Birkbeck, University of London
BSc Computing

Undergraduate level

# Cloud Computing Concepts

## MiniWall RESTful API report

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## 1- Setup:

In this section, a brief description of the project setup will be given. This project uses various libraries to complete its development. The following libraries are used in this project:

- Nodemon: used for easily re-running the project
- Mongoose: used for connecting to the mongoDB database
- Express: used for rapidly creating web apps
- Dotenv: used for environment variables
- Body-parser: used for parsing json data
- Bcryptjs: to encrypt / decrypt passwords
- Joi: used for data validation
- Jsonwebtoken: used for generating auth-token when users login.

The project is divided into 3 folders, containing the models, routes, and validation files. The entry point of the project is app.js.

## 2- Database models:

The models represent the how data is structured in the database. The post model has a user field which represents which user is posting it, a title, description and date. Also, a like field which counts the number of likes the post has received. The user schema has a username, email, and password. The like schema takes in a post and user to identify which post is liked by which user. The comment schema consists of a comment, a user for knowing who posted it and post for what post does it belong to.

## 3- Routes:

In this project there are four routes. Post, comment, user, and like. In the post endpoint users, can create, update, read, and delete posts by making calls to appropriate endpoints. In the comment route, users can create, read, update, and delete comments on specific posts. In the user route, the user can register and login. Lastly, the like route is used for liking a specific post.

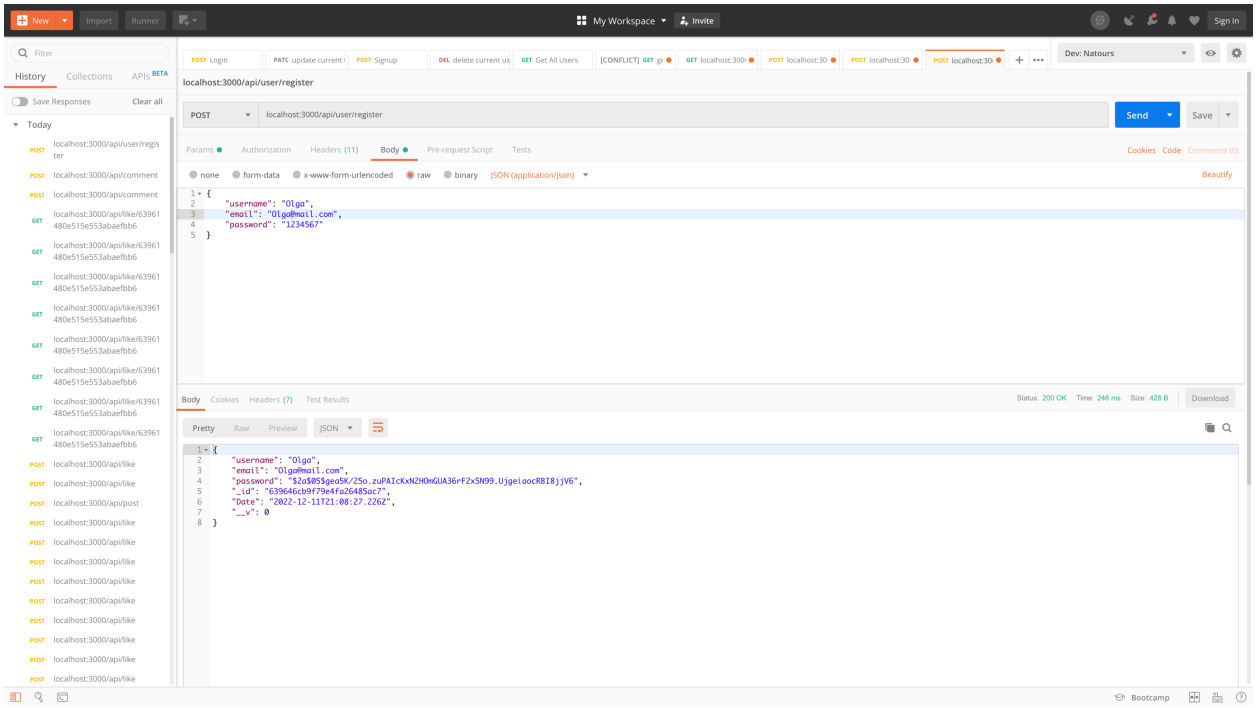
## 4- RESTful API endpoints:

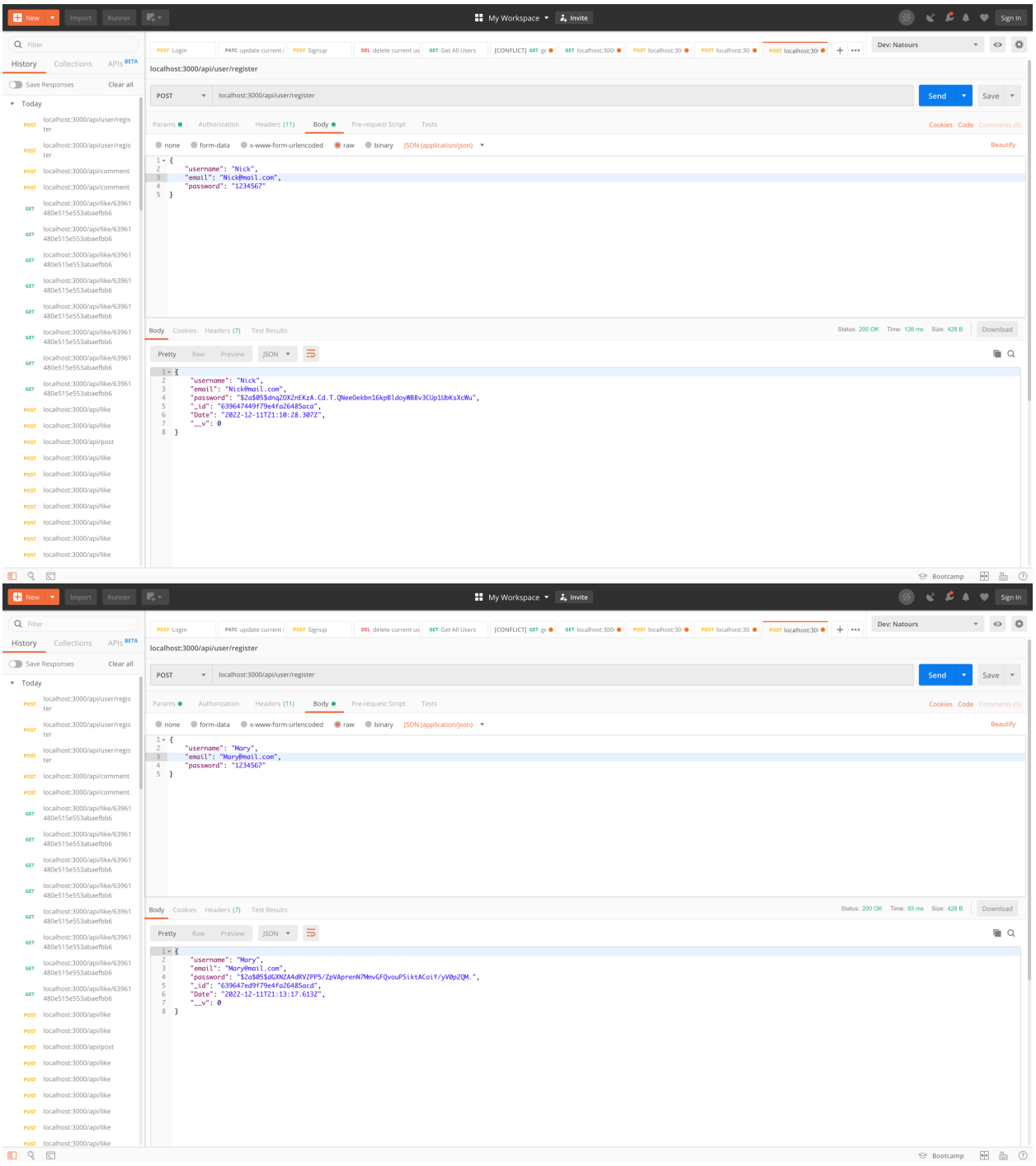
- Localhost:3000/api/user/register
    - Registers users with body json.
- Localhost:3000/api/user/login
    - Logins users and generates auth-token
- Localhost:3000/api/post
    - It either posts a post or reads all posts
- Localhost:3000/api/post/{postId}
    - Gets, updates or deletes a single post by ID
- Localhost:3000/api/comment
    - Posts a comment or gets all comments
- Localhost:3000/api/userId

    - Gets all comments for a single user
- Localhost:3000/api/commentId
    - Either gets, updates or deletes a comment based on commentId
- Localhost:3000/api/like
    - Likes a specific post when the post id is provided in the request body
- Localhost:3000/api/like/postId
    - Gets the number of likes for a specific post

