

Summary:

I developed a Spring Boot application featuring four RESTful APIs, complemented with JWT Bearer authentication for heightened security. The application encompasses:

Signup User API: Users can register by furnishing requisite details such as username, email, and password. Upon successful registration, a JWT token is generated and provided to facilitate subsequent authentication.

Login User API: Users authenticate themselves by submitting their credentials (username/email and password). Following successful authentication, a JWT token is generated and issued, granting access to protected endpoints.

Update User API: Authenticated users possess the capability to modify their profile information, encompassing username, email, or password. This endpoint is safeguarded by JWT authentication, ensuring solely authorized users can adjust their details.

Third-Party API Integration: A designated API endpoint is established to execute requests to a third-party API (CoinMarketCap API) for retrieving cryptocurrency data. This endpoint is secured with JWT Bearer authentication, guaranteeing only authenticated users can access cryptocurrency information.

The application underwent comprehensive testing leveraging the Postman API testing tool to validate both its functionality and security. Testing protocols included verification of user registration, login, and update functionalities, alongside confirmation that solely authenticated users could access protected endpoints and retrieve cryptocurrency data.

Moreover, a screenshot of the application was attached in a Word file to offer a visual representation of its operation and layout, facilitating a clearer understanding of its functionality and user interface.

In conclusion, the Spring Boot application, fortified with JWT Bearer authentication, furnishes robust user management capabilities while ensuring secure access to the APIs. Its seamless integration with external services, coupled with stringent security measures, underscores its utility and reliability in real-world scenarios.

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My Workspace New Import Overview GET https://pro-api.coinmarl GET http://localhost:8090/ci No environment

http://localhost:8090/cashrich/signup Save

GET http://localhost:8090/cashrich/signup Send

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

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

email	Text	shubhammanmohan16@gmail.com
mobile	Text	8239673870
username	Text	shubham-manmohan
password	Text	Test@123

Body Cookies (1) Headers (15) Test Results 401 Unauthorized 247 ms 514 B Save as example

Pretty Raw Preview Visualize Text

```
1
```

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http://localhost:8090/cashrich/signup Save

POST http://localhost:8090/cashrich/signup Send

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

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

```
1 {
2   "username": "shubham-manmohan",
3   "password": "Test@123",
4   "email": "shubhammanmohan16@gmail.com",
5   "firstName": "Shubham",
6   "lastName": "Manmohan",
7   "mobile": "8239673870"
}
```

Body Cookies (1) Headers (13) Test Results 400 Bad Request 4.12 s 489 B Save as example

Pretty Raw Preview Visualize Text

```
1 Invalid username (Username has to be character and digits only with length of 4 to 15)
```

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My Workspace New Import Overview GET https://pro-api.coinmari POST http://localhost:8090/cashrich/signup No environment

http://localhost:8090/cashrich/signup Save Send

POST http://localhost:8090/cashrich/signup

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

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

```
1 {
2   "username": "shubham16",
3   "password": "Test@123",
4   "email": "shubhammanmohan16@gmail.com",
5   "firstName": "Shubham",
6   "lastName": "Manmohan",
7   "mobile": "8239673870"
}
```

Body Cookies (1) Headers (14) Test Results 200 OK 210 ms 455 B Save as example

Pretty Raw Preview Visualize Text

1 User Registered successfully ...

Online Find and replace Console Postbot Runner Start Proxy Cookies Trash

Type here to search 18:20 17-03-2024

MySQL Workbench Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator SCHEMAS Filter objects

cashrich Tables user Views Stored Procedures Functions flowable sys

Query 1 user SELECT * FROM cashrich.user;

Limit to 1000 rows

Result Grid Filter Rows: Edit Export/Import Wrap Cell Contents

	id	email	first_name	last_name	mobile	password	username
1	1	shubhammanmohan16@gmail.com	Shubham	Manmohan	8239673870	\$2a\$10\$biOjCu8N4Lx8wqwwrq8A.POpMSrD7J...	shubham16

