Web Applications — Course Project

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Documentation

Node.js version: v12.13.0

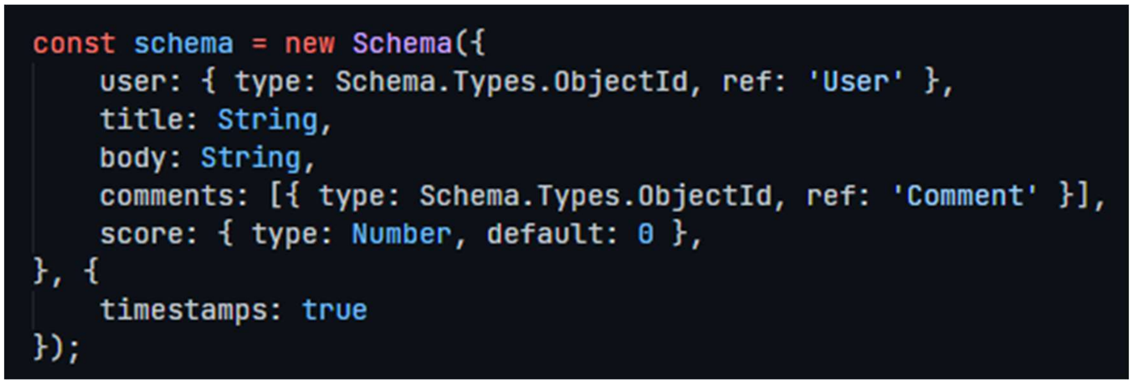
npm version: 8.1.2

Backend

The backend is implemented using *Node.js* with *Express.js*. Additionally, the project is using *MongoDB* as the database system along with *Mongoose* library to communicate with the actual database. For the authentication JWT authorization and *Passport.js* library is used. Passwords are encrypted using *bcrypt*, and all the requests are validated using *express-validator* (e.g., password length, required parameters).

Database Schema

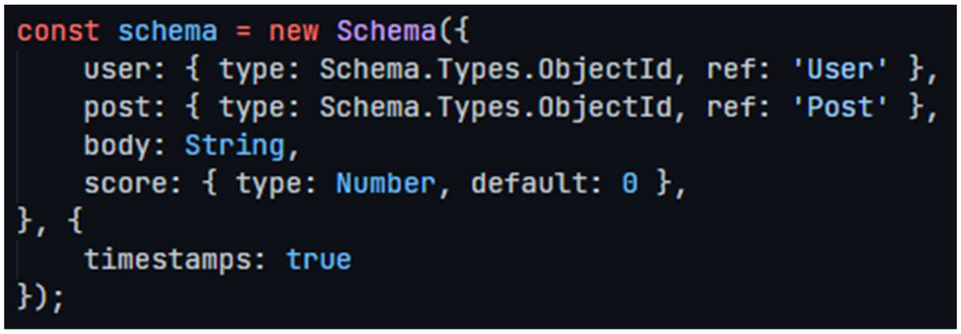
Posts aka questions:



```
const schema = new Schema({
    user: { type: Schema.Types.ObjectId, ref: 'User' },
    title: String,
    body: String,
    comments: [{ type: Schema.Types.ObjectId, ref: 'Comment' }],
    score: { type: Number, default: 0 },
}, {
    timestamps: true
});
```

Comments: score shows the total score for votes.

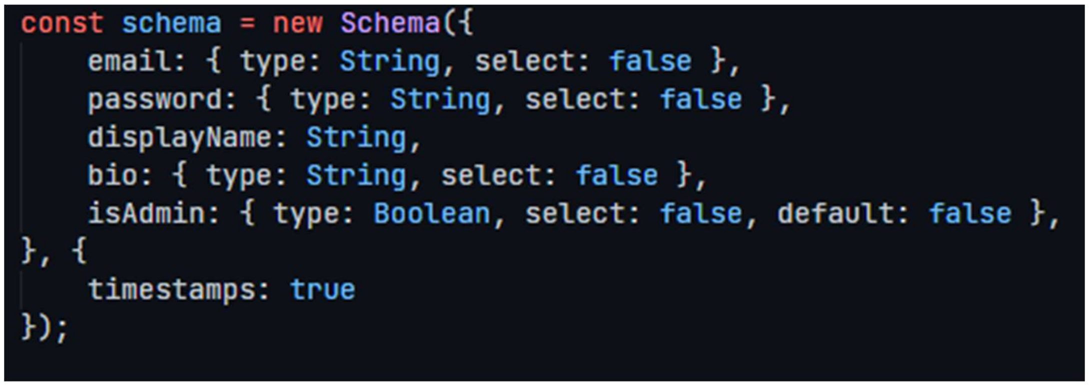
Comments aka answers:



```
const schema = new Schema({
    user: { type: Schema.Types.ObjectId, ref: 'User' },
    post: { type: Schema.Types.ObjectId, ref: 'Post' },
    body: String,
    score: { type: Number, default: 0 },
}, {
    timestamps: true
});
```

Comments: score shows the total score for votes.

