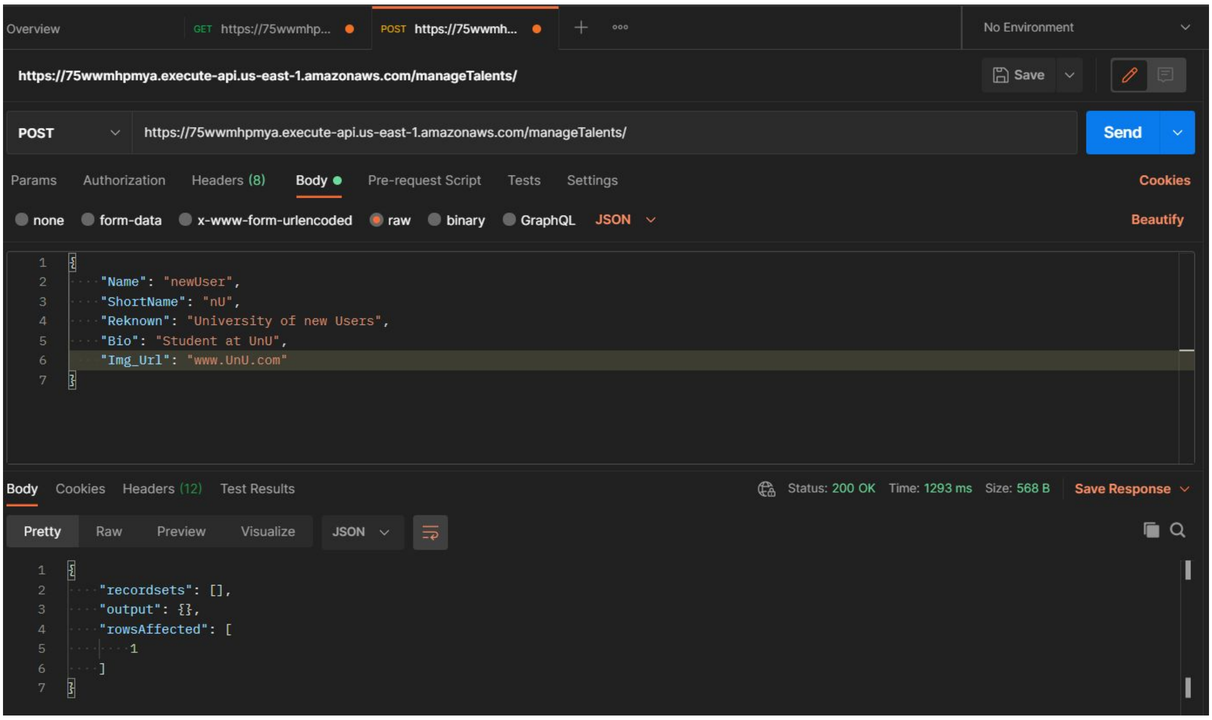
https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

GET https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

Status: 200 OK Time: 1758 ms Size: 4.55 KB

```
[
    {
        "Id": 1,
        "Name": "Barot Bellingham",
        "ShortName": "Barot_Bellingham",
        "Reknown": "Royal Academy of Painting and Sculpture",
        "Bio": "Barot edee has just finished his final year at The Royal Academy of Painting and Sculpture, where he excelled in glass
            etching paintings and portraiture. Hailed as one of the most diverse artists of his generation, Barot is equally as skilled with
            watercolors as he is with oils, and is just as well-balanced in different subject areas. Barot's collection entitled \\\"The
            Un-Collection\\\" will adorn the walls of Gilbert Hall, depicting his range of skills and sensibilities - all of them, uniquely
            Barot, yet undeniably different",
```

2. Create Talent
    a. Creates a new talent
    b. Method: POST
    c. URL: /manageTalents
    d. Params:
        i. Name
        ii. ShortName
        iii. Reknown
        iv. Bio
        v. Img_Url



https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/

POST https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/ Send

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

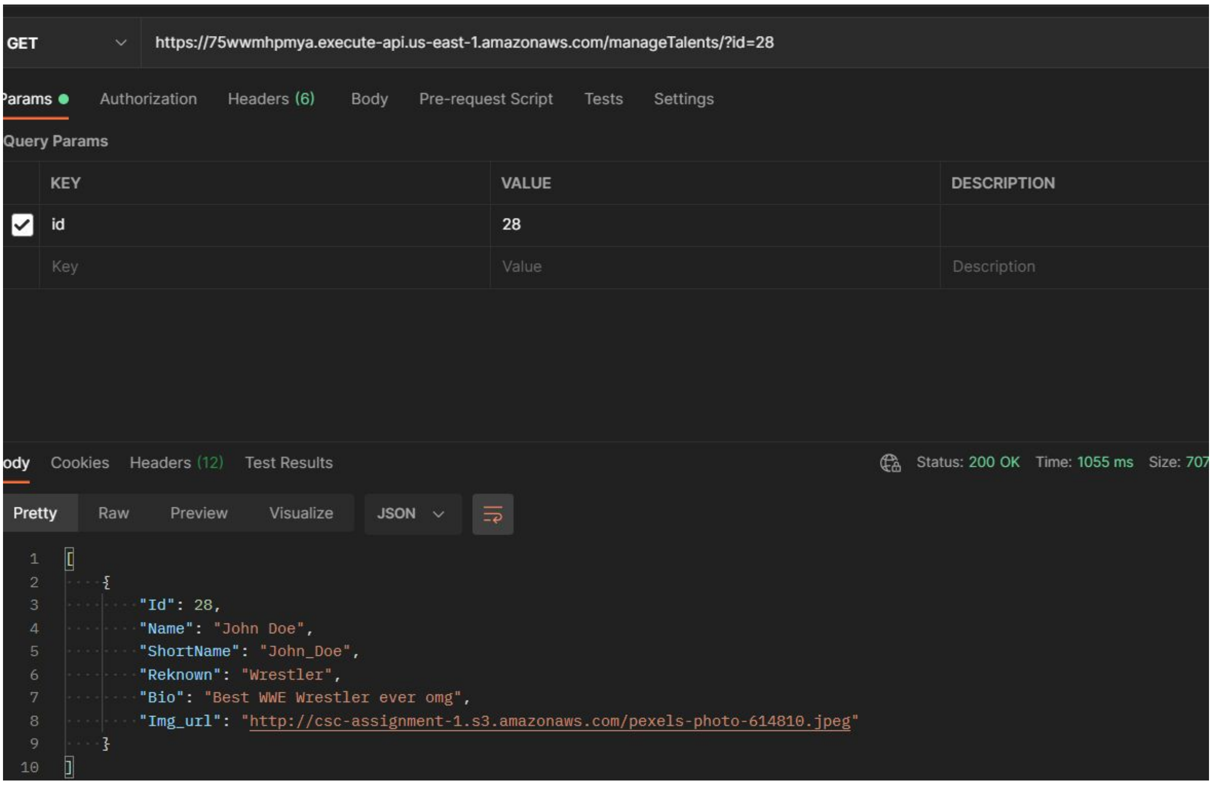
```
{
    "Name": "newUser",
    "ShortName": "nU",
    "Reknown": "University of new Users",
    "Bio": "Student at UnU",
    "Img_Url": "www.UnU.com"
}
```

Body — Status: 200 OK Time: 1293 ms Size: 568 B

JSON

```
{
    "recordsets": [],
    "output": {},
    "rowsAffected": [
        1
    ]
}
```

3. Get Talent
    a. Get an individual talent based on the Talent ID given
    b. Method: GET
    c. URL: /manageTalents/?id={talentId}



GET https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=28

Query Params

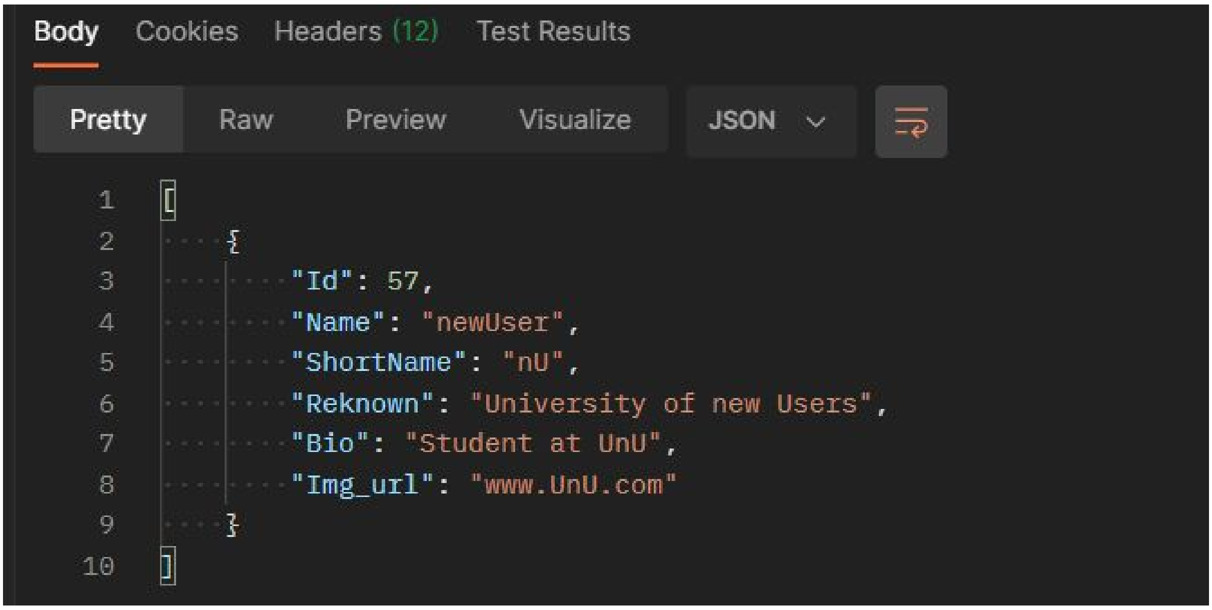
	KEY	VALUE	DESCRIPTION
☑	id	28	
	Key	Value	Description

