

Quality Assurance Testing

Application

Portfolio Website Backend

Version

1.0

Environment

Development/Production E2E

Date Tested

7.31.2023

Performance Test Plan



PortfolioWebsite_Backend_Performance.jmx

Performance Testing:

Small Load Test

Purpose: To verify if the system can handle the minimum expected user load.

Parameters:

Number of Threads (Users): 50

Ramp-Up Period (in seconds): 20

Loop Count: 10

Screenshot:

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughput	Received KB/sec
Register User R...	500	8963	9169	11434	12227	13718	1655	14397	0.00%	27.1/min	0.20
Delete User Req...	500	7899	7511	10669	11413	14061	1504	16997	0.00%	26.9/min	0.11
Login User Req...	500	4651	3995	7384	7696	8236	1161	10044	0.00%	26.9/min	0.33
Get Users Requ...	500	5175	4391	7839	8421	9472	1042	9861	0.00%	26.8/min	0.56
Update User Re...	500	9548	8821	12518	13387	14631	2608	16567	0.00%	26.6/min	0.33
Refresh Token ...	500	4834	4342	7724	8067	9265	2352	9946	0.00%	26.6/min	0.32
Forgot Passwor...	500	9795	9046	13231	13850	15032	3163	16567	0.00%	26.6/min	0.12
Reset Password...	500	4923	4508	7713	8755	9334	2249	9486	0.00%	26.6/min	0.26
Reset Password...	500	6062	4935	9301	9487	9941	2132	10115	0.00%	26.7/min	0.12
Logout User	500	5875	4904	9268	9486	9947	1639	10131	0.00%	26.7/min	0.18
Get Contacts R...	500	5829	4832	9241	9435	9912	977	10131	0.00%	26.9/min	0.17
Get Contacts B...	500	5620	4822	9192	9385	9940	892	10129	0.00%	26.9/min	0.18
Get Contacts B...	500	5395	4734	8936	9375	9903	827	9964	0.00%	27.0/min	0.18
Get Contacts B...	500	5300	4775	8612	9268	9627	799	10129	0.00%	27.1/min	0.12
Add Contact	500	8629	8518	12072	13413	14130	933	15032	0.00%	27.2/min	0.19
Update Contact	500	7465	7401	9524	10143	12293	1028	14042	0.00%	27.4/min	0.19
Delete Contact	500	7256	7130	9759	10341	11296	924	12560	0.00%	27.6/min	0.14
TOTAL	8500	6660	6586	9946	11404	13630	799	16997	0.00%	7.4/sec	3.56

Medium Load Test

Purpose: To verify if the system can handle the minimum expected user load.

Parameters:

Number of Threads (Users): 100

Ramp-Up Period (in seconds): 40

Loop Count: 10

Screenshot:

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughput	Received KB/sec
Register User R...	1000	17787	16578	23278	25333	28420	1090	146689	0.00%	26.5/min	0.19
Delete User Req...	1000	16805	16086	21001	23272	28197	1038	138010	0.00%	26.4/min	0.11
Login User Req...	1000	9280	8338	14417	16356	18629	972	19833	0.00%	26.3/min	0.33
Get Users Requ...	1000	9904	8811	15835	17723	18922	808	20610	0.00%	26.3/min	0.54
Update User Re...	1000	18682	18273	24851	27196	28680	2218	33242	0.00%	26.3/min	0.32
Refresh Token ...	1000	10240	9539	15679	17368	18920	903	20810	0.00%	26.4/min	0.31
Forgot Passwor...	1000	18641	18489	23870	26177	28419	2151	47621	0.00%	26.4/min	0.11
Reset Password...	1000	9808	9250	14761	16849	18686	1709	20171	0.00%	26.4/min	0.26
Reset Password...	1000	11074	9677	17583	18590	20363	1391	20805	0.00%	26.4/min	0.11
Logout User	1000	10357	9563	16408	17841	19650	1023	20805	0.00%	26.4/min	0.18
Get Contacts R...	1000	10767	9611	17076	18139	19651	1035	20407	0.00%	26.5/min	0.17
Get Contacts B...	1000	10698	9592	16786	18346	20174	965	21343	0.00%	26.6/min	0.18
Get Contacts B...	1000	10103	9141	15862	17514	19158	904	21343	0.00%	26.7/min	0.18
Get Contacts B...	1000	10064	9050	15933	17356	19261	888	20805	0.00%	26.9/min	0.12
Add Contact	1000	17389	17159	22419	24394	27659	991	29960	0.00%	27.0/min	0.19
Update Contact	1000	16827	16219	21964	23628	27412	966	138008	0.00%	27.3/min	0.19
Delete Contact	1000	16680	15869	22228	23574	27167	950	146688	0.00%	27.4/min	0.14
TOTAL	17000	13242	12780	19650	22156	27170	808	146689	0.00%	7.4/sec	3.57

Heavy Load Test

Purpose: To verify if the system can handle the minimum expected user load.