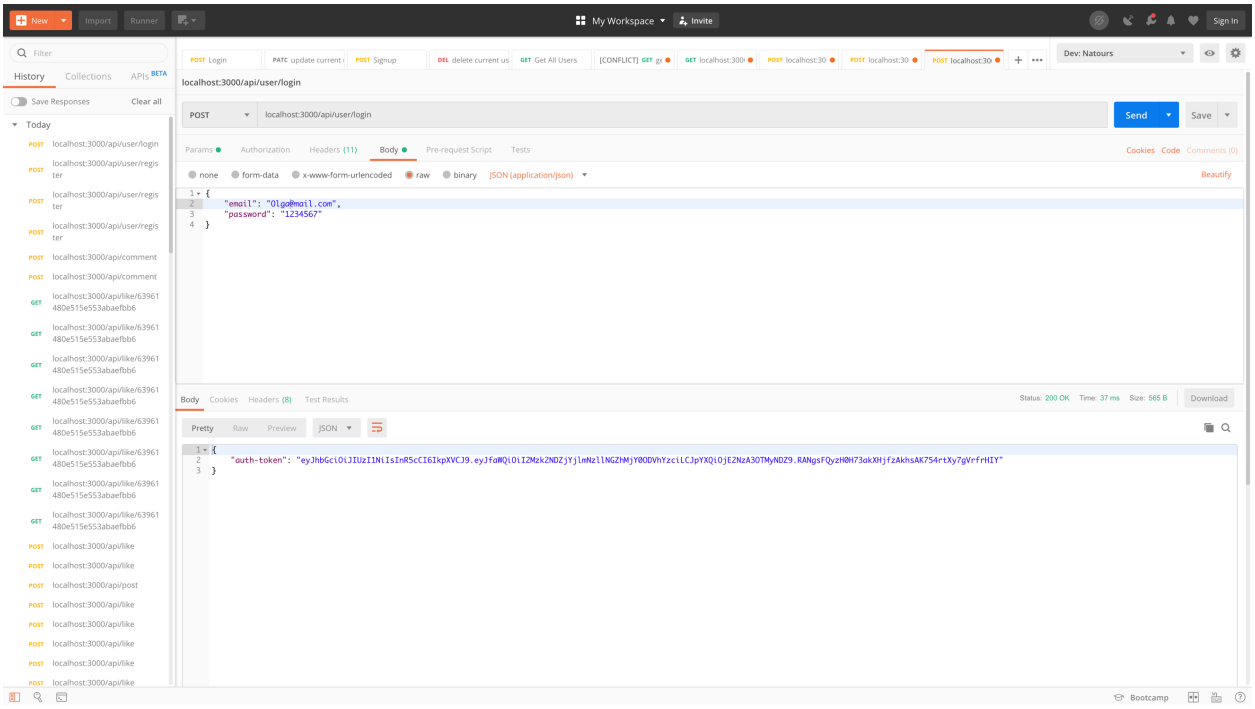
## 5- Test cases:

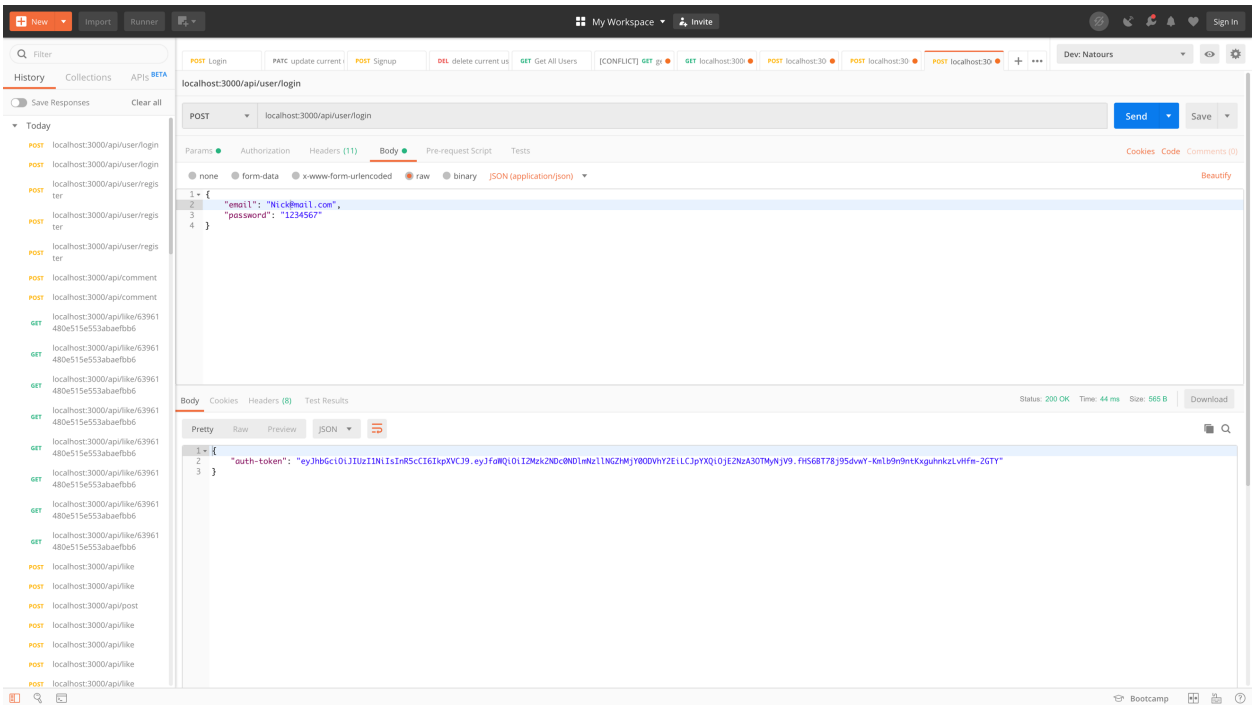
### TC1:

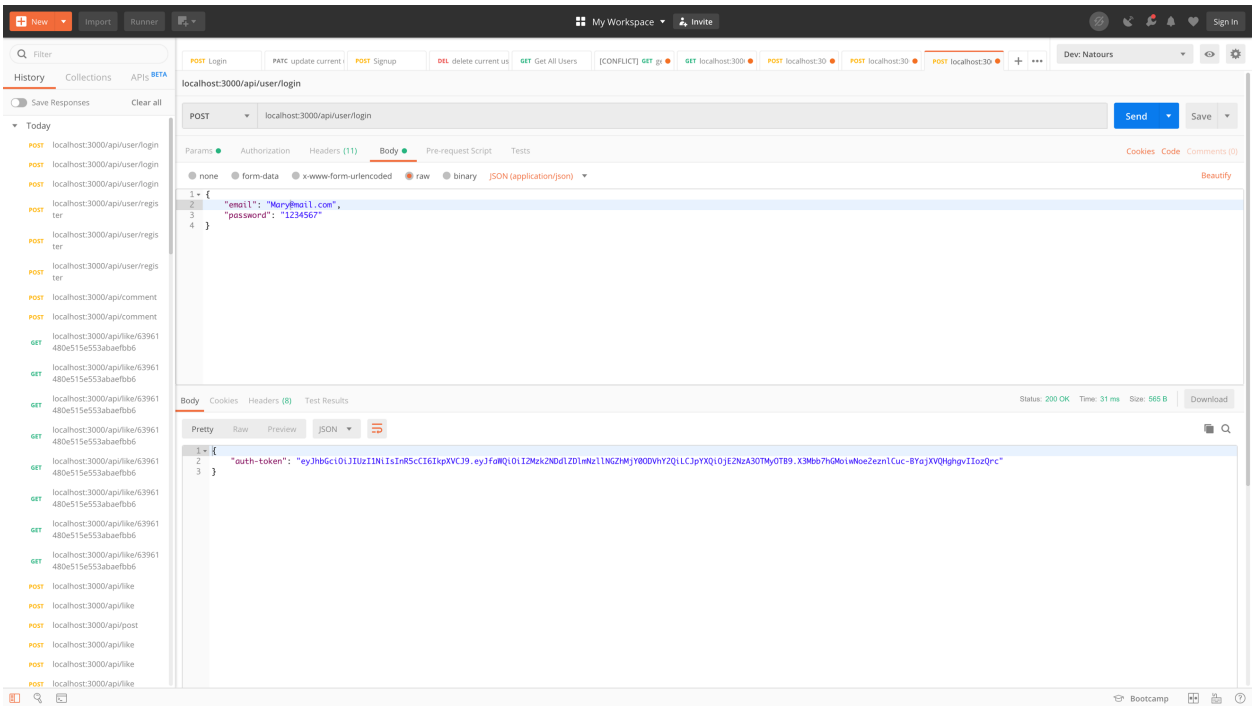



New
Import
Runner
My Workspace
Invite
Sign In
Filter
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/user/register
POST
localhost:3000/api/user/register
Send
Save
Params
Authorization
Headers (11)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"username": "Nick",
"email": "Nick@mail.com",
"password": "1234567"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 126 ms
Size: 428 B
Download
Pretty
Raw
Preview
JSON
{
"username": "Nick",
"email": "Nick@mail.com",
"password": "$2a$05$dnqZOX2nEKzA.Cd.T.QNeeOekbn16kpBldoyMBBv3CUp1UbKsXcWu",
"_id": "6396474497f9e4fa26485aca",
"Date": "2022-12-11T21:10:28.307Z",
"__v": 0
}
Bootcamp
New
Import
Runner
My Workspace
Invite
Sign In
Filter
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/user/register
POST
localhost:3000/api/user/register
Send
Save
Params
Authorization
Headers (11)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"username": "Mary",
"email": "Mary@mail.com",
"password": "1234567"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 93 ms
Size: 428 B
Download
Pretty
Raw
Preview
JSON
{
"username": "Mary",
"email": "Mary@mail.com",
"password": "$2a$05$dGXNZA4dRV2PP5/ZpVAprenN7MmvGFQvouPSiktACoiY/yV0p2QM.",
"_id": "639647ed9f79e4fa26485acd",
"Date": "2022-12-11T21:13:17.613Z",
"__v": 0
}
Bootcamp

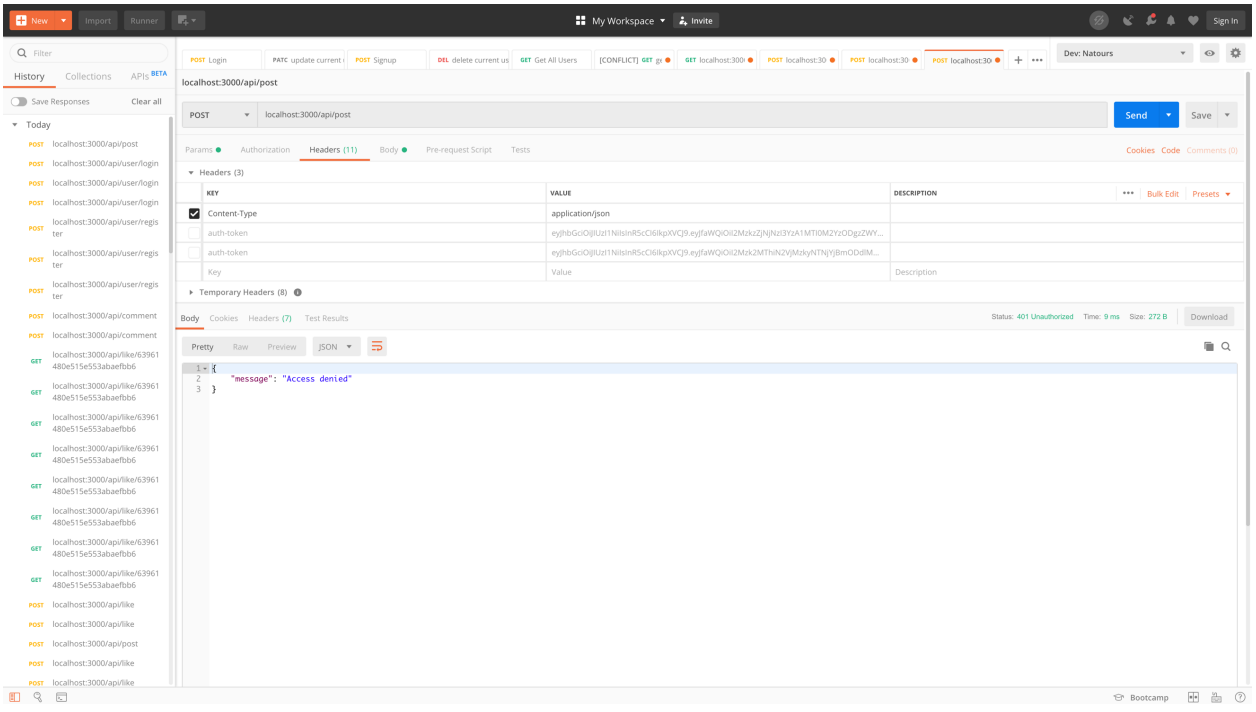
## TC2:


New
Import
Runner
My Workspace
Invite
Sign In
Filter
History
Collections
APIs BETA
Save Responses
Clear all
Today
POST localhost:3000/api/user/login
POST localhost:3000/api/user/register
POST localhost:3000/api/user/register
POST localhost:3000/api/user/register
POST localhost:3000/api/comment
POST localhost:3000/api/comment
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/post
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/like
POST Login
PATC update current
POST Signup
DEL delete current us
GET Get All Users
[CONFLICT] GET gr
GET localhost:300
POST localhost:30
POST localhost:30
POST localhost:30
Dev: Natours
localhost:3000/api/user/login
POST
localhost:3000/api/user/login
Send
Save
Params
Authorization
Headers (11)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"email": "Olga@mail.com",
"password": "1234567"
}
Body
Cookies
Headers (8)
Test Results
Status: 200 OK
Time: 37 ms
Size: 565 B
Download
Pretty
Raw
Preview
JSON
{
"auth-token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2Mzk2NDZjYjlmNzllNGZhMjY0ODVhYzciLCJpYXQiOjE2NzA3OTMyNDZ9.RANgsFQyzH0H73okXHjfzAkhsAK754rtXy7gVrfrHIY"
}
Bootcamp

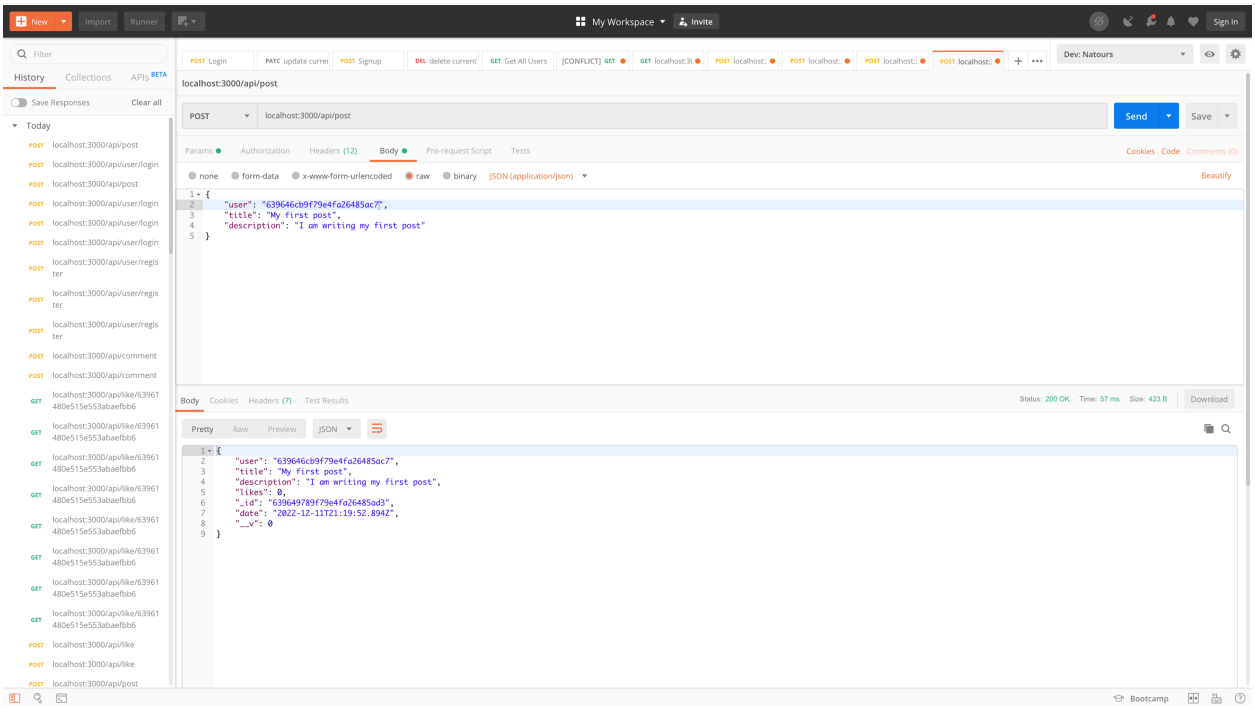

New
Import
Runner
My Workspace
Invite
Sign In
Filter
History
Collections
APIs BETA
Save Responses
Clear all
Today
POST localhost:3000/api/user/login
POST localhost:3000/api/user/login
POST localhost:3000/api/user/register
POST localhost:3000/api/user/register
POST localhost:3000/api/user/register
POST localhost:3000/api/comment
POST localhost:3000/api/comment
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
GET localhost:3000/api/like/63961480e515e553abaefbb6
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/post
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/like
POST localhost:3000/api/like
POST Login
PATC update current
POST Signup
DEL delete current us
GET Get All Users
[CONFLICT] GET gr
GET localhost:300
POST localhost:30
POST localhost:30
POST localhost:30
Dev: Natours
localhost:3000/api/user/login
POST
localhost:3000/api/user/login
Send
Save
Params
Authorization
Headers (11)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"email": "Nick@mail.com",
"password": "1234567"
}
Body
Cookies
Headers (8)
Test Results
Status: 200 OK
Time: 44 ms
Size: 565 B
Download
Pretty
Raw
Preview
JSON
{
"auth-token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2Mzk2NDc0NDlmNzllNGZhMjY0ODVhY2EiLCJpYXQiOjE2NzA3OTMyNjV9.fHS6BT78j95dvwY-Kmlb9n9ntKxguhnkzLvHfm-2GTY"
}
Bootcamp