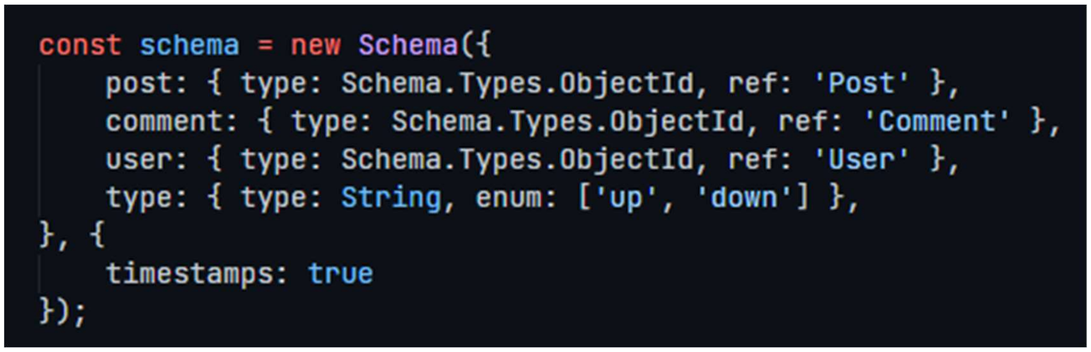
Users:



```
const schema = new Schema({
    email: { type: String, select: false },
    password: { type: String, select: false },
    displayName: String,
    bio: { type: String, select: false },
    isAdmin: { type: Boolean, select: false, default: false },
}, {
    timestamps: true
});
```

Comments: attributes that are only seldom needed are equipped with `select: false` -option, so they are not selected by default. Password validation: min length 8 characters, 1 lowercase letter, 1 uppercase letter, 1 number, and 1 symbol.

Votes:



```
const schema = new Schema({
    post: { type: Schema.Types.ObjectId, ref: 'Post' },
    comment: { type: Schema.Types.ObjectId, ref: 'Comment' },
    user: { type: Schema.Types.ObjectId, ref: 'User' },
    type: { type: String, enum: ['up', 'down'] },
}, {
    timestamps: true
});
```

Comments: votes for both comments and posts are using the same database model. If the vote is for a post, then the comment field is null and vice versa.

Frontend

The frontend is built entirely using *React* and some libraries are used to make things easier. *Material UI* library is used to make creating views much easier. Additionally, *react-time-ago* is used to display timestamps in human readable format. Questions and answer always display a timestamp that shows when the post was created. If the content has been edited by either the author or an admin, there will also be a timestamp showing when it was edited.

Markdown editor (*@uiw/react-md-editor*) is used to post content (questions and answers). It has rich functionality for example posting code, different text formatting, lists, images etc. For example, if one wanted to post JSX code with syntax highlighting, they would have to write

~~~
```jsx

[Write your code here]

```
~~~

The same system is being used on stackoverflow.

Installation

The project is divided into two parts: the backend and the frontend. They are under separate GitHub repositories.

Frontend: https://github.com/ce2kettu/wa_course_project_frontend

Backend: https://github.com/ce2kettu/wa_course_project_backend

Configuring

The backend needs `.env` file for configuring environment variables or they can also be supplied from elsewhere. There is an example file named `.env.example`, which contains:

```
JWT_SECRET=secret
PORT=5000
MONGOURL=mongodb://localhost:27017/testdb
```

The frontend app needs REACT_APP_API_URL environment variable for pointing the API base URL, or the default http://localhost:5000 is used. Do not include a trailing slash.

You also need to point to a valid MongoDB instance that is accessible. MONGOURL contains the connection string for connecting with Mongoose.

Running

After both projects are cloned, install the required packages using `npm install`. Do this for both projects. After that run `npm start` in both projects to get them running.

Deploying

To deploy the frontend, run `npm build` and serve the static contents under build folder on your website.

The backend can be started by `npm start`.

Demo app

Deployed demo backend: https://wa-course-project-backend.herokuapp.com

Deployed demo frontend: https://wa-course-project-frontend.herokuapp.com

Admin account

Email: admin@g.com

Password: IamAdmin123!