Parameters:

Number of Threads (Users): 200

Ramp-Up Period (in seconds): 80

Loop Count: 10

Screenshot:

Label	# Samples	Average	Median	90% Line	95% Line	99% Line	Min	Maximum	Error %	Throughput	Received KB/sec
Register User R...	2000	34336	34378	43225	46180	52707	1200	166626	0.00%	27.2/min	0.20
Delete User Req...	2000	31266	29819	41042	43537	49084	1127	170714	0.00%	27.0/min	0.11
Login User Req...	2000	21227	20699	29767	32528	36829	1103	42535	0.00%	26.8/min	0.33
Get Users Requ...	2000	18916	16985	29230	31932	35050	1061	38899	0.00%	26.7/min	0.55
Update User Re...	2000	35907	34228	47499	50570	54101	2490	57383	0.00%	26.6/min	0.33
Refresh Token ...	2000	22150	21251	31171	33789	38101	2082	42413	0.00%	26.5/min	0.31
Forgot Passwor...	2000	35923	34437	46492	49387	53324	5576	170714	0.00%	26.4/min	0.11
Reset Password...	2000	20910	18543	31291	33772	38330	2576	41776	0.00%	26.4/min	0.26
Reset Password...	2000	22530	20347	32630	34811	38658	3429	41590	0.00%	26.4/min	0.11
Logout User	2000	20401	18277	31704	34160	38327	1713	41700	0.00%	26.5/min	0.18
Get Contacts R...	2000	21260	18682	32236	34494	38482	2403	47203	0.00%	26.5/min	0.17
Get Contacts B...	2000	21438	19263	31945	34120	38319	2149	47204	0.00%	26.5/min	0.18
Get Contacts B...	2000	20622	18260	31699	34028	37826	972	42826	0.00%	26.6/min	0.18
Get Contacts B...	2000	20113	18003	31163	33613	37676	872	47205	0.00%	26.7/min	0.12
Add Contact	2000	34679	34031	45773	49434	54601	1054	60770	0.00%	26.7/min	0.19
Update Contact	2000	33270	32257	43533	46806	53099	1055	166623	0.00%	26.9/min	0.18
Delete Contact	2000	32099	31810	41587	44814	51681	1038	157400	0.00%	27.2/min	0.13
TOTAL	34000	26297	26588	39163	43191	50840	872	170714	0.00%	7.4/sec	3.61

Service Tests:

ATTDs

Group Summary

PortfolioBackend_ATDDs

Tests in group: 37

Total Duration: 1.4 min

Outcomes

37 Passed

Unit Tests

Group Summary

PortfolioBackend_UnitTests

Tests in group: 88

Total Duration: 1.6 min

Outcomes

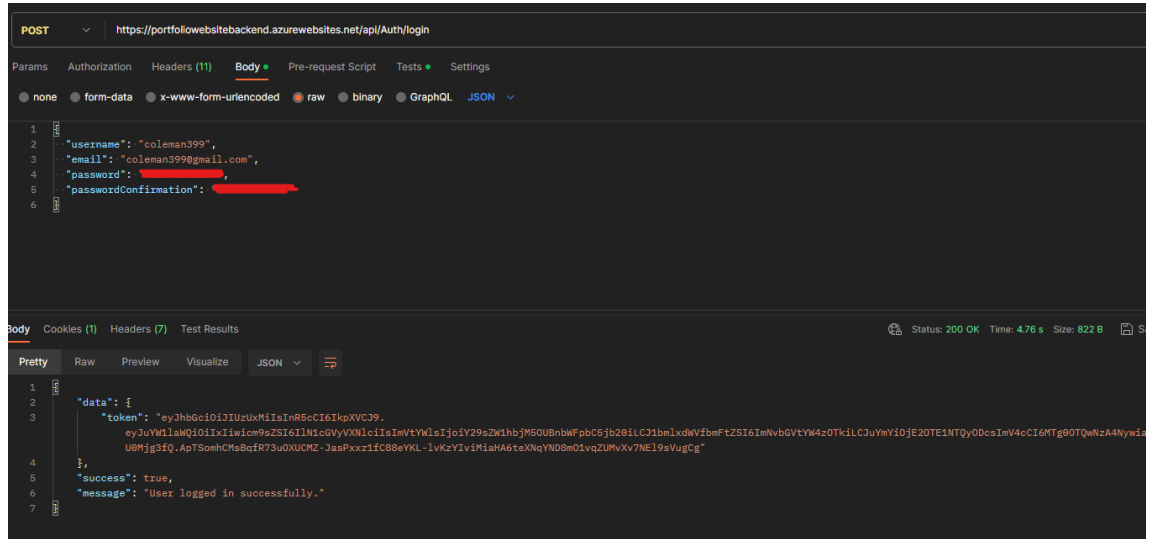
88 Passed

Code Coverage

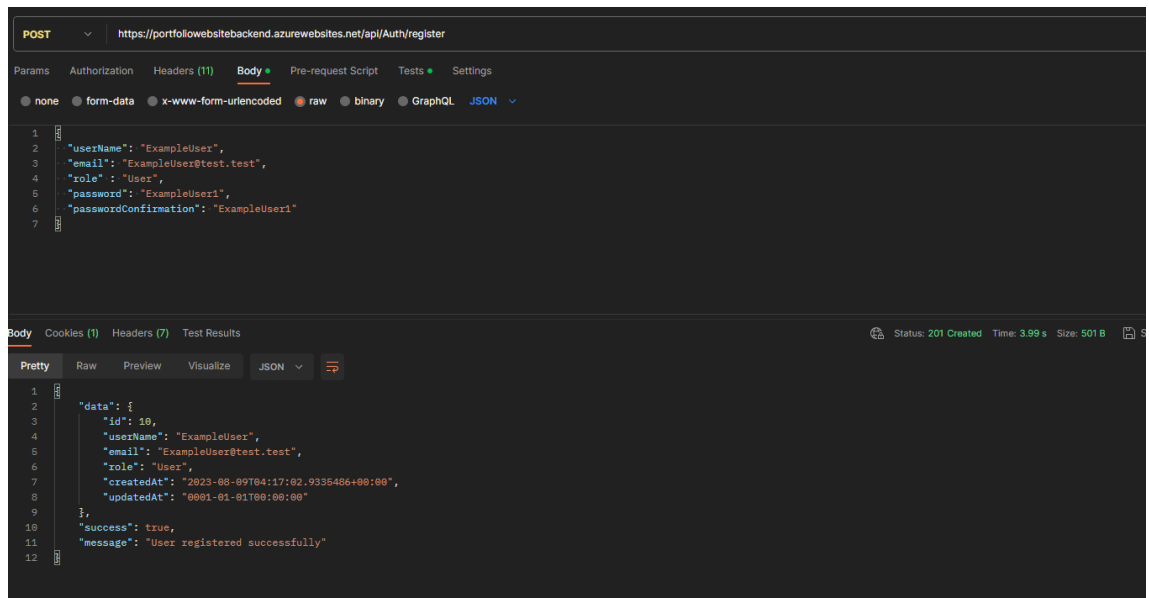
Coverage	Summary	Risk Hotspots	Coverage Log
Assemblies:		3	
Classes:		74	
Files:		74	
Covered lines:		3133	
Uncovered lines:		728	
Coverable lines:		3861	
Total lines:		5905	
Line coverage:		81.1% (3133 of 3861)	
Covered branches:		338	
Total branches:		558	
Branch coverage:		60.5% (338 of 558)	

Production End to End:

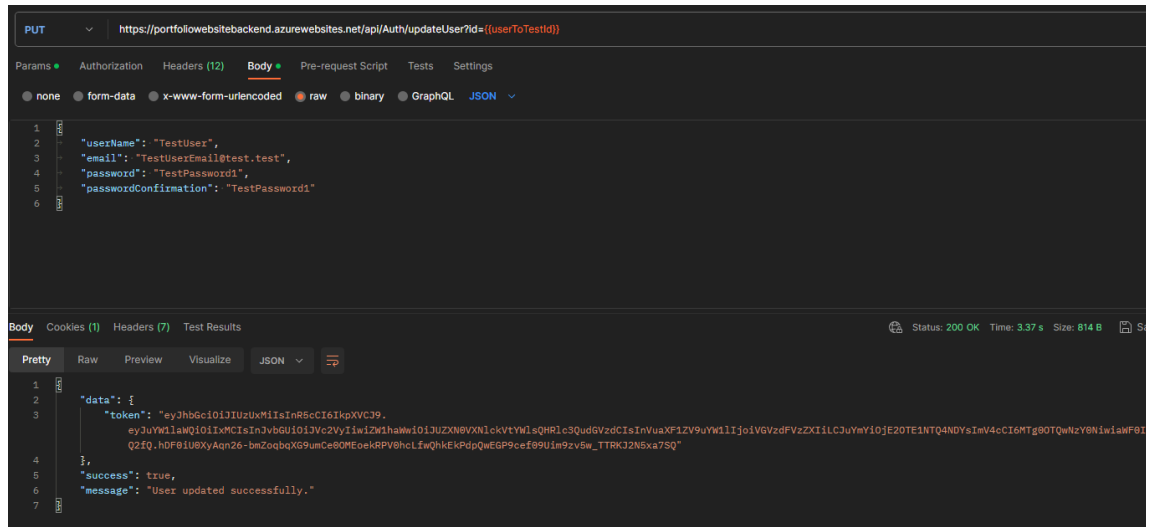
1. Log in



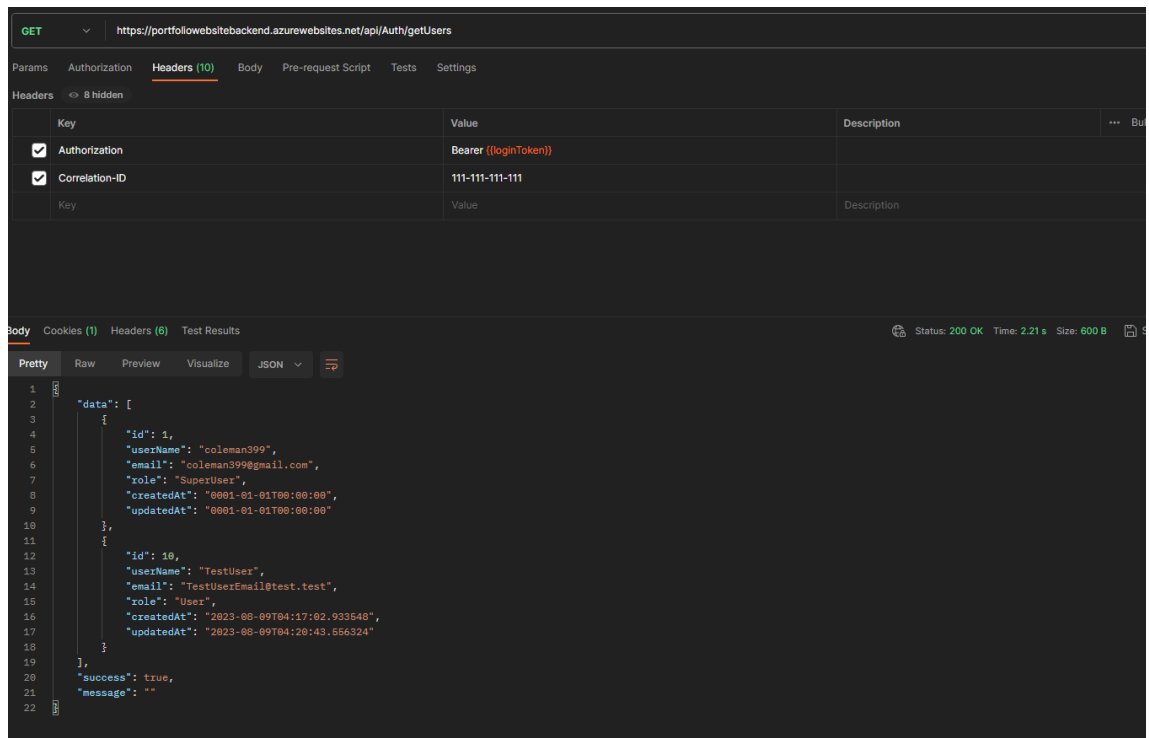
2. Register User



3. Update User



4. Get Users



5. Refresh Token

POST <https://portfoliowebsitebackend.azurewebsites.net/api/Auth/refreshToken>

Params Authorization Headers (1) Body Pre-request Script Tests Settings

Headers 9 hidden

Key	Value	Description
<input checked="" type="checkbox"/> Authorization	Bearer {{loginToken}}	
<input checked="" type="checkbox"/> Correlation-ID	111-111-111-111	
Key	Value	Description