localhost:3000/api/user/login
POST
localhost:3000/api/user/login
Send
Save
{
"email": "Mary@mail.com",
"password": "1234567"
}
Status: 200 OK
Time: 31 ms
Size: 565 B
{
"auth-token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJfaWQiOiI2Mzk2NDdlZDlmNzllNGZhMjY0ODVhY2QiLCJpYXQiOjE2NzA3OTMyOTB9.X3Mbb7hGMoiwNoeZeznlCuc-BYajXVQHghgvIIozQrc"
}

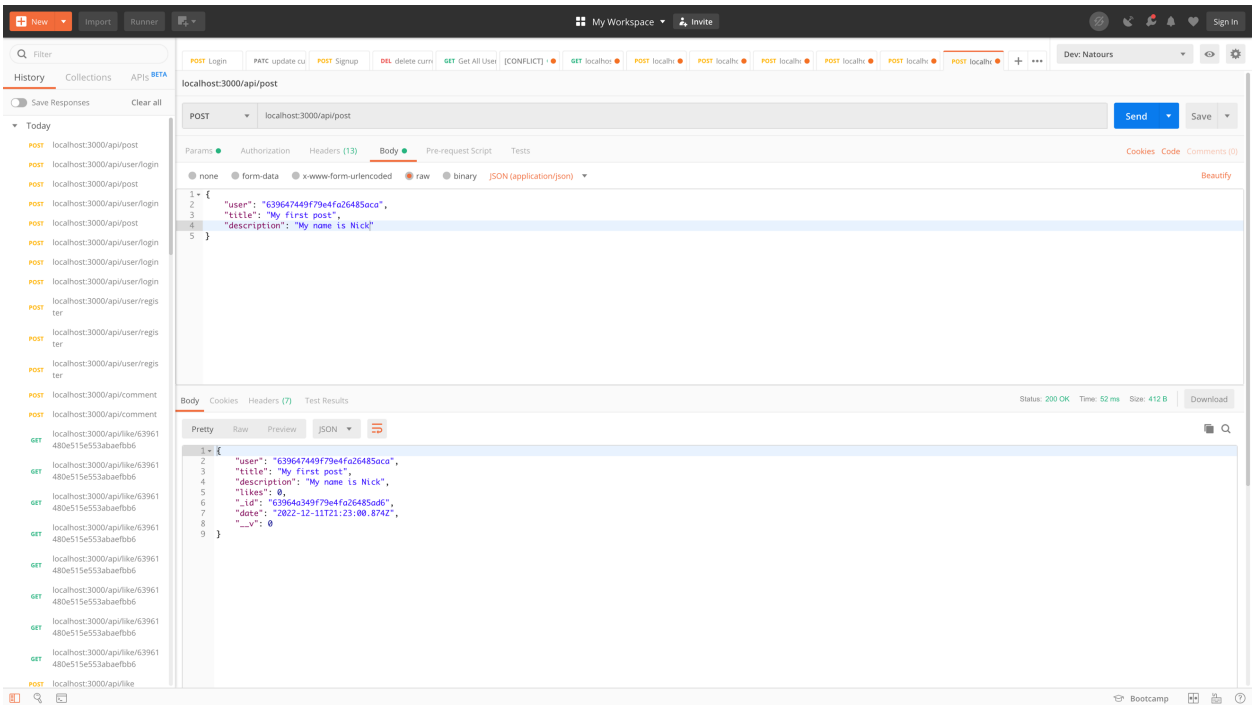
## TC3:


localhost:3000/api/post
POST
localhost:3000/api/post
Send
Save
Headers (3)
KEY
VALUE
DESCRIPTION
Content-Type
application/json
Status: 401 Unauthorized
Time: 9 ms
Size: 272 B
{
"message": "Access denied"
}

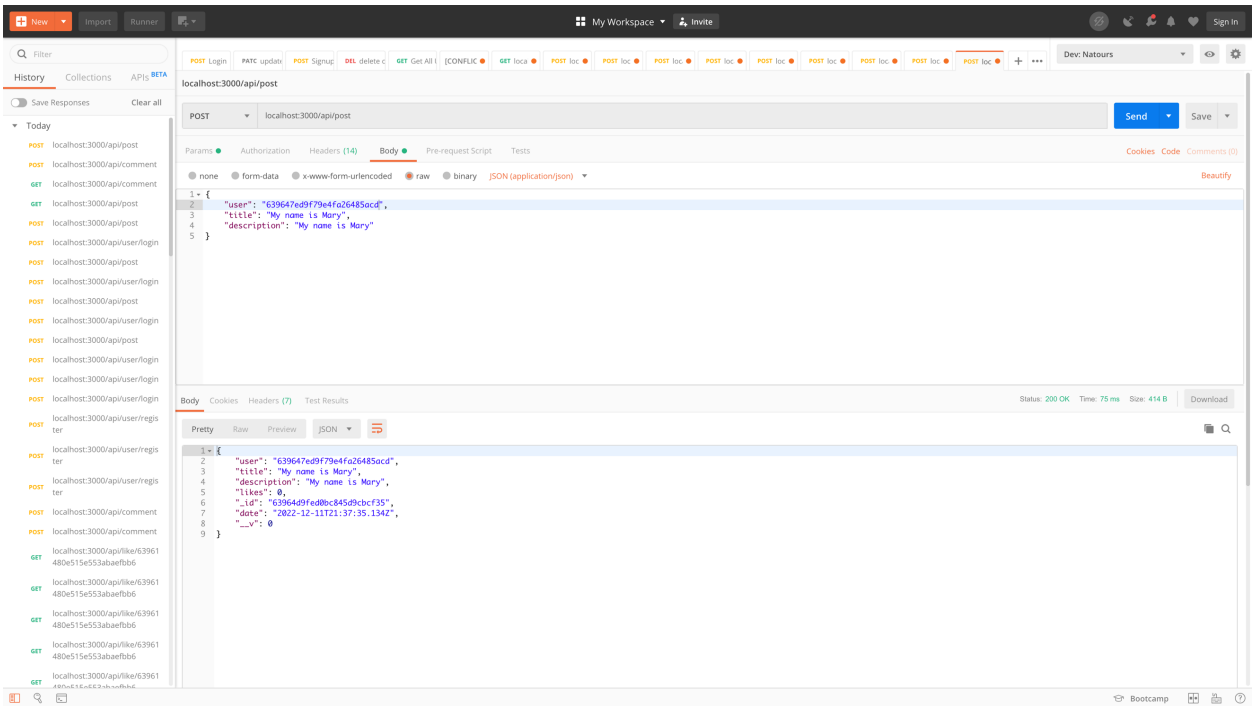
## TC4:


localhost:3000/api/post
POST
localhost:3000/api/post
Send
Save
{
"user": "639646cb9f79e4fa26485ac7",
"title": "My first post",
"description": "I am writing my first post"
}
Status: 200 OK
Time: 57 ms
Size: 423 B
{
"user": "639646cb9f79e4fa26485ac7",
"title": "My first post",
"description": "I am writing my first post",
"likes": 0,
"_id": "639649789f79e4fa26485ad3",
"date": "2022-12-11T21:19:52.894Z",
"__v": 0
}