Status: 200 OK Time: 1055 ms Size: 707

JSON

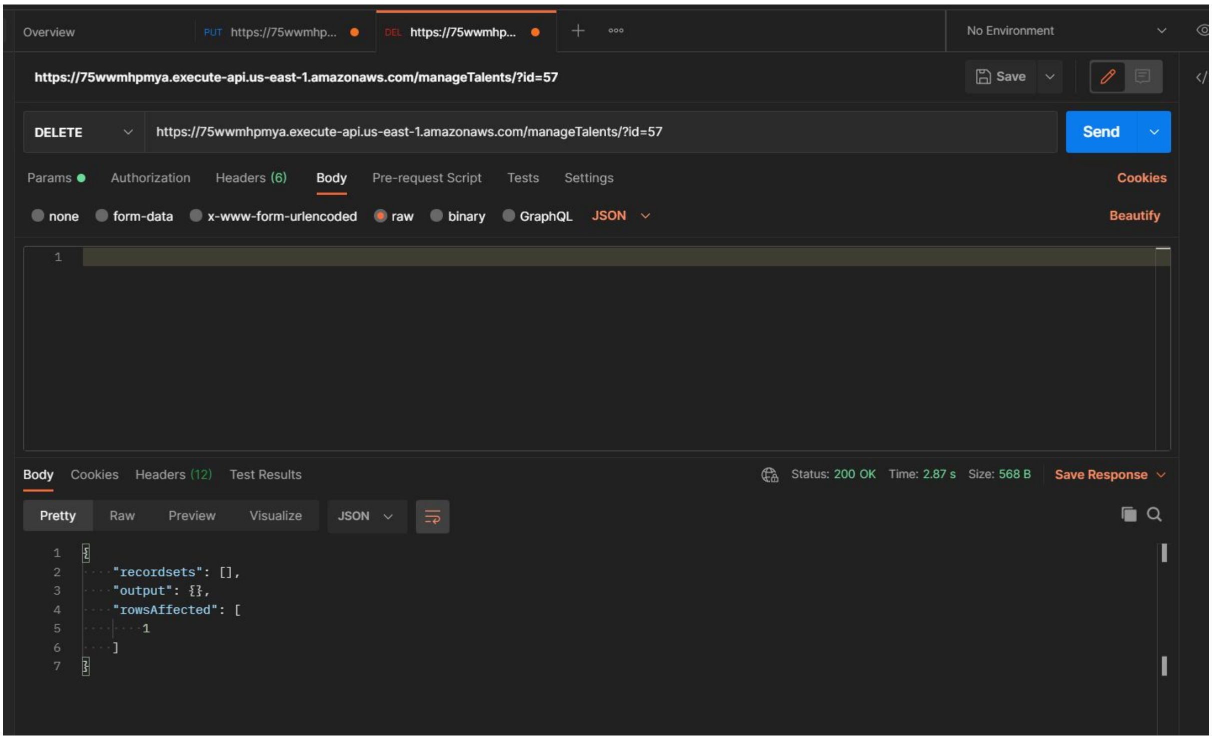
```
[
    {
        "Id": 28,
        "Name": "John Doe",
        "ShortName": "John_Doe",
        "Reknown": "Wrestler",
        "Bio": "Best WWE Wrestler ever omg",
        "Img_url": "http://csc-assignment-1.s3.amazonaws.com/pexels-photo-614810.jpeg"
    }
]
```

4. Edit Talent
    a. Edits an existing talent in the database
    b. Method: PUT
    c. URL:/manageTalents/?id={talentId}
    d. Params:
        i. Name
        ii. ShortName
        iii. Reknown
        iv. Bio
        v. Img_Url



```
[
    {
        "Id": 57,
        "Name": "newUser",
        "ShortName": "nU",
        "Reknown": "University of new Users",
        "Bio": "Student at UnU",
        "Img_url": "www.UnU.com"
    }
]
```

5. Delete Talent
    a. Deletes an existing talent in the database
    b. Method: DELETE
    c. URL: /manageTalents/?id={talentId}



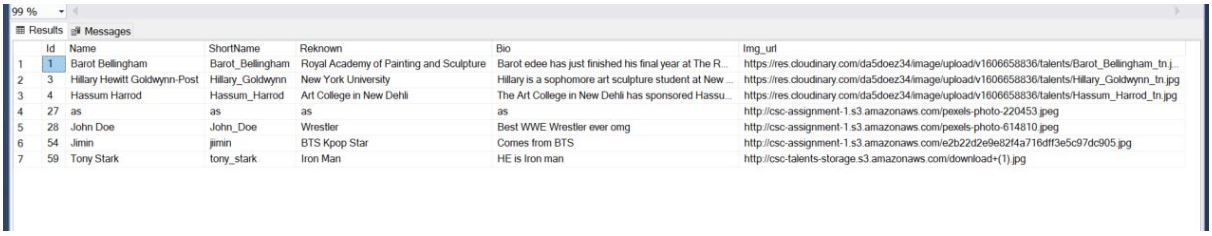
https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

DELETE https://75wwmhpmya.execute-api.us-east-1.amazonaws.com/manageTalents/?id=57

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

Status: 200 OK Time: 2.87 s Size: 568 B

```
{
    "recordsets": [],
    "output": {},
    "rowsAffected": [
        1
    ]
}
```

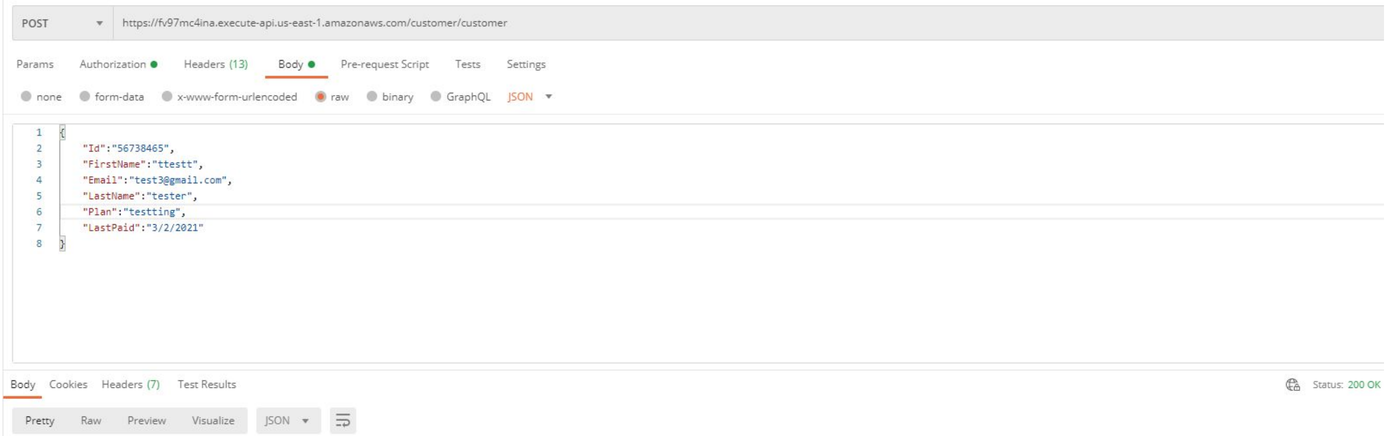


	Id	Name	ShortName	Reknown	Bio	Img_url
1	1	Barot Bellingham	Barot_Bellingham	Royal Academy of Painting and Sculpture	Barot edee has just finished his final year at The R...	https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Barot_Bellingham_tn.j...
2	3	Hillary Hewitt Goldwynn-Post	Hillary_Goldwynn	New York University	Hillary is a sophomore art sculpture student at New ...	https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Hillary_Goldwynn_tn.jpg
3	4	Hassum Harrod	Hassum_Harrod	Art College in New Dehli	The Art College in New Dehli has sponsored Hassu...	https://res.cloudinary.com/da5doez34/image/upload/v1606658836/talents/Hassum_Harrod_tn.jpg
4	27	as	as	as	as	http://csc-assignment-1.s3.amazonaws.com/pexels-photo-220453.jpeg
5	28	John Doe	John_Doe	Wrestler	Best WWE Wrestler ever omg	http://csc-assignment-1.s3.amazonaws.com/pexels-photo-614810.jpeg
6	54	Jimin	jiimin	BTS Kpop Star	Comes from BTS	http://csc-assignment-1.s3.amazonaws.com/e2b22d2e9e82f4a716dff3e5c97dc905.jpg
7	59	Tony Stark	tony_stark	Iron Man	HE is Iron man	http://csc-talents-storage.s3.amazonaws.com/download+(1).jpg

6.2 NoSQL Database(Amazon DynamoDB)

Use to store User data such as subscription plan, last paid and/or session data
API Documentation

1. Add User
    a. Add a user into database
    b. METHOD: POST
    c. URL: /customer/customer
    d. Parameters
        i. “Id”
        ii. “Email”
        iii. “FirstName”
        iv. “LastName”
        v. “LastPaid”
        vi. “Plan”