User Manual

You can browse content (questions and answers) without having to login. The home page displays all the posts available. You can then click on a user's name (applicable every else as well) to open their profile. Additionally, you can open the question by clicking on it. This will open a new view with the question and possible answers listed. On the righthand side of each question and comment, there is a score which depends on how other users have voted.

To register you click on the register button on the upper-right corner (or open drawer on mobile). Enter your proposed display name, email address and strong password (minimum length 8 characters, 1 lowercase letter, 1 uppercase letter, 1 number, and 1 symbol). After this you are redirected to the login page. Enter your credentials to login. You will be redirected to the home page after a successful login.

There is now a button "ask question" which you can use to post your question. It will open a page to fill required details. The content is entered in Markdown, refer to https://www.markdownguide.org/ to learn the syntax. Click submit to post your question. You are now redirected to your post, and you can edit it by clicking the "edit" button right under your title. Cancel editing by clicking the "discard" button. Similarly, if you post a comment,you can edit it as well in the same manner. To post a comment, find the "your answer" section and write your reply. Send it by clicking the "post answer" button. You can vote other people's content and your own by pressing the up-arrow for upvote and down-arrow for downvote. You can change your vote but not cancel it. Also, you can only vote once.

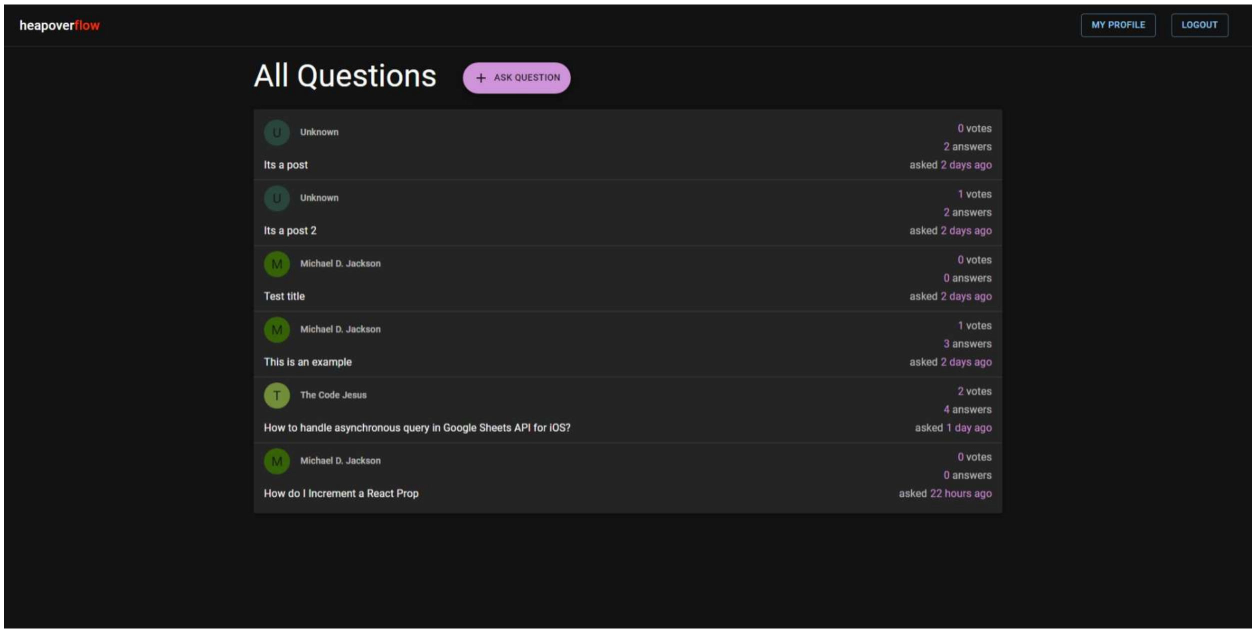
To logout, click on the logout button on the upper-right corner (or open drawer on mobile). You can also open your profile by clicking the My Profile button. This will open your profile, which you can edit and save the changes by clicking the "Save" button.

Admins can delete posts and comments by clicking the "delete" button next to the content. They can also edit it.