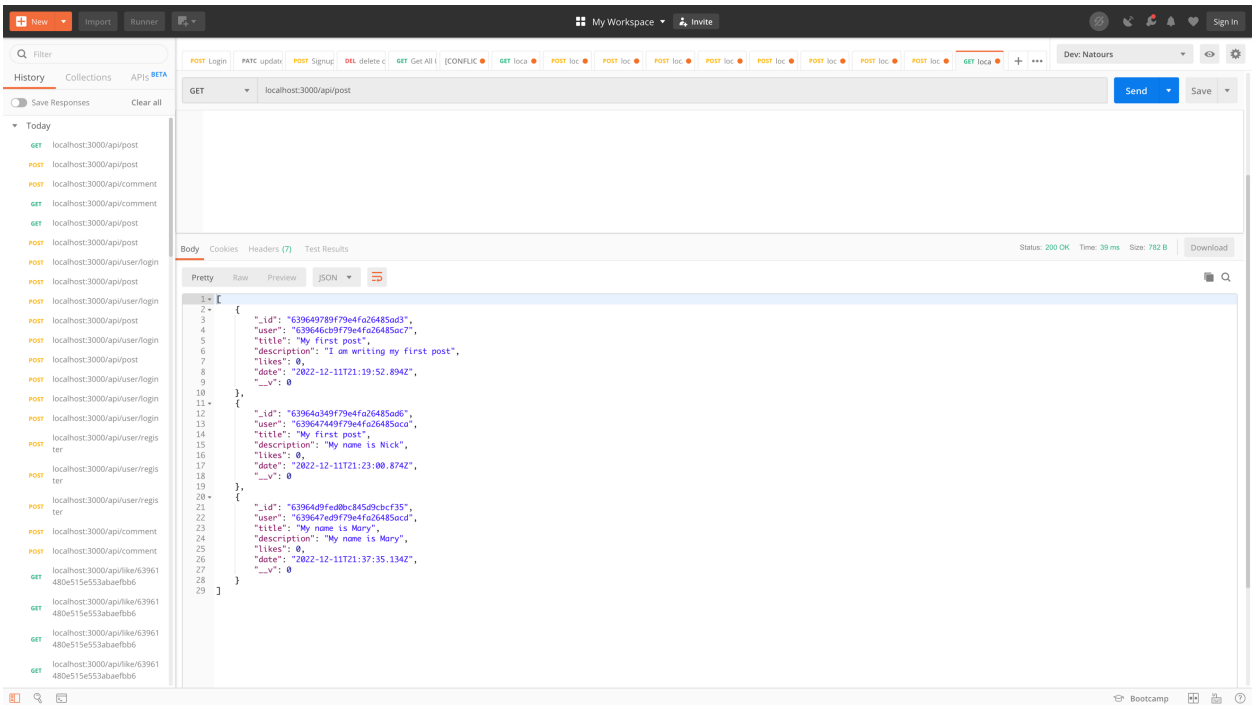
TC5:


localhost:3000/api/post
POST
localhost:3000/api/post
Send
Save
{
"user": "639647449f79e4fa26485aca",
"title": "My first post",
"description": "My name is Nick"
}
Status: 200 OK
Time: 52 ms
Size: 412 B
{
"user": "639647449f79e4fa26485aca",
"title": "My first post",
"description": "My name is Nick",
"likes": 0,
"_id": "63964a349f79e4fa26485ad6",
"date": "2022-12-11T21:23:00.874Z",
"__v": 0
}

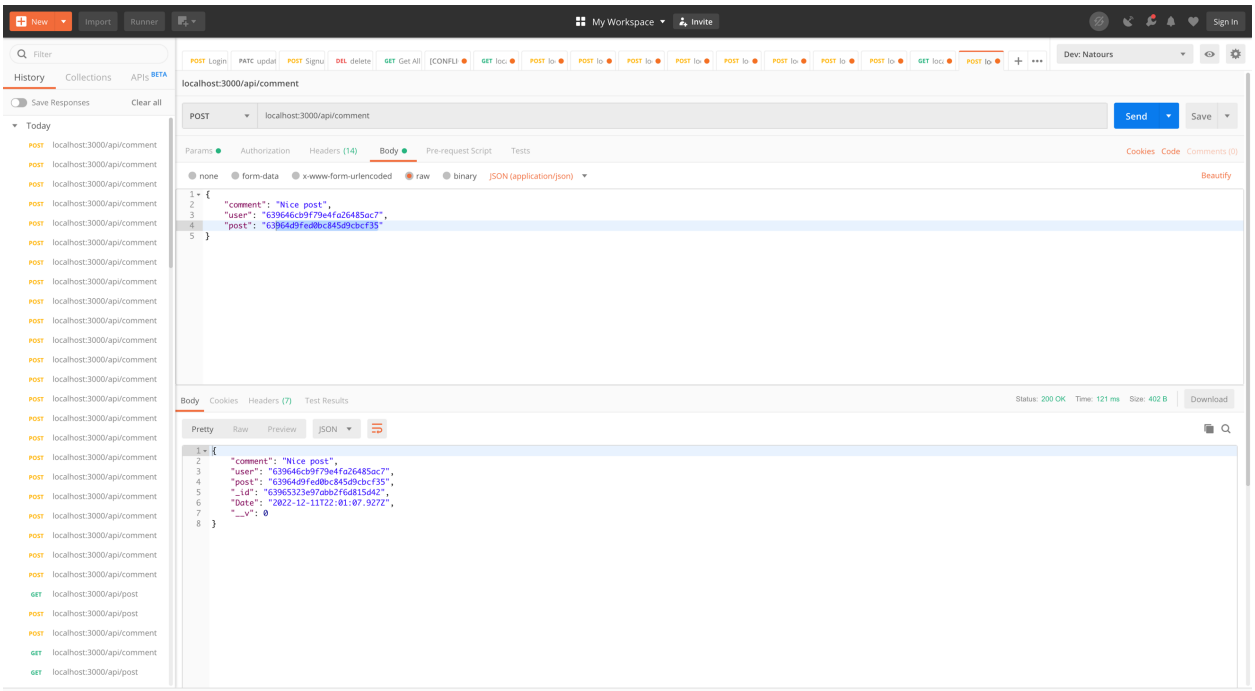
**TC6:**

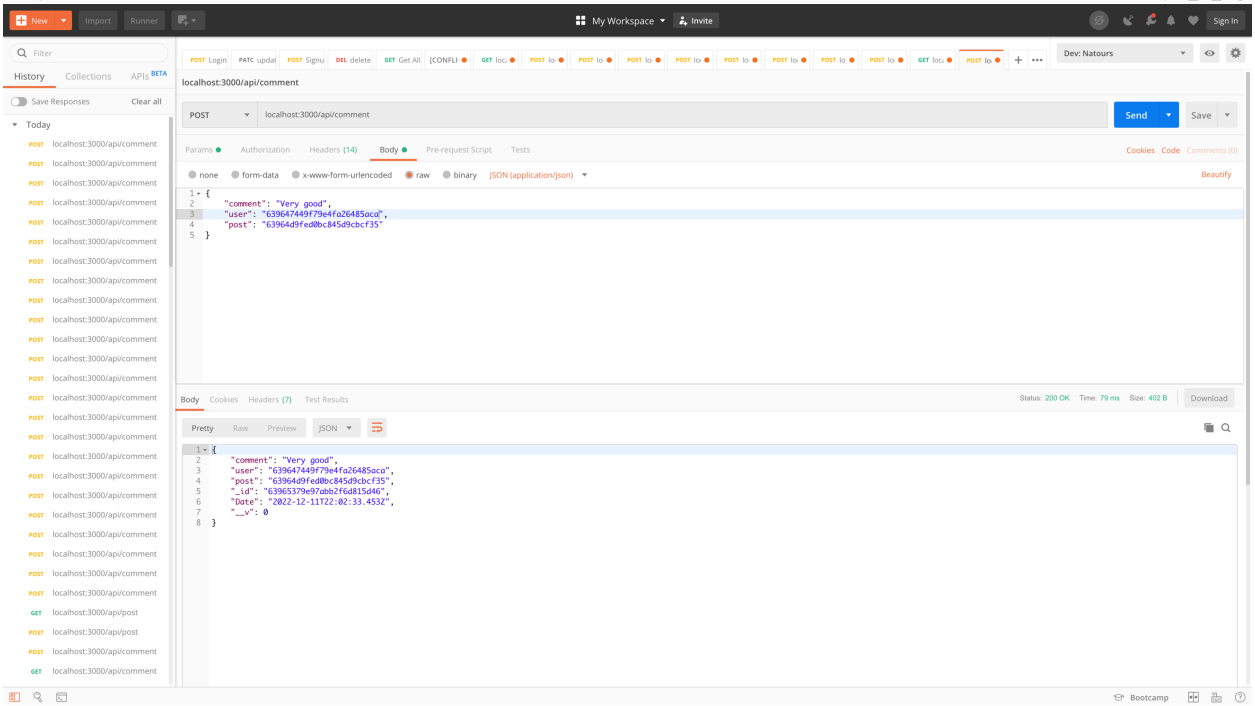

New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/post
POST
localhost:3000/api/post
Send
Save
Params
Authorization
Headers (14)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 75 ms
Size: 414 B
Download
Pretty
Raw
Preview
JSON
{
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary",
"likes": 0,
"_id": "63964d9fed0bc845d9cbcf35",
"date": "2022-12-11T21:37:35.134Z",
"__v": 0
}
Bootcamp