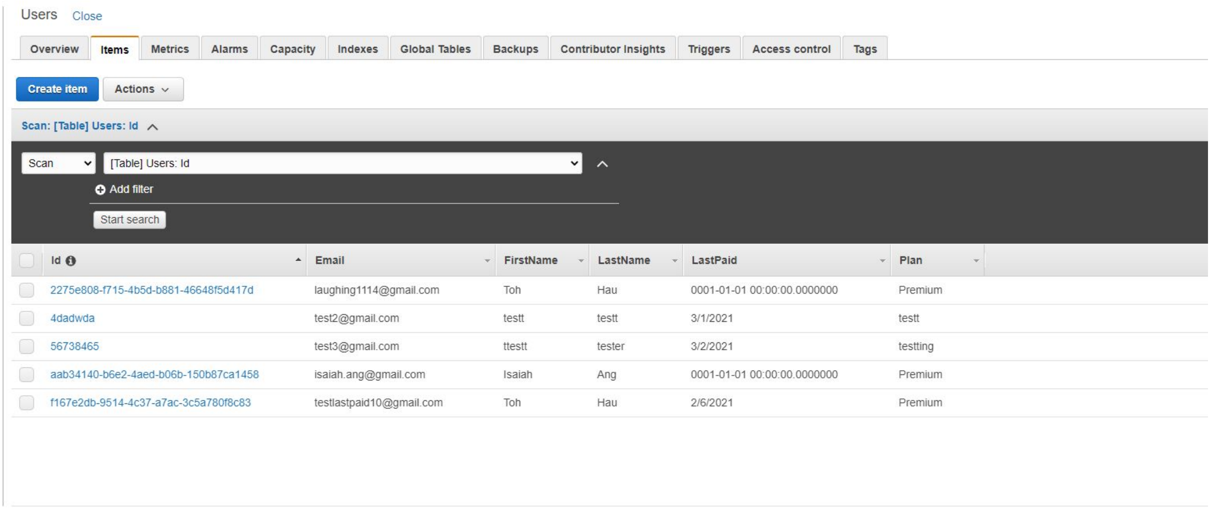
POST https://fv97mc4ina.execute-api.us-east-1.amazonaws.com/customer/customer

Params
Authorization
Headers (13)
Body
Pre-request Script
Tests
Settings
○ none ○ form-data ○ x-www-form-urlencoded ● raw ○ binary ○ GraphQL JSON

```
{
    "Id":"56738465",
    "FirstName":"ttestt",
    "Email":"test3@gmail.com",
    "LastName":"tester",
    "Plan":"testting",
    "LastPaid":"3/2/2021"
}
```

Body Cookies Headers (7) Test Results
Pretty Raw Preview Visualize JSON

Status: 200 OK

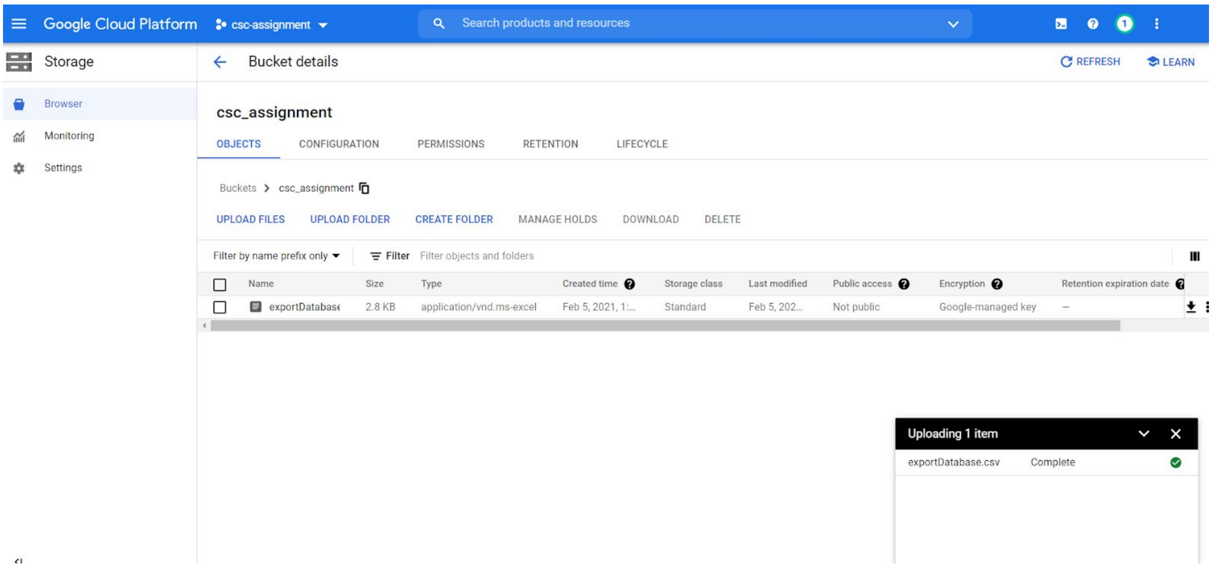


Users Close
Overview Items Metrics Alarms Capacity Indexes Global Tables Backups Contributor Insights Triggers Access control Tags
Create item
Actions
Scan: [Table] Users: Id
Scan
[Table] Users: Id
Add filter
Start search

Id	Email	FirstName	LastName	LastPaid	Plan
2275e808-f715-4b5d-b881-46648f5d417d	laughing1114@gmail.com	Toh	Hau	0001-01-01 00:00:00.0000000	Premium
4dadwda	test2@gmail.com	testt	testt	3/1/2021	testt
56738465	test3@gmail.com	ttestt	tester	3/2/2021	testing
aab34140-b6e2-4aed-b06b-150b87ca1458	isaiah.ang@gmail.com	Isaiah	Ang	0001-01-01 00:00:00.0000000	Premium
f167e2db-9514-4c37-a7ac-3c5a780f8c83	testlastpaid10@gmail.com	Toh	Hau	2/6/2021	Premium

6.3 Data Lifecycle Management

Uploading the csv file to Google Cloud Storage



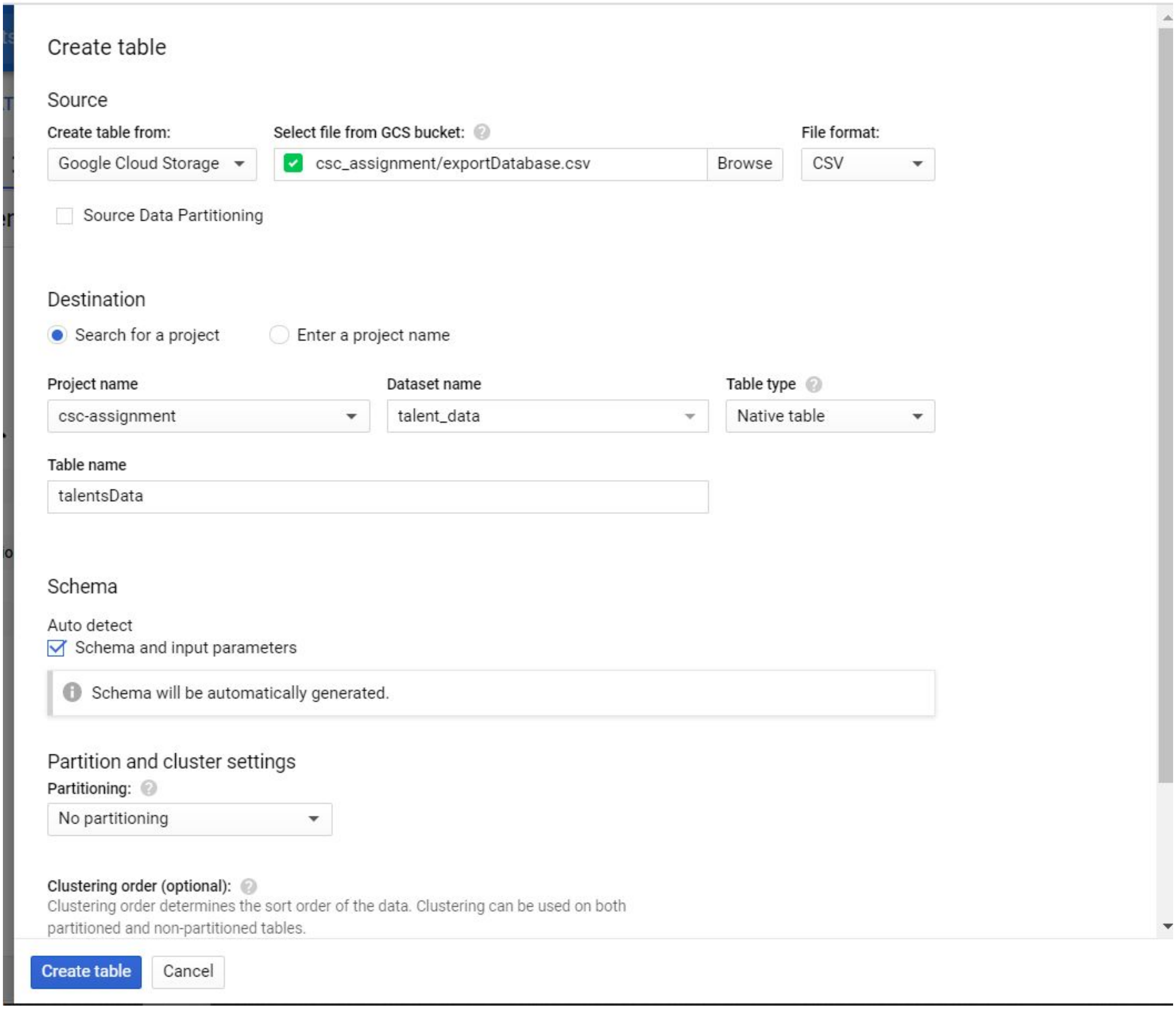
Google Cloud Platform
csc-assignment
Search products and resources
Storage
Browser
Monitoring
Settings
Bucket details
REFRESH
LEARN
csc_assignment
OBJECTS CONFIGURATION PERMISSIONS RETENTION LIFECYCLE
Buckets > csc_assignment
UPLOAD FILES UPLOAD FOLDER CREATE FOLDER MANAGE HOLDS DOWNLOAD DELETE
Filter by name prefix only
Filter Filter objects and folders

□	Name	Size	Type	Created time	Storage class	Last modified	Public access	Encryption	Retention expiration date
□	exportDatabase	2.8 KB	application/vnd.ms-excel	Feb 5, 2021, 1:...	Standard	Feb 5, 202...	Not public	Google-managed key	–

Uploading 1 item

exportDatabase.csv Complete ✓

Image 6.3.1 - Creating a table using the data from the csv file stored in Google Cloud Storage



Create table

Source

Create table from: Google Cloud Storage

Select file from GCS bucket: ☑ csc_assignment/exportDatabase.csv

File format: CSV

□ Source Data Partitioning

Destination

● Search for a project ○ Enter a project name

Project name: csc-assignment

Dataset name: talent_data

Table type: Native table

Table name: talentsData

Schema

Auto detect

☑ Schema and input parameters

Schema will be automatically generated.