Body Cookies (1) Headers (7) Test Results

Status: 200 OK Time: 292 ms Size: 792 B

Pretty Raw Preview Visualize JSON

```
1  {
2    "data": {
3      "token": "eyJhbGciOiJIUzUxMiIsInR5cCI6IkpzYW5kLCJ1bmIxdmVfZm9tZS16ImNvbGVyZW4zOTk1LCJ1bmY0IjE20TE1NTQ5NTUsImV4cCI6MTg0OTQwMzc1NSwia
4      "message": "Refresh token successful."
5    },
6    "success": true,
7    "message": ""
8  }
```

6. Forgot Password

POST <https://portfoliowebsitebackend.azurewebsites.net/api/Auth/forgotPassword>

Params Authorization Headers (1) Body Pre-request Script Tests Settings

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

```
1  {
2    "username": "",
3    "email": "coleman999@gmail.com"
4  }
```

Body Cookies (1) Headers (6) Test Results

Status: 200 OK Time: 3.21 s Size: 323 B

Pretty Raw Preview Visualize JSON

```
1  {
2    "data": {},
3    "success": true,
4    "message": "Forgot Password Operation Complete."
5  }
```

7. Reset Password Confirmation

POST <https://portfoliowebsitebackend.azurewebsites.net/api/Auth/resetPasswordConfirmation?token=eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.eyJlbWFPbCI6ImNvbGVYVW4zOTIAZ21haWwY29tIiwidW5pcXVXZ25hbWUIC>

Params • Authorization Headers (10) Body Pre-request Script Tests • Settings •

Query Params

Key	Value	Description
<input checked="" type="checkbox"/> token	eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.eyJlbWFPbCI6ImNvbGVYVW4zOTIAZ21haWwY29tIiwidW5pcXVXZ25hbWUIC	
Key	Value	Description

Body Cookies (1) Headers (6) Test Results

Status: 200 OK Time: 3.07 s Size: 659 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": {
3     "token": "eyJhbGciOiJIUzUxMiIsInR5cCI6IkpXVCJ9.eyJlbWFPbCI6ImNvbGVYVW4zOTIAZ21haWwY29tIiwidW5pcXVXZ25hbWUIC
4   },
5   "success": true,
6   "message": "Reset Password Confirmation Operation Complete."
7 }
```

8. Reset Password

POST <https://portfoliowebsitebackend.azurewebsites.net/api/Auth/resetPassword>

Params Authorization Headers (12) Body • Pre-request Script Tests Settings

Headers <=> 10 hidden

Key	Value	Description	...	Bulk
<input checked="" type="checkbox"/> Authorization	Bearer {(resetPasswordConfirmationToken)}			
<input checked="" type="checkbox"/> Correlation-ID	111-111-111-111			
Key	Value	Description		

Body Cookies (1) Headers (6) Test Results

Status: 200 OK Time: 4.74 s Size: 322 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": {},
3   "success": true,
4   "message": "Reset Password Operation Complete."
5 }
```

9. Delete User

The screenshot shows a REST client interface with a DELETE request to `https://portfolowebsitebackend.azurewebsites.net/api/Auth/deleteUser?id={{userToTestId}}`. The Headers tab is active, showing three headers: Authorization (Bearer {{loginToken}}), Authorization (Bearer {{resetPasswordConfirmationToken}}), and Correlation-ID (111-111-111-111). The Body tab shows a JSON response: `{ "data": {}, "success": true, "message": "User deleted successfully." }`. The status is 200 OK, time is 4.23 s, and size is 314 B.