## TC7:


New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
Dev: Natours
GET
localhost:3000/api/post
Send
Save
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 39 ms
Size: 782 B
Download
Pretty
Raw
Preview
JSON
[
{
"_id": "639649789f79e4fa26485ad3",
"user": "639646cb9f79e4fa26485ac7",
"title": "My first post",
"description": "I am writing my first post",
"likes": 0,
"date": "2022-12-11T21:19:52.894Z",
"__v": 0
},
{
"_id": "63964a349f79e4fa26485ad6",
"user": "639647449f79e4fa26485aca",
"title": "My first post",
"description": "My name is Nick",
"likes": 0,
"date": "2022-12-11T21:23:00.874Z",
"__v": 0
},
{
"_id": "63964d9fed0bc845d9cbcf35",
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary",
"likes": 0,
"date": "2022-12-11T21:37:35.134Z",
"__v": 0
}
]
Bootcamp

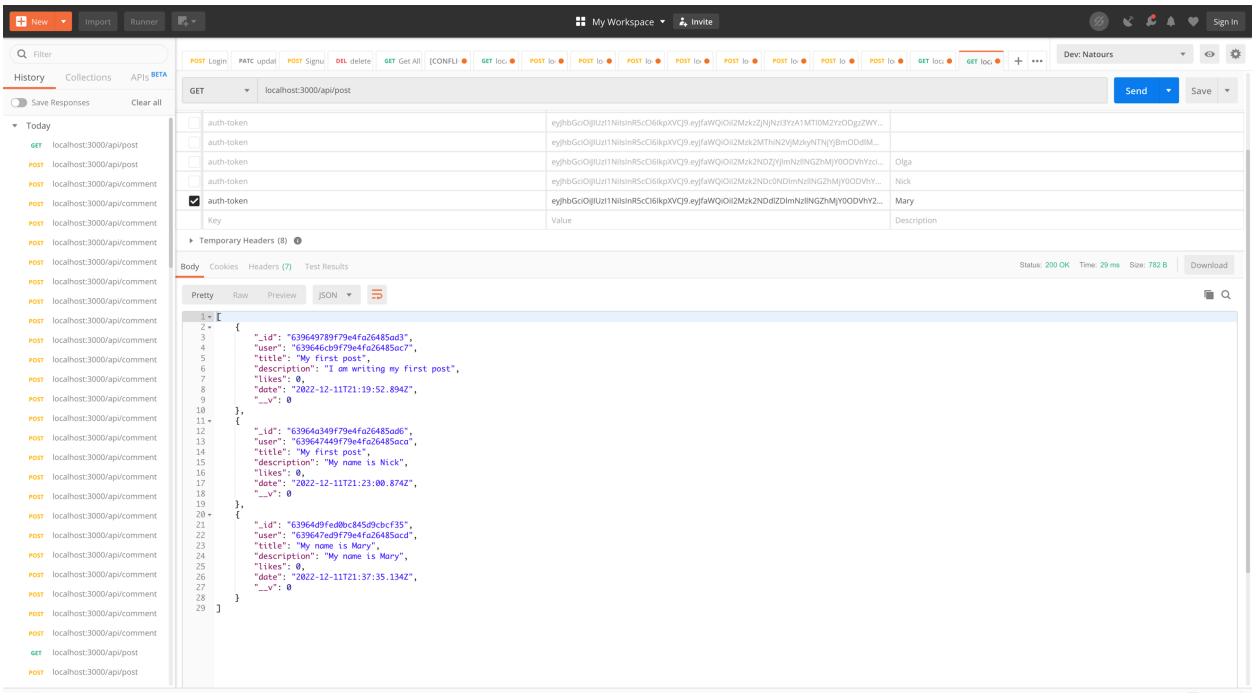
## TC8:


New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/comment
Dev: Natours
POST
localhost:3000/api/comment
Send
Save
Params
Authorization
Headers (14)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"comment": "Nice post",
"user": "639646cb9f79e4fa26485ac7",
"post": "63964d9fed0bc845d9cbcf35"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 121 ms
Size: 402 B
Download
Pretty
Raw
Preview
JSON
{
"comment": "Nice post",
"user": "639646cb9f79e4fa26485ac7",
"post": "63964d9fed0bc845d9cbcf35",
"_id": "63965323e97abb2f6d815d42",
"Date": "2022-12-11T22:01:07.927Z",
"__v": 0
}
Bootcamp

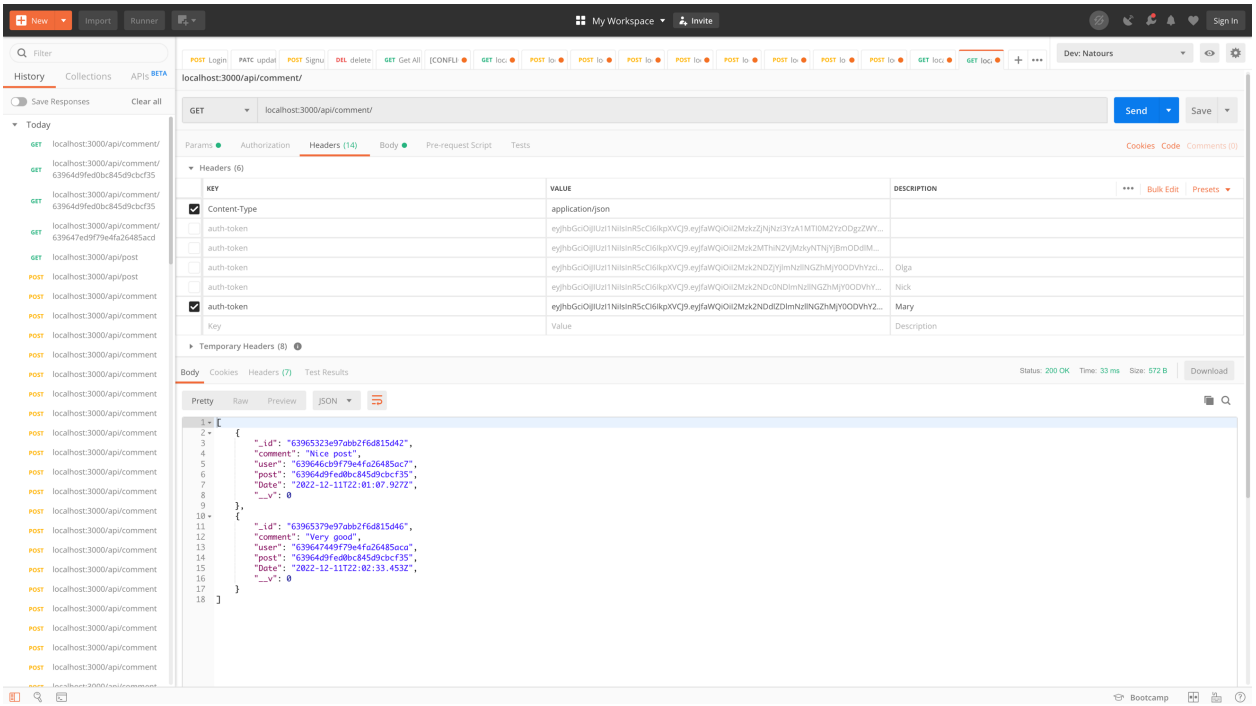

New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/comment
Dev: Natours
POST
localhost:3000/api/comment
Send
Save
Params
Authorization
Headers (14)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"comment": "Very good",
"user": "639647449f79e4fa26485aca",
"post": "63964d9fed0bc845d9cbcf35"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 79 ms
Size: 402 B
Download
Pretty
Raw
Preview
JSON
{
"comment": "Very good",
"user": "639647449f79e4fa26485aca",
"post": "63964d9fed0bc845d9cbcf35",
"_id": "63965379e97abb2f6d815d46",
"Date": "2022-12-11T22:02:33.453Z",
"__v": 0
}
Bootcamp