Proposed points for the project:

Feature	**Max points**
Basic features with well written documentation	25
Users can edit their own comments/posts	4

Utilization of a frontside framework, such as React, but you can also use Angular, Vue or some other	5
Use some highlight library for the code snippets, for example https://highlightjs.org/	2
Admin account with rights to edit all the post and comments and delete content (if a post is removed, all its comments should be removed too)	3
Vote (up or down) posts or comments (only one vote per user)	3
User can click username and see user profile page where name, register date, (user picture) and user bio is listed	2
Last edited timestamp is stored and shown with posts/comments	2
TOTAL POINTS	**46**
Custom feature: user can see if they have already voted content up or down (see Figure 16.). It is highlighted by either a green or a red arrow. It is a very useful feature since the user might forget if they have already voted.	2
Custom feature: user can change their vote. For example, if they have first voted up, they can change their vote to down. This is useful because the user might have accidentally clicked the wrong button.	1
Custom feature: user can edit display name and bio in their profile (see Figure 7.). This is useful because the user might want to update their name and bio because of changes in their lives.	1
TOTAL POINTS WITH CUSTOM FEATURES	**50**



All Questions

Unknown
Its a post
0 votes
2 answers
asked 2 days ago

Unknown
Its a post 2
1 votes
2 answers
asked 2 days ago

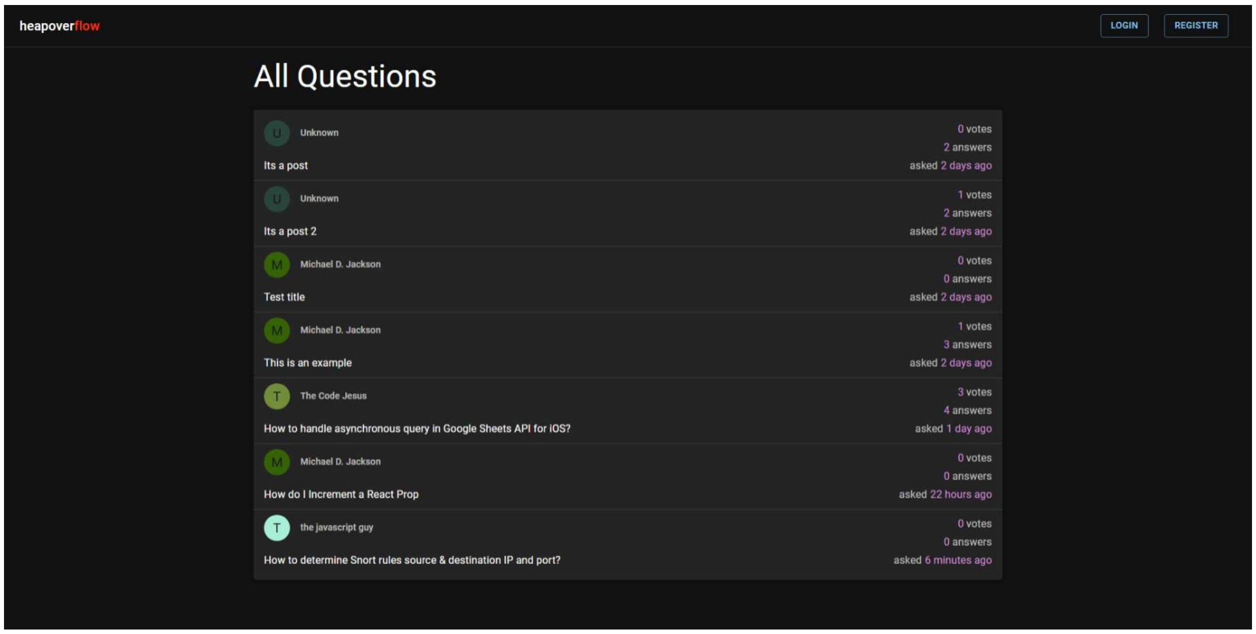
Michael D. Jackson
Test title
0 votes
0 answers
asked 2 days ago

Michael D. Jackson
This is an example
1 votes
3 answers
asked 2 days ago

The Code Jesus
How to handle asynchronous query in Google Sheets API for iOS?
2 votes
4 answers
asked 1 day ago

Michael D. Jackson
How do I Increment a React Prop
0 votes
0 answers
asked 22 hours ago

Figure 1. Home page (user is logged in)