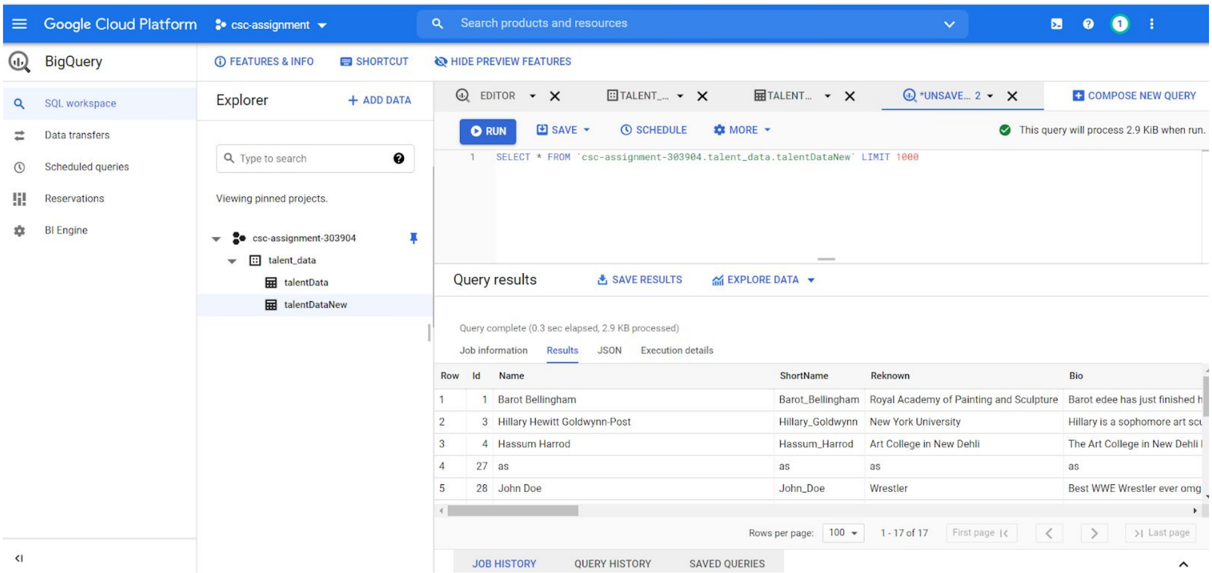
Partition and cluster settings

Partitioning: No partitioning

Clustering order (optional):

Clustering order determines the sort order of the data. Clustering can be used on both partitioned and non-partitioned tables.

Image 6.3.2 - Retrieving Data from the table using bigquery and SQL



This query will process 2.9 KiB when run.

```
SELECT * FROM `csc-assignment-303904.talent_data.talentDataNew` LIMIT 1000
```

Query results

Query complete (0.3 sec elapsed, 2.9 KB processed)

Row	Id	Name	ShortName	Reknown	Bio
1	1	Barot Bellingham	Barot_Bellingham	Royal Academy of Painting and Sculpture	Barot edee has just finished h
2	3	Hillary Hewitt Goldwynn-Post	Hillary_Goldwynn	New York University	Hillary is a sophomore art scu
3	4	Hassum Harrod	Hassum_Harrod	Art College in New Dehli	The Art College in New Dehli I
4	27	as	as	as	as
5	28	John Doe	John_Doe	Wrestler	Best WWE Wrestler ever omg

Rows per page: 100 1 - 17 of 17 First page Last page

7. Additional Features

7.1 Business Impact

a. Security
   - Amazon Cognito is meant for authenticating a user in order to gain access to the Saas Application.

b. Reliability
   - As Cognito is a part of Amazon services, developers are also able to make use of other amazon web services alongside Cognito.

c. Availability
   - Amazon Cognito enables us to synchronize data across a user's devices so that their experience will not be affected even when they switch between devices or to a new device. With Amazon Cognito, our app can also save data locally on user's devices, as such, users are able to use the application even when the devices are offline and synchronize the data when the device is back online.

d. Cost
   - Using Amazon Cognito, as more and more users start to sign up and create accounts, a larger instance for the user pools will be needed to accommodate for the influx of users that register and log in through Cognito. It does not cost a lot for the business as each user registered only costs a few cents.

e. Performance
   - With Amazon Cognito, we are able to easily add user-sign up and authentication to our applications and it works with external identity providers supporting SAML or OpenID Connect and other social identity providers.

7.2 Cloud Services Used

a. Cognito

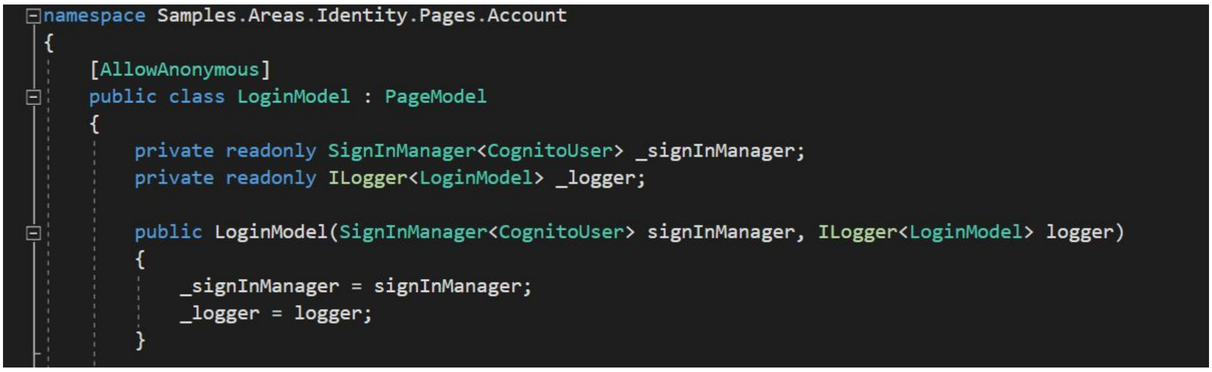
7.3 Describe how you used it in the application

Amazon Cognito allows for users to log into the application using accounts in Amazon. When users are logged in through Cognito, they will be allowed to make use of the Amazon services such as view S3 buckets.

Cognito also makes use of user pools which the application connects to. Users are able to register and login through this service.