## TC9:

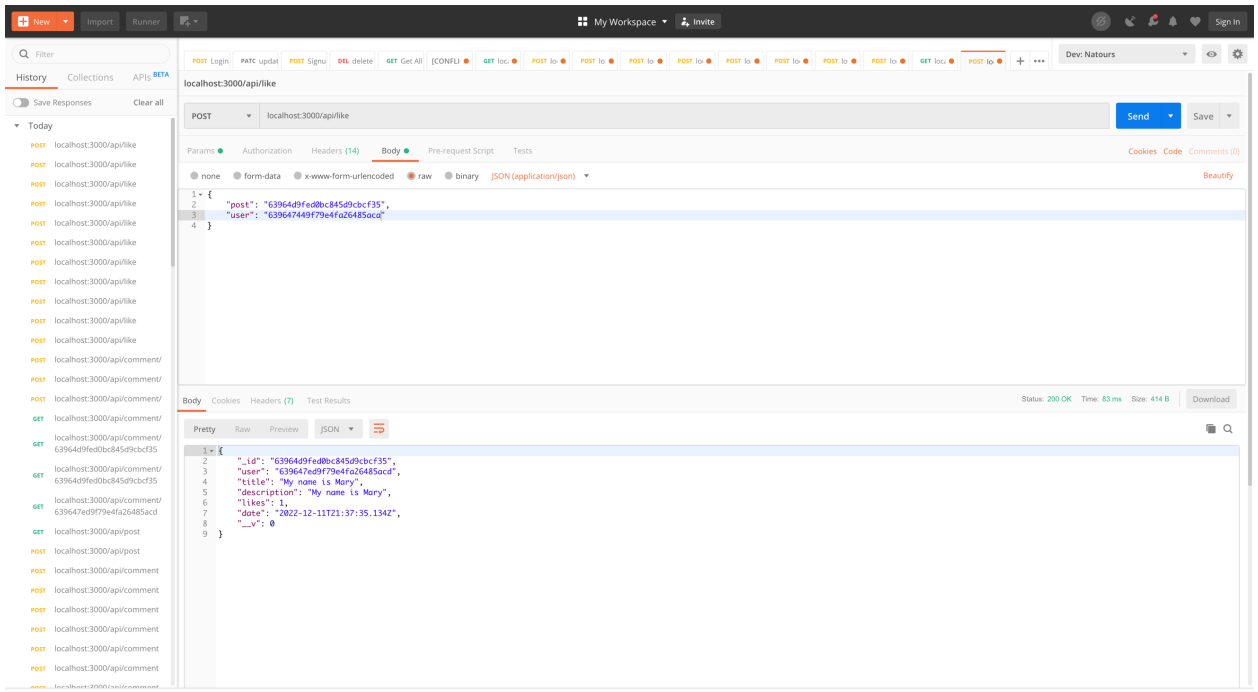
## TC10:

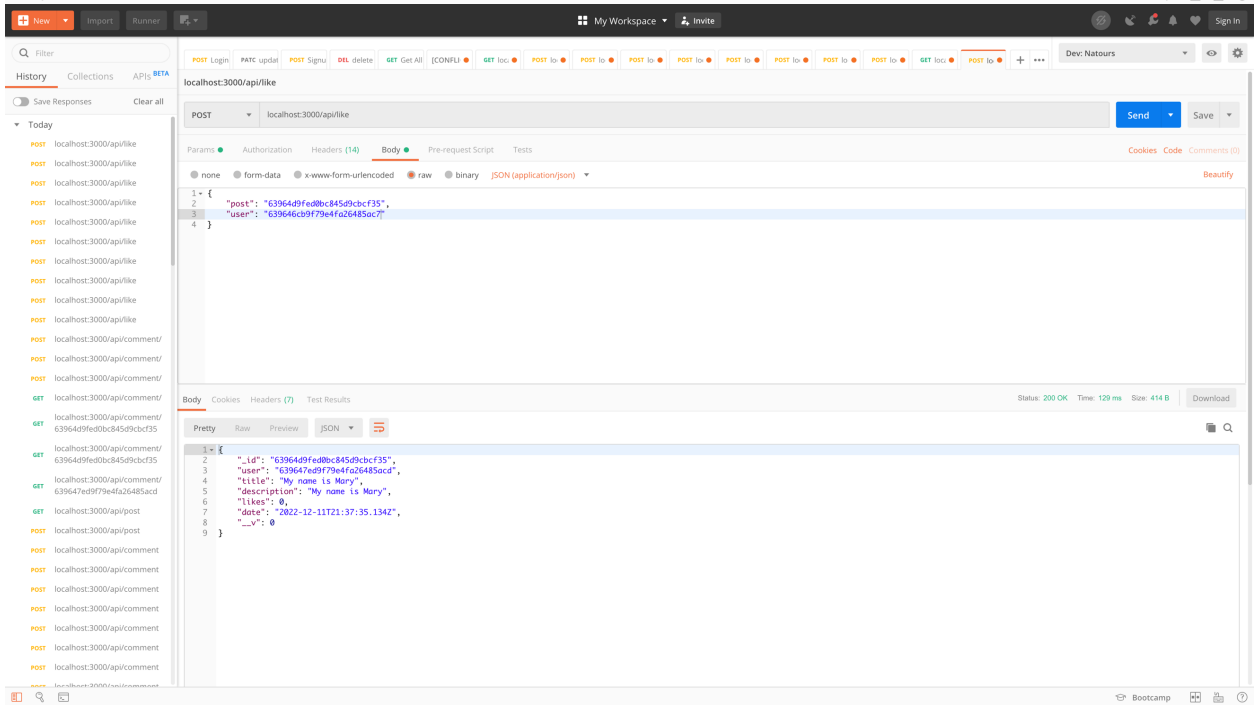

GET
localhost:3000/api/post
Send
Save
Body
Pretty
Raw
Preview
JSON
[
{
"_id": "639649789f79e4fa26485ad3",
"user": "639646cb9f79e4fa26485ac7",
"title": "My first post",
"description": "I am writing my first post",
"likes": 0,
"date": "2022-12-11T21:19:52.894Z",
"__v": 0
},
{
"_id": "63964a349f79e4fa26485ad6",
"user": "639647449f79e4fa26485aca",
"title": "My first post",
"description": "My name is Nick",
"likes": 0,
"date": "2022-12-11T21:23:00.874Z",
"__v": 0
},
{
"_id": "63964d9fed00c845d9cbcf35",
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary",
"likes": 0,
"date": "2022-12-11T21:37:35.134Z",
"__v": 0
}
]

## TC11:

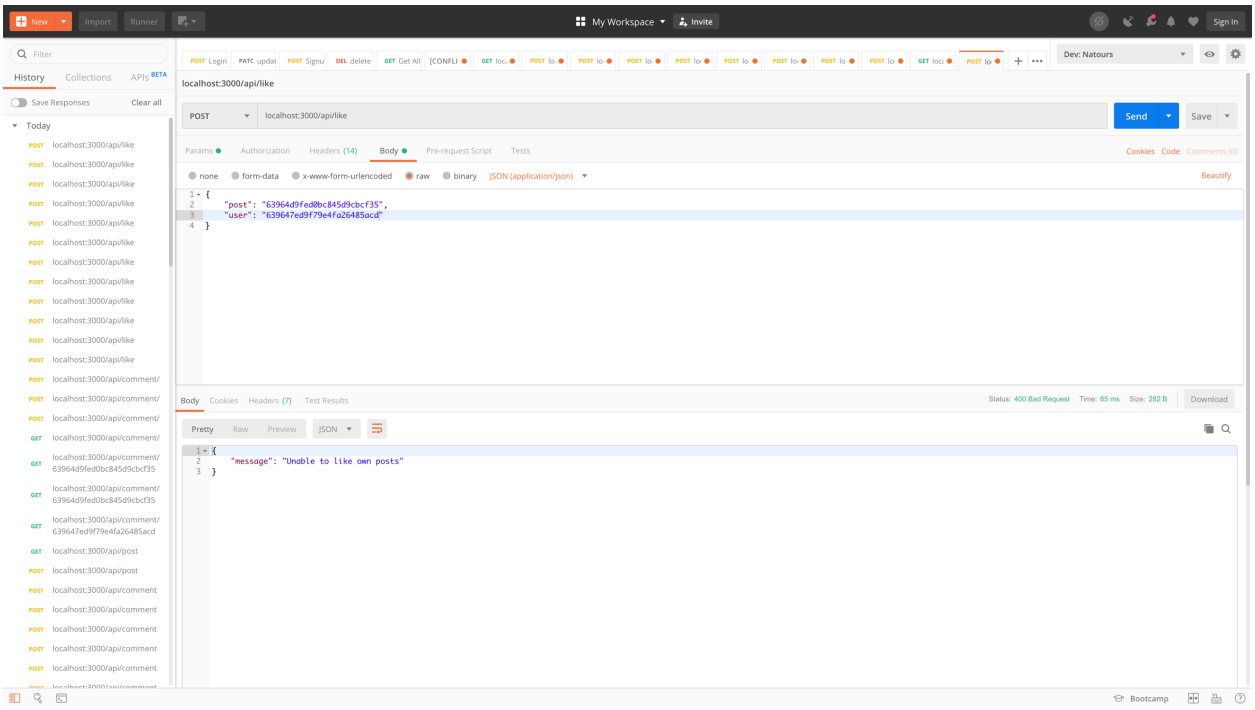

localhost:3000/api/comment/
GET
localhost:3000/api/comment/
Send
Save
Body
Pretty
Raw
Preview
JSON
[
{
"_id": "63965323e97abb2f6d815d42",
"comment": "Nice post",
"user": "639646cb9f79e4fa26485ac7",
"post": "63964d9fed00c845d9cbcf35",
"Date": "2022-12-11T22:01:07.927Z",
"__v": 0
},
{
"_id": "63965379e97abb2f6d815d46",
"comment": "Very good",
"user": "639647449f79e4fa26485aca",
"post": "63964d9fed00c845d9cbcf35",
"Date": "2022-12-11T22:02:33.453Z",
"__v": 0
}
]