Key	Value	Description
<input checked="" type="checkbox"/> Authorization	Bearer {{loginToken}}	
<input type="checkbox"/> Authorization	Bearer {{resetPasswordConfirmationToken}}	
<input checked="" type="checkbox"/> Correlation-ID	111-111-111-111	

```
1 {
2   "data": {},
3   "success": true,
4   "message": "User deleted successfully."
5 }
```

10. Get Contacts

The screenshot shows a REST client interface with a GET request to `https://portfolowebsitebackend.azurewebsites.net/api/Contact/getContacts`. The Headers tab is active, showing 10 headers. The Body tab shows a JSON response: `{ "data": [{ "id": 1, "name": "TestUser1", "email": "User1Email@test.test", "phone": "1234567890", "message": "Test Message", "createdAt": "2023-08-06T16:25:35.900555", "updatedAt": "0001-01-01T00:00:00" }, { "id": 2, "name": "TestUser1", "email": "User1Email@test.test", "phone": "1234567890", "message": "Test Message", "createdAt": "2023-08-06T16:35:36.556642", "updatedAt": "0001-01-01T00:00:00" }, { "id": 3, "name": "", "email": "User1Email@test.test", "phone": "1234567890", "message": "", "createdAt": "2023-08-06T16:35:40.243006", "updatedAt": "0001-01-01T00:00:00" }, { "id": 4, "name": "", "email": "User1Email@test.test", "phone": "1234567890", "message": "", "createdAt": "2023-08-06T16:47:31.070033", "updatedAt": "0001-01-01T00:00:00" }] }`. The status is 200 OK, time is 487 ms, and size is 1.12 KB.

Key	Value	Description
10 headers		

```
1 {
2   "data": [
3     {
4       "id": 1,
5       "name": "TestUser1",
6       "email": "User1Email@test.test",
7       "phone": "1234567890",
8       "message": "Test Message",
9       "createdAt": "2023-08-06T16:25:35.900555",
10      "updatedAt": "0001-01-01T00:00:00"
11     },
12     {
13       "id": 2,
14       "name": "TestUser1",
15       "email": "User1Email@test.test",
16       "phone": "1234567890",
17       "message": "Test Message",
18       "createdAt": "2023-08-06T16:35:36.556642",
19       "updatedAt": "0001-01-01T00:00:00"
20     },
21     {
22       "id": 3,
23       "name": "",
24       "email": "User1Email@test.test",
25       "phone": "1234567890",
26       "message": "",
27       "createdAt": "2023-08-06T16:35:40.243006",
28       "updatedAt": "0001-01-01T00:00:00"
29     },
30     {
31       "id": 4,
32       "name": "",
33       "email": "User1Email@test.test",
34       "phone": "1234567890",
35       "message": "",
36       "createdAt": "2023-08-06T16:47:31.070033",
37       "updatedAt": "0001-01-01T00:00:00"
38     }
39   ]
40 }
```


11. Add Contact

The screenshot shows a REST client interface with a POST request to `https://portfolowebsitebackend.azurewebsites.net/api/Contact/addContact`. The request body is a JSON object with the following structure:

```
1 {
2   "Name": "string",
3   "Email": "string@gmail.com"
4 }
```

The response status is 201 Created, with a time of 1392 ms and a size of 521 B. The response body is a JSON object:

```
1 {
2   "data": {
3     "id": 6,
4     "name": "string",
5     "email": "string@gmail.com",
6     "phone": null,
7     "message": null,
8     "createdAt": "2023-08-09T04:39:10.691025+00:00",
9     "updatedAt": "0001-01-01T00:00:00"
10  },
11   "success": true,
12   "message": "Contact added successfully"
13 }
```

12. Get Contact by Id

The screenshot shows a REST client interface with a GET request to `https://portfolowebsitebackend.azurewebsites.net/api/Contact/getContactById?id=({contactToTestId})`. The query parameter `id` is set to `{{contactToTestId}}`. The response status is 200 OK, with a time of 269 ms and a size of 464 B. The response body is a JSON object:

```
1 {
2   "data": {
3     "id": 6,
4     "name": "string",
5     "email": "string@gmail.com",
6     "phone": null,
7     "message": null,
8     "createdAt": "2023-08-09T04:39:10.691002",
9     "updatedAt": "0001-01-01T00:00:00"
10  },
11   "success": true,
12   "message": "Contact with id 6 found."
13 }
```

13. Get Contact by Name

GET <https://portfoliowebsitebackend.azurewebsites.net/api/Contact/getContactsByName?name=string>