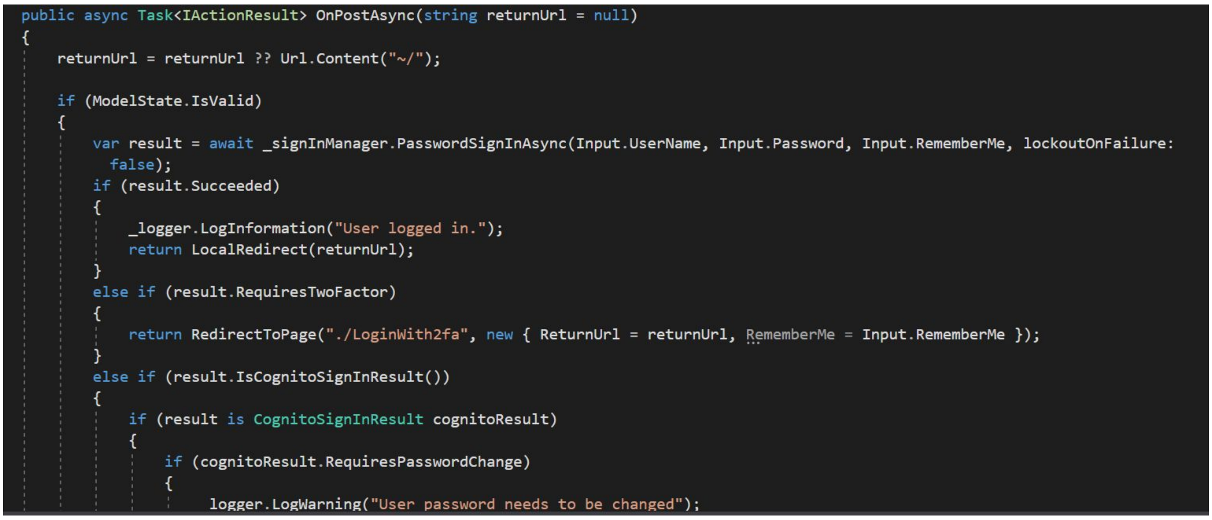
7.4 Sample Code Snippet

Login



```
namespace Samples.Areas.Identity.Pages.Account
{
    [AllowAnonymous]
    public class LoginModel : PageModel
    {
        private readonly SignInManager<CognitoUser> _signInManager;
        private readonly ILogger<LoginModel> _logger;

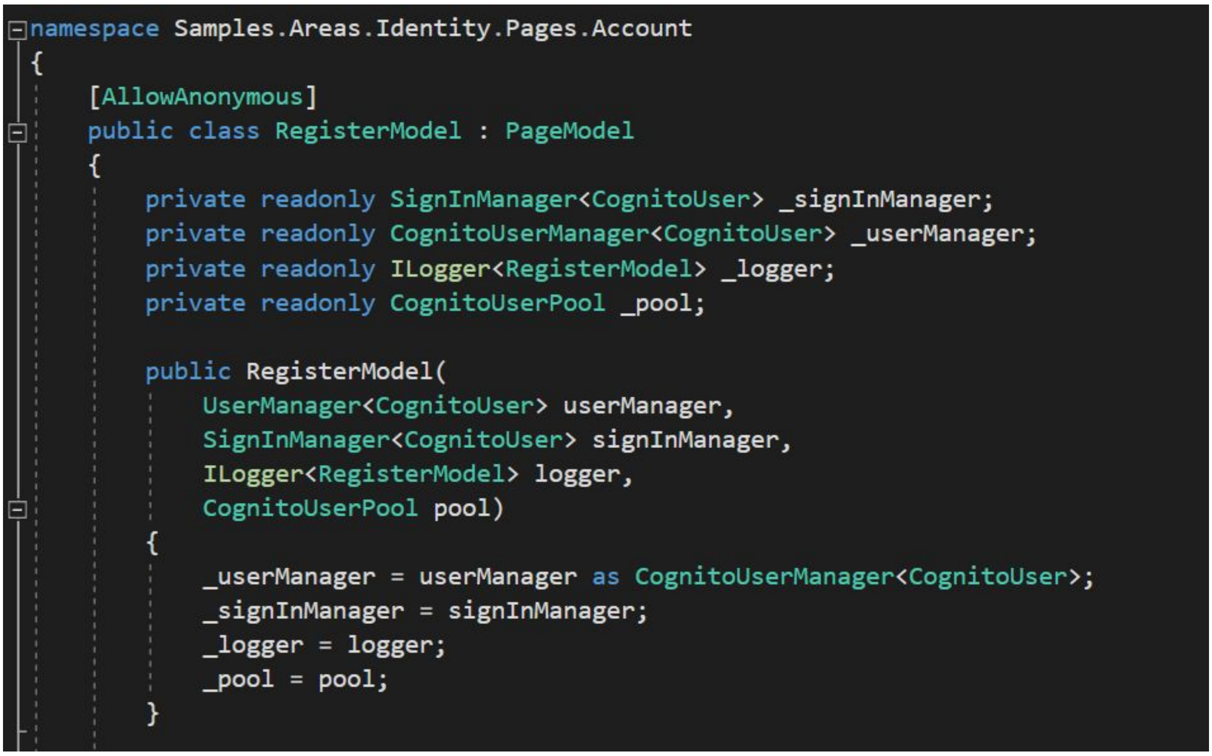
        public LoginModel(SignInManager<CognitoUser> signInManager, ILogger<LoginModel> logger)
        {
            _signInManager = signInManager;
            _logger = logger;
        }
```



```
public async Task<IActionResult> OnPostAsync(string returnUrl = null)
{
    returnUrl = returnUrl ?? Url.Content("~/");

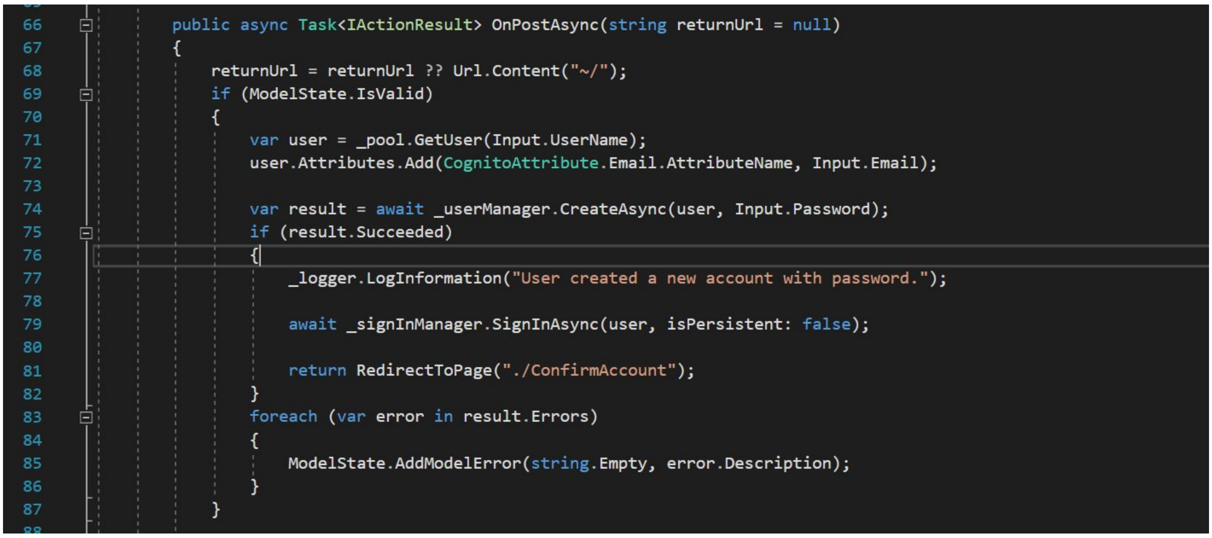
    if (ModelState.IsValid)
    {
        var result = await _signInManager.PasswordSignInAsync(Input.UserName, Input.Password, Input.RememberMe, lockoutOnFailure:
          false);
        if (result.Succeeded)
        {
            _logger.LogInformation("User logged in.");
            return LocalRedirect(returnUrl);
        }
        else if (result.RequiresTwoFactor)
        {
            return RedirectToPage("./LoginWith2fa", new { ReturnUrl = returnUrl, RememberMe = Input.RememberMe });
        }
        else if (result.IsCognitoSignInResult())
        {
            if (result is CognitoSignInResult cognitoResult)
            {
                if (cognitoResult.RequiresPasswordChange)
                {
                    logger.LogWarning("User password needs to be changed");
```

Register



```
namespace Samples.Areas.Identity.Pages.Account
{
    [AllowAnonymous]
    public class RegisterModel : PageModel
    {
        private readonly SignInManager<CognitoUser> _signInManager;
        private readonly CognitoUserManager<CognitoUser> _userManager;
        private readonly ILogger<RegisterModel> _logger;
        private readonly CognitoUserPool _pool;

        public RegisterModel(
            UserManager<CognitoUser> userManager,
            SignInManager<CognitoUser> signInManager,
            ILogger<RegisterModel> logger,
            CognitoUserPool pool)
        {
            _userManager = userManager as CognitoUserManager<CognitoUser>;
            _signInManager = signInManager;
            _logger = logger;
            _pool = pool;
        }
```



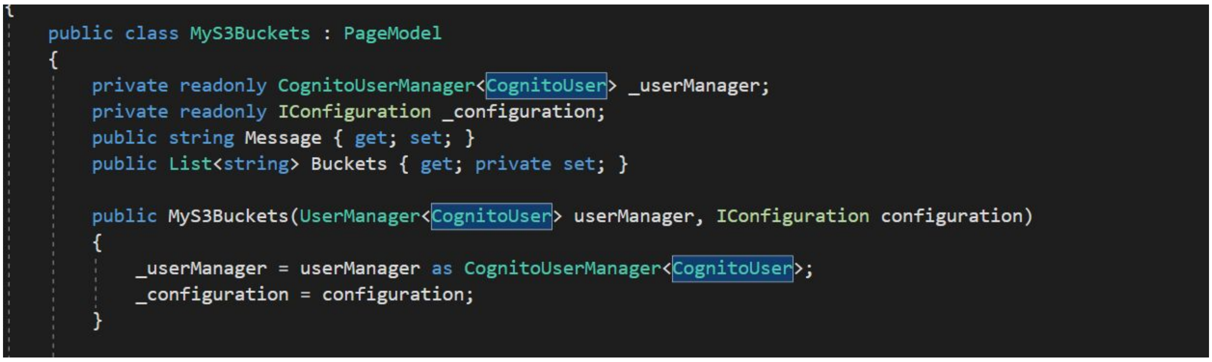
```
        public async Task<IActionResult> OnPostAsync(string returnUrl = null)
        {
            returnUrl = returnUrl ?? Url.Content("~/");
            if (ModelState.IsValid)
            {
                var user = _pool.GetUser(Input.UserName);
                user.Attributes.Add(CognitoAttribute.Email.AttributeName, Input.Email);

                var result = await _userManager.CreateAsync(user, Input.Password);
                if (result.Succeeded)
                {
                    _logger.LogInformation("User created a new account with password.");

                    await _signInManager.SignInAsync(user, isPersistent: false);

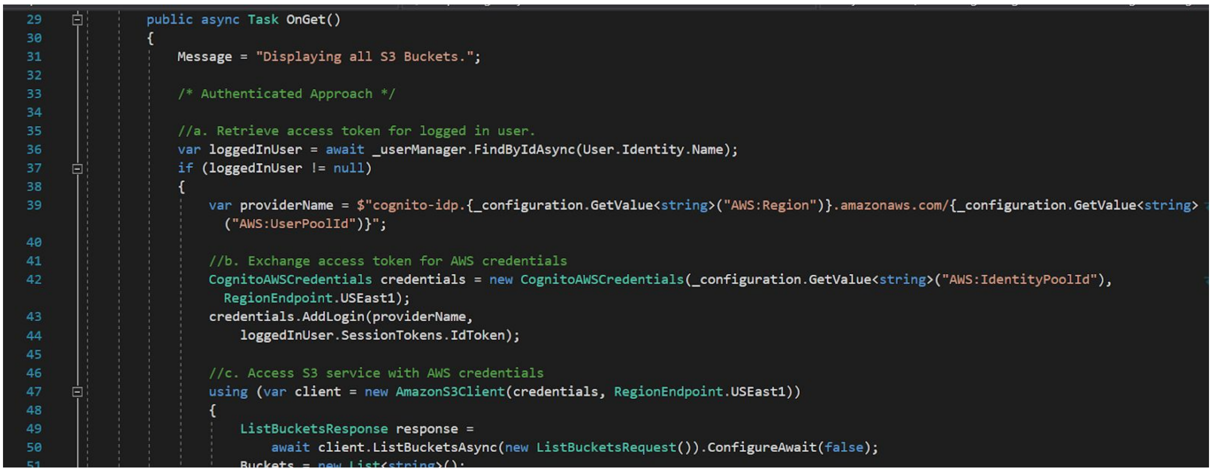
                    return RedirectToPage("./ConfirmAccount");
                }
                foreach (var error in result.Errors)
                {
                    ModelState.AddModelError(string.Empty, error.Description);
                }
            }
```