Result Grid

Administration Schemas

Information Table: user Columns: id email first_name last_name mobile password

Object Info Session

Action Output

#	Time	Action	Message	Duration / Fetch
1	10:58:33	Apply changes to cashrich	Changes applied	
2	17:52:38	select * from user LIMIT 0, 1000	Error Code: 1046. No database selected Select the default DB to be used by double-cl...	0.016 sec
3	17:52:50	use cashrich	0 row(s) affected	0.000 sec
4	17:52:54	SELECT * FROM cashrich.user LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
5	18:20:42	SELECT * FROM cashrich.user LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

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Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

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My Workspace

NewImport

OverviewGET https://pro-api.coinmarlPOST http://localhost:8090/c

No environment

Collections

Environments

History

http://localhost:8090/cashrich/signup

Save

Send

POST

http://localhost:8090/cashrich/signup

Params

Authorization

Headers (9)

Body

Pre-request Script

Tests

Settings

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON

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1000

Body

Cookies (1)

Headers (14)

Test Results

409 Conflict

24 ms

461 B

Save as example

Copy

Search

1

Email or username already exists

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My Workspace

NewImport

OverviewGET https://pro-api.coinmarlPOST http://localhost:8090/cPOST http://localhost:8090/c

No environment

Collections

Environments

History

http://localhost:8090/cashrich/login

Save

Send

POST

http://localhost:8090/cashrich/login

Params

Authorization

Headers (9)

Body

Pre-request Script

Tests

Settings

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON

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```
eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJzaHViaG
FtMTYiLCJpYXQiOiE3MTA2MDA3MTQsImV4cCI6M
TcxMDY4NDMxNH0.mvPwwXfo4m4yRG6v74EJk5s7
00MCikf1Jsqt5xRksXg
```

HEADER: ALGORITHM & TOKEN TYPE

```
{
  "alg": "HS256"
}
```

PAYLOAD: DATA

```
{
  "sub": "shubham16",
  "iat": 1710680714,
  "exp": 1710684314
}
```

VERIFY SIGNATURE

```
HMACSHA256(
  base64UrlEncode(header) + "." +
  base64UrlEncode(payload),
  your-256-bit-secret
) ☐ secret base64 encoded
```

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My Workspace New Import Overview GET https://pro-api.coin POST http://localhost:8090 POST http://localhost:8090 No environment

Collections + New Collection

Environments

History

http://localhost:8090/cashrich/login Save

POST http://localhost:8090/cashrich/login Send

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

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

```
1 {
2   "username": "shubham16",
3   "password": "Test@123"
4 }
```

Body Cookies (1) Headers (14) Test Results 200 OK 139 ms 560 B Save as example

Pretty Raw Preview Visualize Text

```
1 eyJhbGciOiJIUzI1NiJ9.eyJzdWIiOiJzaHViaG
FtMTYiLCJpYXQiOiE3MTA2MDA3MTQsImV4cCI6M
TcxMDY4NDMxNH0.mvPwwXfo4m4yRG6v74EJk5s700MCikf1Jsqt5xRksXg
```

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My Workspace New Import Overview GET https://pro-ar POST http://localh POST http://localh POST http://localh No environment

Collections + New Collection Environments History

http://localhost:8090/cashrich/update Save Send

POST http://localhost:8090/cashrich/update

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

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

```
1 {
2   "username": "shubham16",
3   "password": "Test@321New",
4   "firstName": "Mannmohan",
5   "lastName": "Shubham",
6   "mobile": "8239679090"
7 }
```

Body Cookies (1) Headers (14) Test Results 401 Unauthorized 23 ms 462 B Save as example

Pretty Raw Preview Visualize Text

1 Authentication Required (JWT)

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My Workspace New Import Overview GET https://pro-ar POST http://localh POST http://localh POST http://localh No environment

Collections + New Collection Environments History

http://localhost:8090/cashrich/update Save Send

POST http://localhost:8090/cashrich/update

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

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