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Headers 8 hidden

Key	Value	Description
Authorization	Bearer ((loginToken))	
Correlation-ID	111-111-111-111	
Key	Value	Description

Body Cookies (1) Headers (6) Test Results

Status: 200 OK Time: 265 ms Size: 485 B

Pretty Raw Preview Visualize JSON

```
1  {
2    "data": [
3      {
4        "id": 6,
5        "name": "string",
6        "email": "string@gmail.com",
7        "phone": null,
8        "message": null,
9        "createdAt": "2023-06-09T04:39:18.691882",
10       "updatedAt": "0001-01-01T00:00:00"
11      }
12    ],
13    "success": true,
14    "message": "Contacts with similar name to string found."
15  }
```

14. Get Contact by Email

GET <https://portfoliowebsitebackend.azurewebsites.net/api/Contact/getContactsByEmail?email=string@gmail.com>

Params Authorization Headers (10) Body Pre-request Script Tests Settings

Headers 8 hidden

Key	Value	Description
Authorization	Bearer ((loginToken))	
Correlation-ID	111-111-111-111	
Key	Value	Description

Body Cookies (1) Headers (6) Test Results

Status: 200 OK Time: 232 ms Size: 484 B

Pretty Raw Preview Visualize JSON

```
1  {
2    "data": [
3      {
4        "id": 6,
5        "name": "string",
6        "email": "string@gmail.com",
7        "phone": null,
8        "message": null,
9        "createdAt": "2023-06-09T04:39:18.691882",
10       "updatedAt": "0001-01-01T00:00:00"
11      }
12    ],
13    "success": true,
14    "message": "Contact with email string@gmail.com found."
15  }
```

15. Update Contact

The screenshot shows a REST client interface with a PUT request to `https://portfoliowebsitbackend.azurewebsites.net/api/Contact/updateContact?id=({contactToTestId})`. The request body is a JSON object with the following fields:

```
1 {
2   "name": "string",
3   "email": "User1Email@test.test",
4   "phone": "1234567890",
5   "message": "string"
6 }
```

The response is shown in the 'Body' tab, displaying a JSON object with the following fields:

```
1 {
2   "data": {
3     "id": 6,
4     "name": "string",
5     "email": "User1Email@test.test",
6     "phone": "1234567890",
7     "message": "string",
8     "createdAt": "0001-01-01T00:00:00",
9     "updatedAt": "0001-01-01T00:00:00"
10  },
11   "success": true,
12   "message": "Contact updated successfully."
13 }
```

Status: 200 OK Time: 1312 ms Size: 478 B

16. Delete Contact

The screenshot shows a REST client interface with a DELETE request to `https://portfoliowebsitbackend.azurewebsites.net/api/Contact/deleteContact?id=({contactToTestId})`. The request has a query parameter `id` with the value `6`.

Key	Value	Description
<input checked="" type="checkbox"/> id	<code>{{contactToTestId}}</code>	
<input type="checkbox"/> id	6	
Key	Value	Description

The response is shown in the 'Body' tab, displaying a JSON object with the following fields:

```
1 {
2   "data": {
3     "id": 6,
4     "email": "User1Email@test.test"
5   },
6   "success": true,
7   "message": "Contact with id 6 has been deleted."
8 }
```

Status: 200 OK Time: 2.47 s Size: 360 B

17. Logout User

The screenshot shows a REST client interface for a POST request to `https://portfolowebsitebackend.azurewebsites.net/api/Auth/logout`. The 'Headers' tab is active, displaying two headers: 'Authorization' with the value `Bearer ((loginToken))` and 'Correlation-ID' with the value `111-111-111-111`. The 'Body' tab is also visible, showing a JSON response in 'Pretty' format:

```
1 {
2   "data": {},
3   "success": true,
4   "message": "User logged out successfully."
5 }
```

At the bottom right, the status is `200 OK`, time is `322 ms`, and size is `467 B`.

18. Health Check

The screenshot shows a REST client interface for a GET request to `https://portfolowebsitebackend.azurewebsites.net/healthcheck`. The 'Params' tab is active, showing no query parameters. The 'Body' tab is also visible, showing a plain text response in 'Text' format:

```
1 Healthy
```

At the bottom right, the status is `200 OK`, time is `377 ms`, and size is `317 B`.