Display S3 Buckets (Requires Cognito authentication to access)



```
{
    public class MyS3Buckets : PageModel
    {
        private readonly CognitoUserManager<CognitoUser> _userManager;
        private readonly IConfiguration _configuration;
        public string Message { get; set; }
        public List<string> Buckets { get; private set; }

        public MyS3Buckets(UserManager<CognitoUser> userManager, IConfiguration configuration)
        {
            _userManager = userManager as CognitoUserManager<CognitoUser>;
            _configuration = configuration;
        }
```



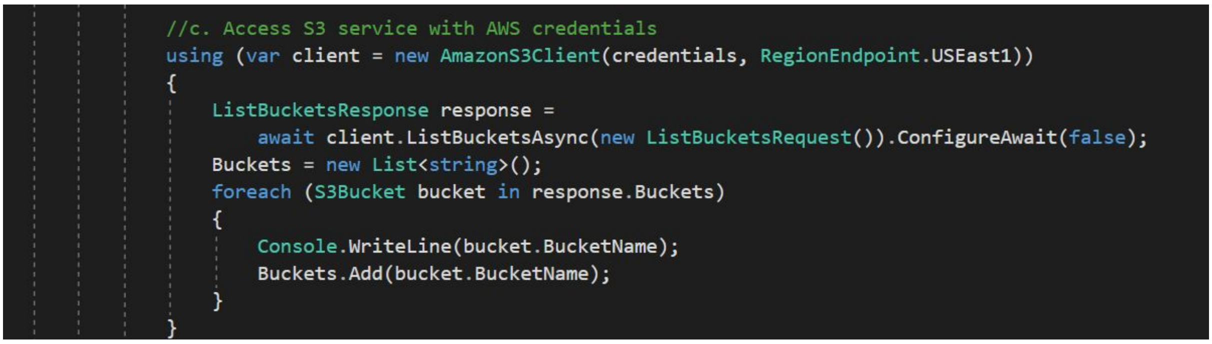
```
        public async Task OnGet()
        {
            Message = "Displaying all S3 Buckets.";

            /* Authenticated Approach */

            //a. Retrieve access token for logged in user.
            var loggedInUser = await _userManager.FindByIdAsync(User.Identity.Name);
            if (loggedInUser != null)
            {
                var providerName = $"cognito-idp.{_configuration.GetValue<string>("AWS:Region")}.amazonaws.com/{_configuration.GetValue<string>
                  ("AWS:UserPoolId")}";

                //b. Exchange access token for AWS credentials
                CognitoAWSCredentials credentials = new CognitoAWSCredentials(_configuration.GetValue<string>("AWS:IdentityPoolId"),
                  RegionEndpoint.USEast1);
                credentials.AddLogin(providerName,
                    loggedInUser.SessionTokens.IdToken);

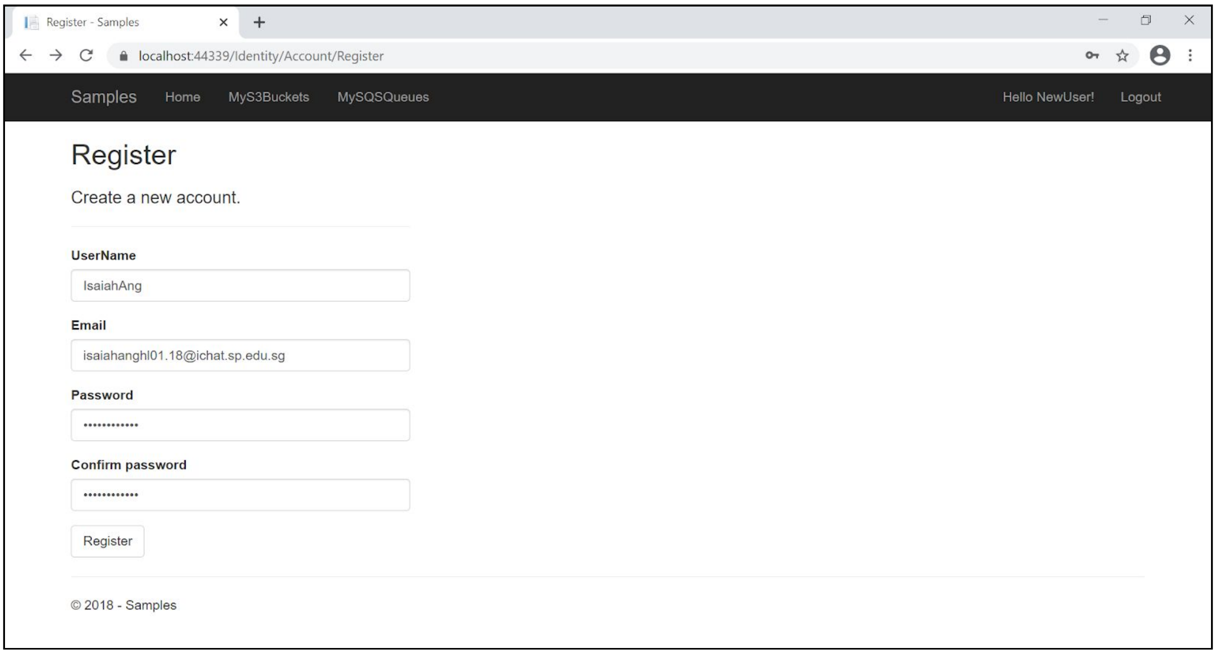
                //c. Access S3 service with AWS credentials
                using (var client = new AmazonS3Client(credentials, RegionEndpoint.USEast1))
                {
                    ListBucketsResponse response =
                        await client.ListBucketsAsync(new ListBucketsRequest()).ConfigureAwait(false);
                    Buckets = new List<string>();
```



```
                //c. Access S3 service with AWS credentials
                using (var client = new AmazonS3Client(credentials, RegionEndpoint.USEast1))
                {
                    ListBucketsResponse response =
                        await client.ListBucketsAsync(new ListBucketsRequest()).ConfigureAwait(false);
                    Buckets = new List<string>();
                    foreach (S3Bucket bucket in response.Buckets)
                    {
                        Console.WriteLine(bucket.BucketName);
                        Buckets.Add(bucket.BucketName);
                    }
                }
```

7.5 Testing Result

Register



Register

Create a new account.

UserName

IsaiahAng

Email

isaiahanghl01.18@ichat.sp.edu.sg

Password

••••••••••••

Confirm password

••••••••••••

Register

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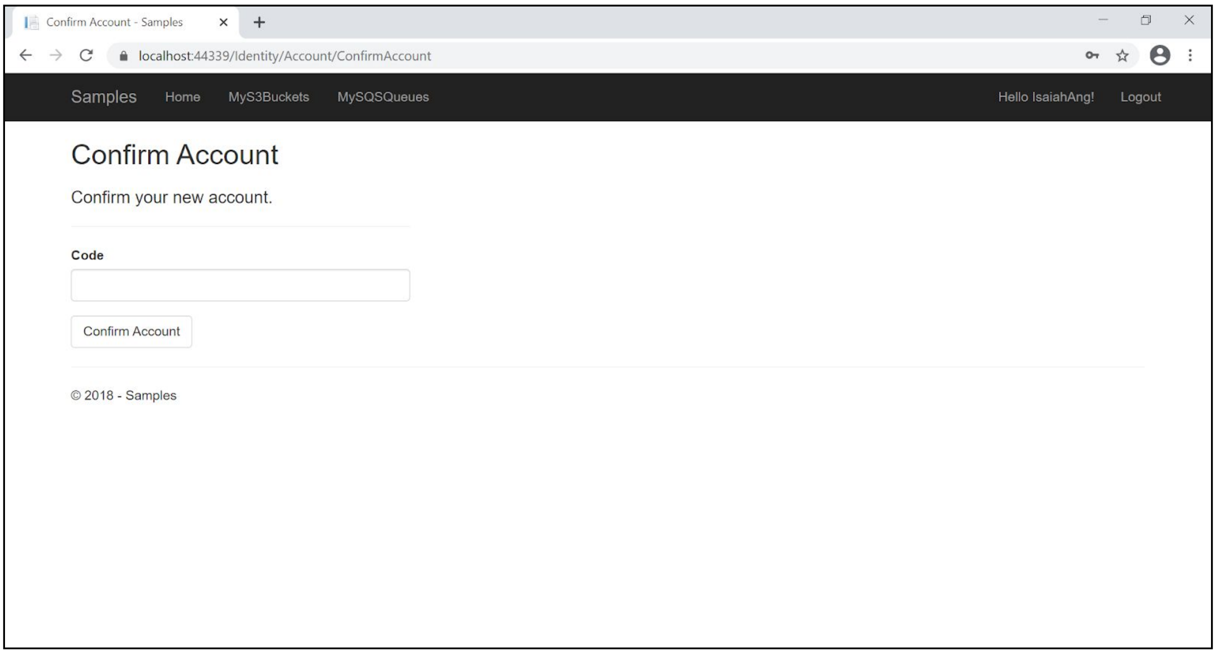
Users can register a new account into the Cognito user pool. When the user registers a new account, Cognito will send a code to the email that they have input in the register form. They will then be required to input the code into the next page to confirm their account.