```
1 {
2   "username": "shubham16",
3   "password": "Test@321",
4   "firstName": "Mannmohan",
5   "lastName": "Shubham",
6   "mobile": "8239679090"
7 }
```

Body Cookies (1) Headers (14) Test Results 200 OK 328 ms 448 B Save as example

Pretty Raw Preview Visualize Text

1 User updated successfully

Online Find and replace Console Postbot Runner Start Proxy Cookies Trash

Type here to search 21:54 17-03-2024

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My Workspace

NewImport

OverviewGET https://POST http://POST http://POST http://GET https://GET http://

No environment

Collections

New Collection

Environments

History

http://localhost:8090/cashrich/api/coin?symbol=BTC,ETHLTC

Save

Send

ParamsAuthorizationHeaders (7)BodyPre-request ScriptTestsSettings

Cookies

Query Params

Key	Value	Description
symbol	BTC,ETHLTC	
Key	Value	Description

BodyCookies (1)Headers (13)Test Results

403 Forbidden21 ms389 B

Save as example

PrettyRawPreviewVisualizeText

1

403 Forbidden

The request was a legal request, but the server is refusing to respond to it. Unlike a 401 Unauthorized response, authenticating will make no difference.

OnlineFind and replaceConsole

PostbotRunnerStart ProxyCookiesTrash

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HomeWorkspacesAPI Network

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My Workspace

NewImport

OverviewGET https://POST http://POST http://POST http://GET https://GET http://

No environment

Collections

New Collection

Environments

History

http://localhost:8090/cashrich/api/coin?symbol=BTC,ETHLTC

Save

Send

ParamsAuthorizationHeaders (8)BodyPre-request ScriptTestsSettings

Cookies

Type

Bearer ...

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. Learn more about variables.

Token

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzZW50b3VkaW8iLCJ1bmwiOiJ1bm91cnQifQ

BodyCookies (1)Headers (14)Test Results

401 Unauthorized1404 ms2.49 KB

Save as example

PrettyRawPreviewVisualizeJSON

1

{
 "message": "Success",
 "response": {
 "id": 2,
 "username": "shubham16",
 "requestParameters": "symbol=BTC,ETHLTC",
 "responseData": {"status":{"timestamp":"2024-03-17T17:16:44.497Z"},"error_code":0,
 }
}

OnlineFind and replaceConsole

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MySQL Workbench

Local instance MySQL80

FileEditViewQueryDatabaseServerToolsScriptingHelp

Navigator

SCHEMAS

Filter objects

cashrich

Tables

api_request_response

user

Views

Stored Procedures

Functions

flowable

sys

Query 1

user

api_request_response

Limit to 1000 rows

1 • SELECT * FROM cashrich.api_request_response;

Result Grid

Filter Rows:

idrequest_parametersrequest_timestampresponse_dataresponse_tim

1symbol=BTC,ETHLTC2024-03-17 22:42:37.207358{"status":{"timestamp":"2024-03-17T17:12:37....2024-03-17 1

2symbol=BTC,ETHLTC2024-03-17 22:46:43.857750{"status":{"timestamp":"2024-03-17T17:16:44....2024-03-17 1

Administration

Schemas

Information

Table: api_request_response

Columns:

idbigint AI PK

request_parametersvarchar(255)

request_timestampdatetime(6)

response_datatext

response_timestampdatetime(6)

usernamevarchar(255)

Object Info

Session

api request response3

Apply

Revert

Context Help

Snippets

Output

Action Output

#TimeActionMessageDuration / Fetch

621:54:46SELECT * FROM cashrich.user LIMIT 0, 10001 row(s) returned0.000 sec / 0.000 sec

721:56:59SELECT * FROM cashrich.user LIMIT 0, 10001 row(s) returned0.000 sec / 0.000 sec

822:39:07SELECT * FROM cashrich.api_request_response LIMIT 0, 10000 row(s) returned0.000 sec / 0.000 sec

922:42:03DROP TABLE `cashrich`.`api_request_response`0 row(s) affected0.031 sec

1022:42:50SELECT * FROM cashrich.api_request_response LIMIT 0, 10001 row(s) returned0.000 sec / 0.000 sec

1122:46:53SELECT * FROM cashrich.api_request_response LIMIT 0, 10002 row(s) returned0.000 sec / 0.000 sec

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Type here to search

22:46

17-03-2024