## TC12:

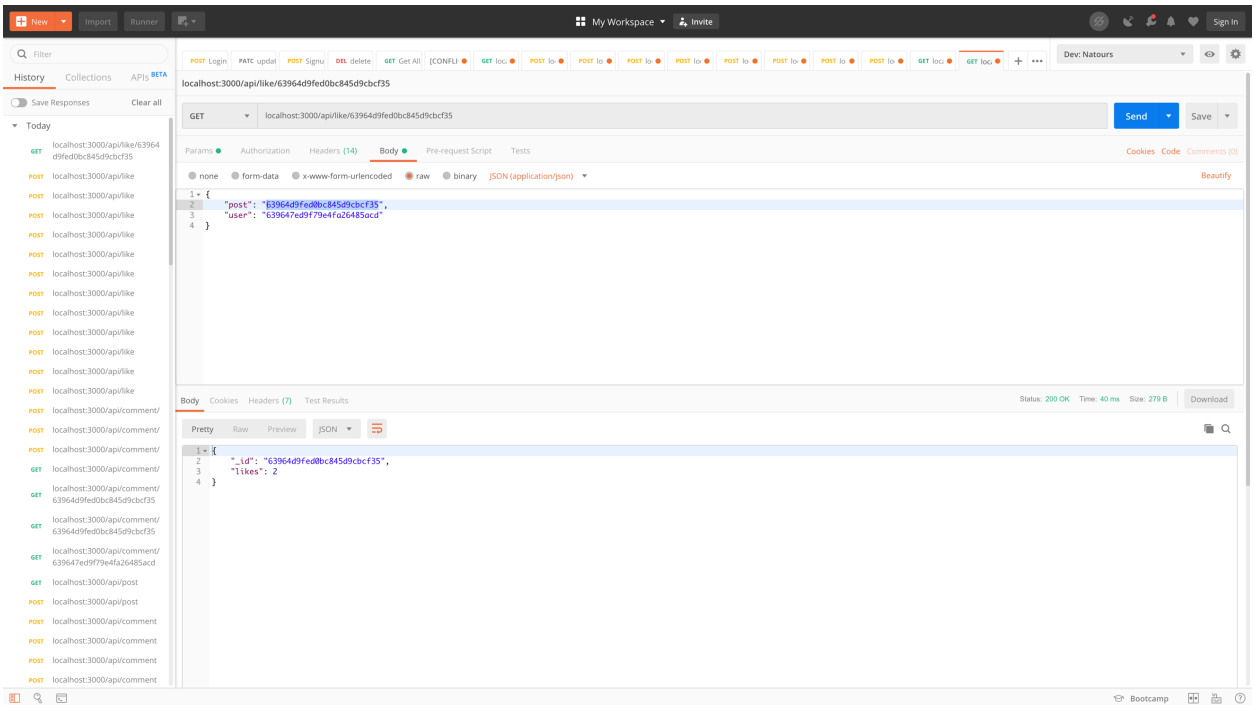

New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/like
POST
Send
Save
Params
Authorization
Headers (14)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"post": "63964d9fed0bc845d9cbcf35",
"user": "639647449f79e4fa26485aca"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 83 ms
Size: 414 B
Download
Pretty
Raw
Preview
JSON
{
"_id": "63964d9fed0bc845d9cbcf35",
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary",
"likes": 1,
"date": "2022-12-11T21:37:35.134Z",
"__v": 0
}
Bootcamp


New
Import
Runner
My Workspace
Invite
Sign In
History
Collections
APIs BETA
Save Responses
Clear all
Today
localhost:3000/api/like
POST
Send
Save
Params
Authorization
Headers (14)
Body
Pre-request Script
Tests
Cookies
Code
Comments (0)
none
form-data
x-www-form-urlencoded
raw
binary
JSON (application/json)
Beautify
{
"post": "63964d9fed0bc845d9cbcf35",
"user": "639646cb9f79e4fa26485ac7"
}
Body
Cookies
Headers (7)
Test Results
Status: 200 OK
Time: 129 ms
Size: 414 B
Download
Pretty
Raw
Preview
JSON
{
"_id": "63964d9fed0bc845d9cbcf35",
"user": "639647ed9f79e4fa26485acd",
"title": "My name is Mary",
"description": "My name is Mary",
"likes": 0,
"date": "2022-12-11T21:37:35.134Z",
"__v": 0
}
Bootcamp

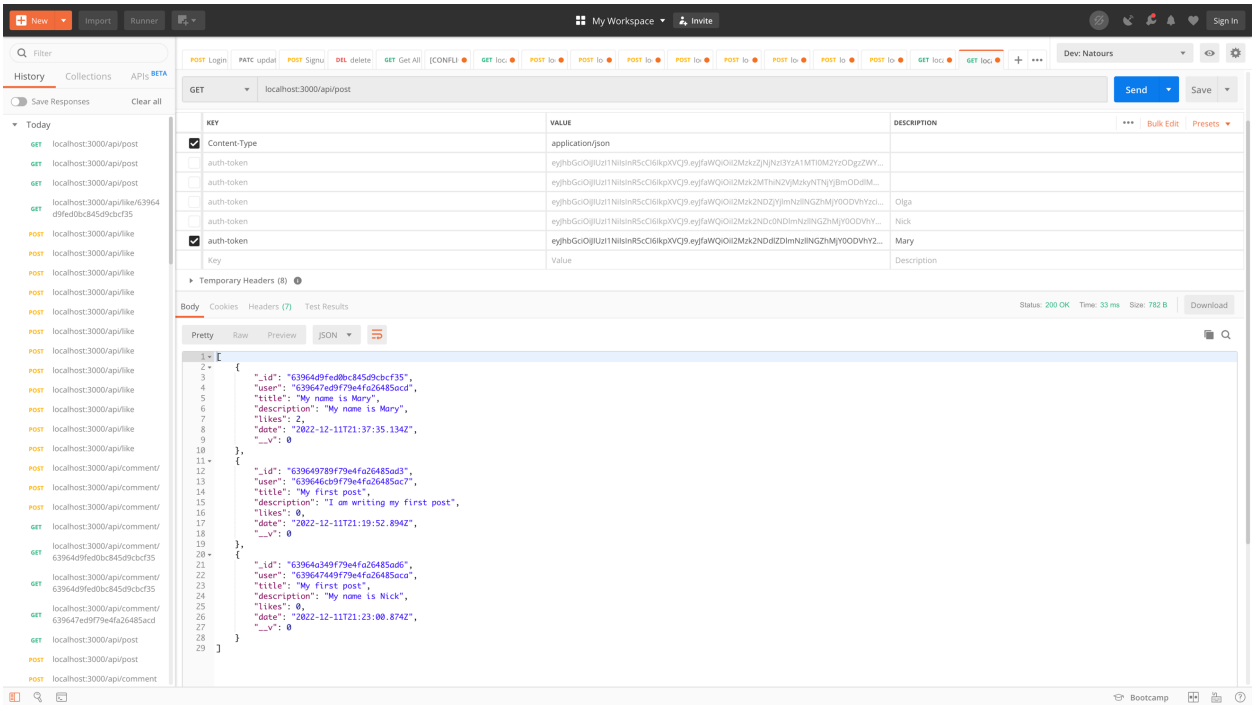
## TC13:


localhost:3000/api/like
POST
localhost:3000/api/like
Send
Save
{
"post": "63964d9fed0bc845d9cbcf35",
"user": "639647ed9f79e4fa26485acd"
}
Status: 400 Bad Request
Time: 65 ms
Size: 282 B
{
"message": "Unable to like own posts"
}

## TC14:


localhost:3000/api/like/63964d9fed0bc845d9cbcf35
GET
localhost:3000/api/like/63964d9fed0bc845d9cbcf35
Send
Save
{
"post": "63964d9fed0bc845d9cbcf35",
"user": "639647ed9f79e4fa26485acd"
}
Status: 200 OK
Time: 40 ms
Size: 279 B
{
"_id": "63964d9fed0bc845d9cbcf35",
"likes": 2
}

**TC15:**




**References:**


medium.com, How to increment a number value in mongoose, available online at: https://medium.com/@salonimalhotra1ind/how-to-increment-a-number-value-in-mongoose-785066ba09d8
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