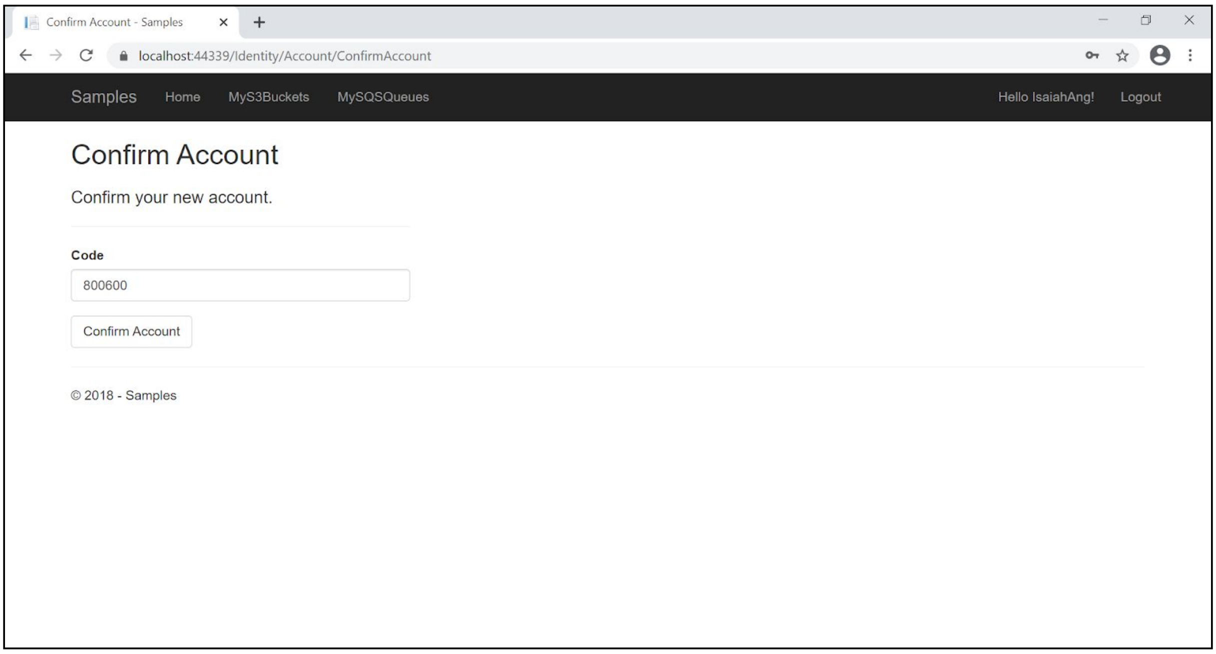

Confirm Account - Samples
localhost:44339/Identity/Account/ConfirmAccount
Samples
Home
MyS3Buckets
MySQSQueues
Hello IsaiahAng!
Logout

Confirm Account

Confirm your new account.

Code

© 2018 - Samples


Confirm Account - Samples
localhost:44339/Identity/Account/ConfirmAccount
Samples
Home
MyS3Buckets
MySQSQueues
Hello IsaiahAng!
Logout

Confirm Account

Confirm your new account.

Code

800600

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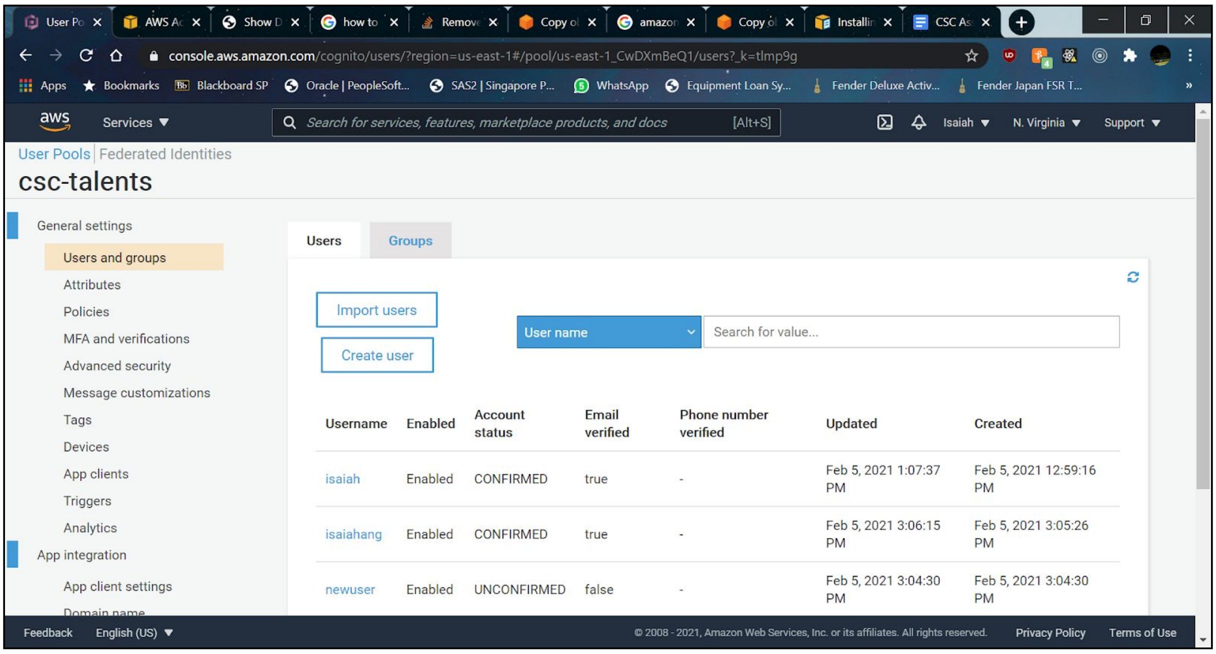
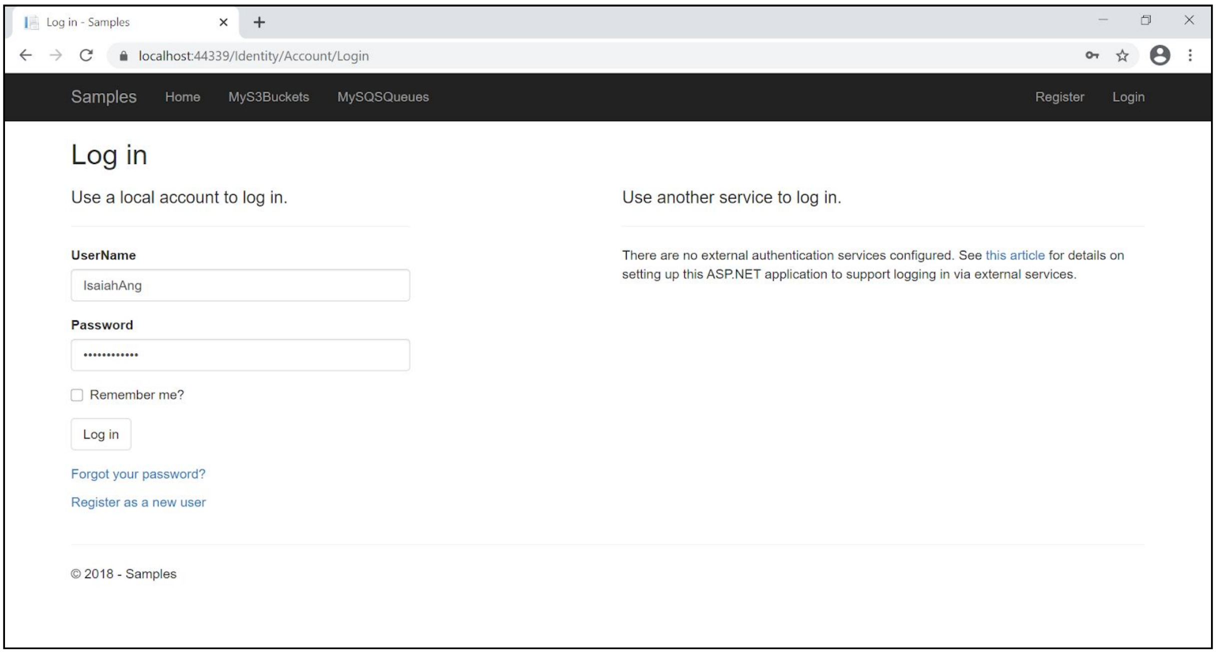


csc-talents

Username	Enabled	Account status	Email verified	Phone number verified	Updated	Created
isaiah	Enabled	CONFIRMED	true	-	Feb 5, 2021 1:07:37 PM	Feb 5, 2021 12:59:16 PM
isaiahang	Enabled	CONFIRMED	true	-	Feb 5, 2021 3:06:15 PM	Feb 5, 2021 3:05:26 PM
newuser	Enabled	UNCONFIRMED	false	-	Feb 5, 2021 3:04:30 PM	Feb 5, 2021 3:04:30 PM

After a user creates an account, the new account will be displayed in the User pool in the AWS Console.

Login



Log in

Use a local account to log in.

UserName

IsaiahAng

Password

••••••••••••

□ Remember me?

Log in

Forgot your password?

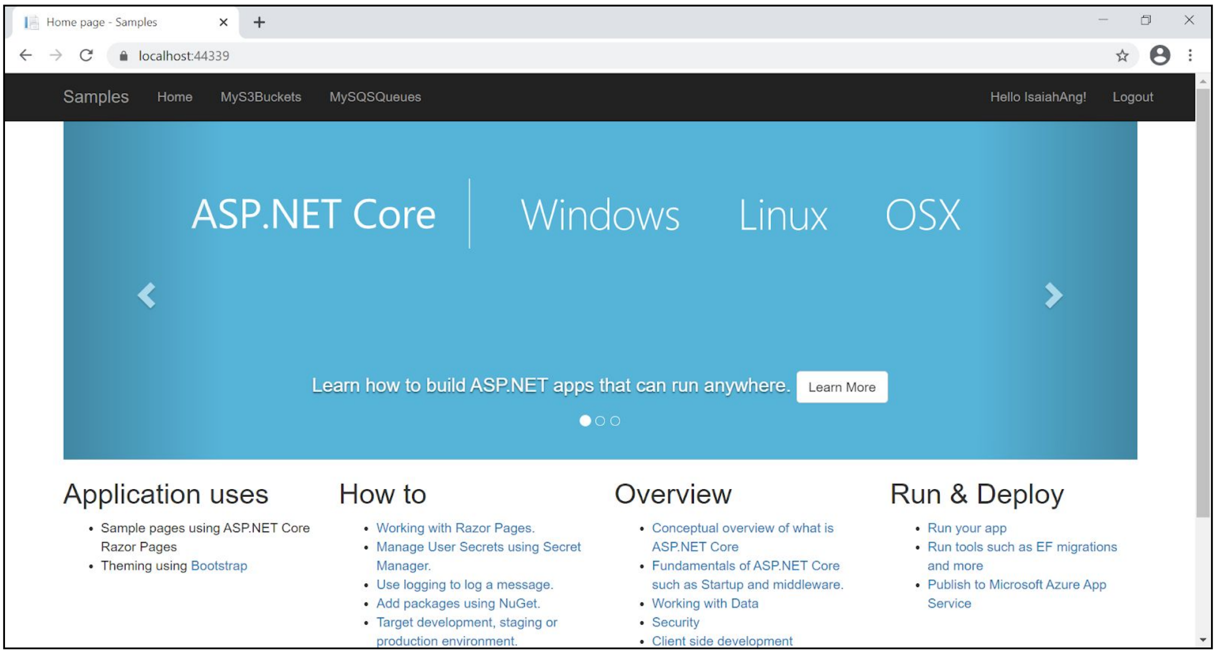
Register as a new user

Use another service to log in.

There are no external authentication services configured. See this article for details on setting up this ASP.NET application to support logging in via external services.

© 2018 - Samples

After the user registers a new account, they then will be able to log into their account.



Learn how to build ASP.NET apps that can run anywhere.

Application uses

- Sample pages using ASP.NET Core Razor Pages
- Theming using Bootstrap

How to

- Working with Razor Pages.
- Manage User Secrets using Secret Manager.
- Use logging to log a message.
- Add packages using NuGet.
- Target development, staging or production environment.

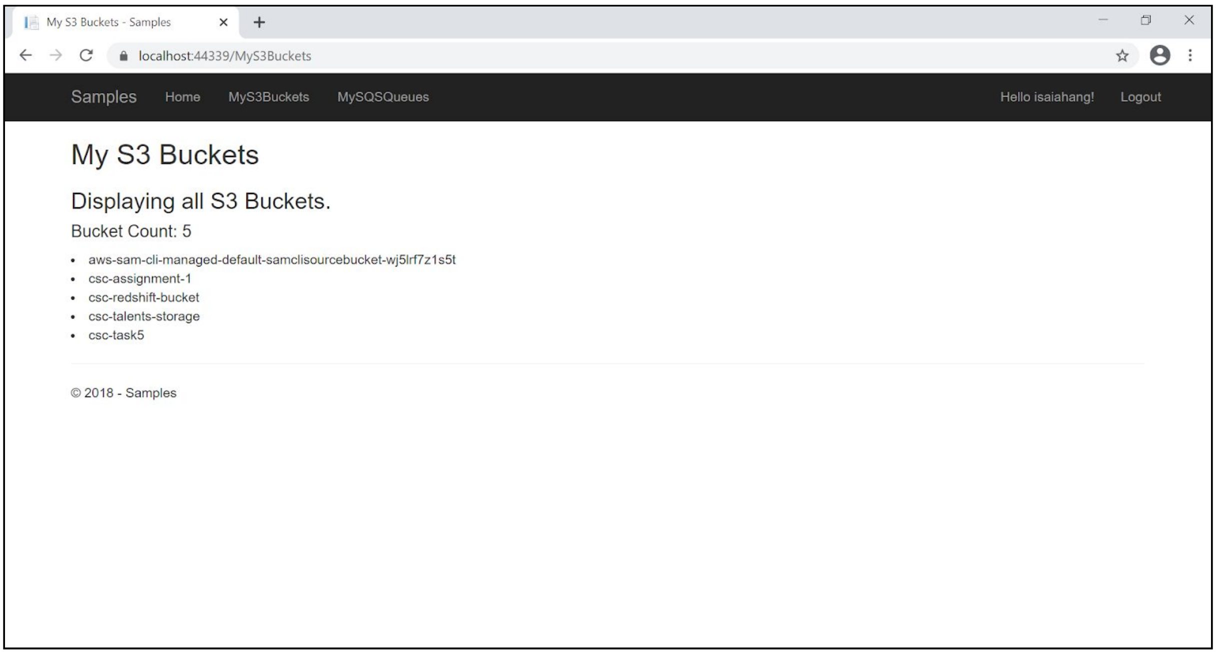
Overview

- Conceptual overview of what is ASP.NET Core
- Fundamentals of ASP.NET Core such as Startup and middleware.
- Working with Data
- Security
- Client side development

Run & Deploy

- Run your app
- Run tools such as EF migrations and more
- Publish to Microsoft Azure App Service

After logging in, their username will be displayed on the right side of the nav bar. They will then be able to access AWS services such as S3 Buckets.



My S3 Buckets

Displaying all S3 Buckets.

Bucket Count: 5

- aws-sam-cli-managed-default-samclisourcebucket-wj5lrf7z1s5t
- csc-assignment-1
- csc-redshift-bucket
- csc-talents-storage
- csc-task5

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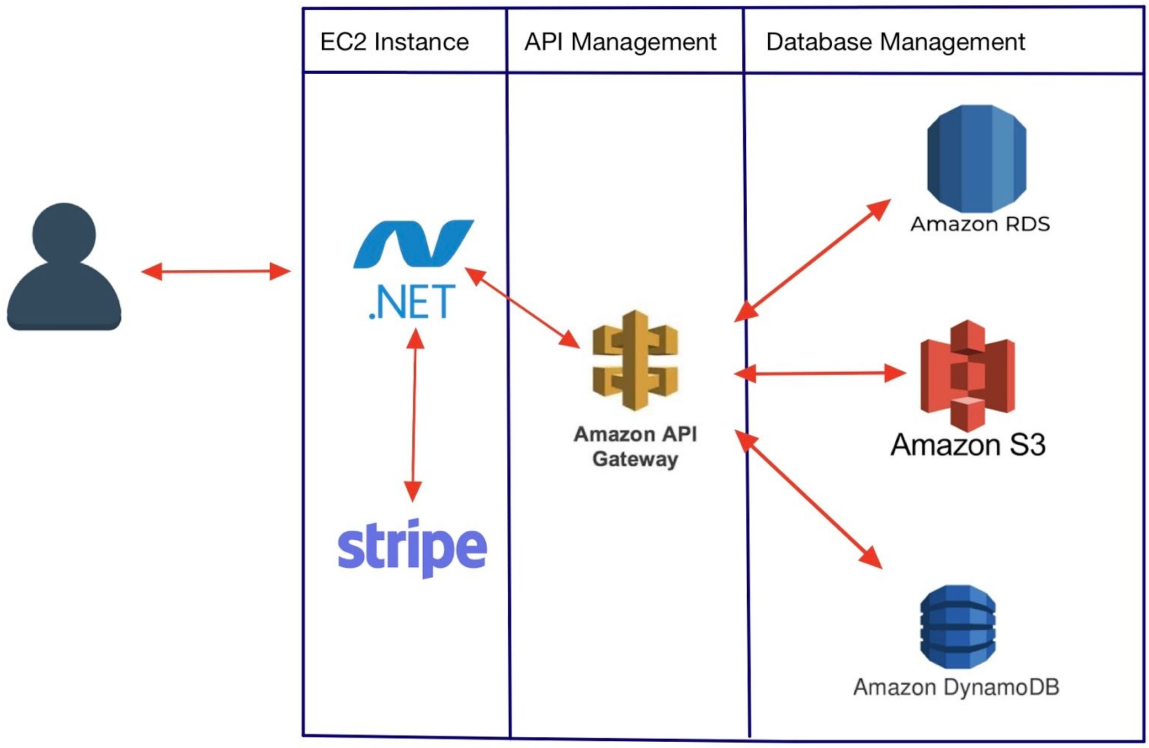
8. Structure Diagram


EC2 Instance
API Management
Database Management
.NET
stripe
Amazon API Gateway
Amazon RDS
Amazon S3
Amazon DynamoDB