All Questions

Unknown
Its a post
0 votes
2 answers
asked 2 days ago

Unknown
Its a post 2
1 votes
2 answers
asked 2 days ago

Michael D. Jackson
Test title
0 votes
0 answers
asked 2 days ago

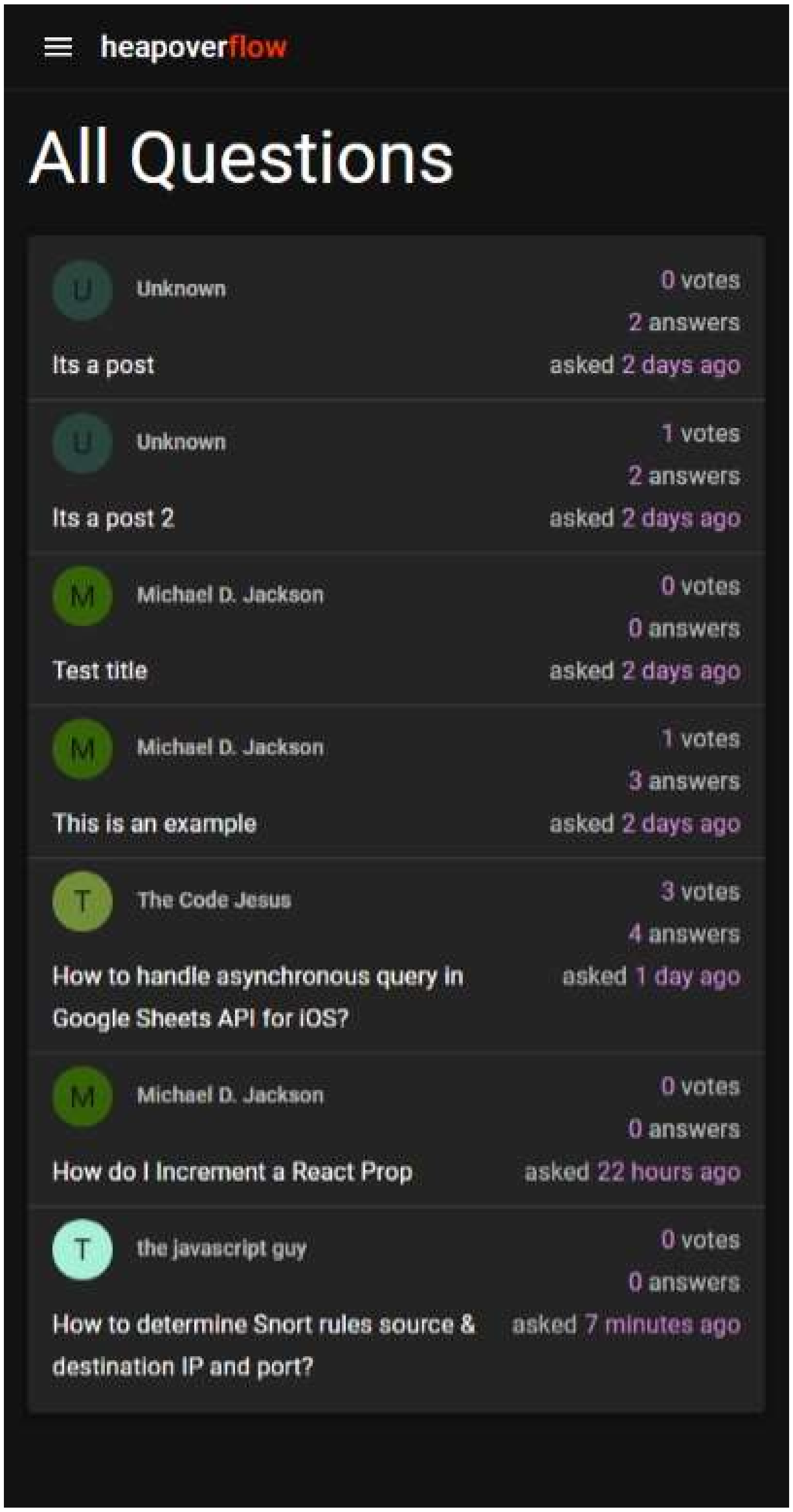
Michael D. Jackson
This is an example
1 votes
3 answers
asked 2 days ago

The Code Jesus
How to handle asynchronous query in Google Sheets API for iOS?
3 votes
4 answers
asked 1 day ago

Michael D. Jackson
How do I Increment a React Prop
0 votes
0 answers
asked 22 hours ago

the javascript guy
How to determine Snort rules source & destination IP and port?
0 votes
0 answers
asked 6 minutes ago

Figure 2. Home page (user is not authenticated)


heapoverflow

All Questions

Unknown
0 votes
2 answers
Its a post
asked 2 days ago

Unknown
1 votes
2 answers
Its a post 2
asked 2 days ago

Michael D. Jackson
0 votes
0 answers
Test title
asked 2 days ago

Michael D. Jackson
1 votes
3 answers
This is an example
asked 2 days ago

The Code Jesus
3 votes
4 answers
How to handle asynchronous query in Google Sheets API for iOS?
asked 1 day ago

Michael D. Jackson
0 votes
0 answers
How do I Increment a React Prop
asked 22 hours ago

the javascript guy
0 votes
0 answers
How to determine Snort rules source & destination IP and port?
asked 7 minutes ago

Figure 3. Home page on mobile devices

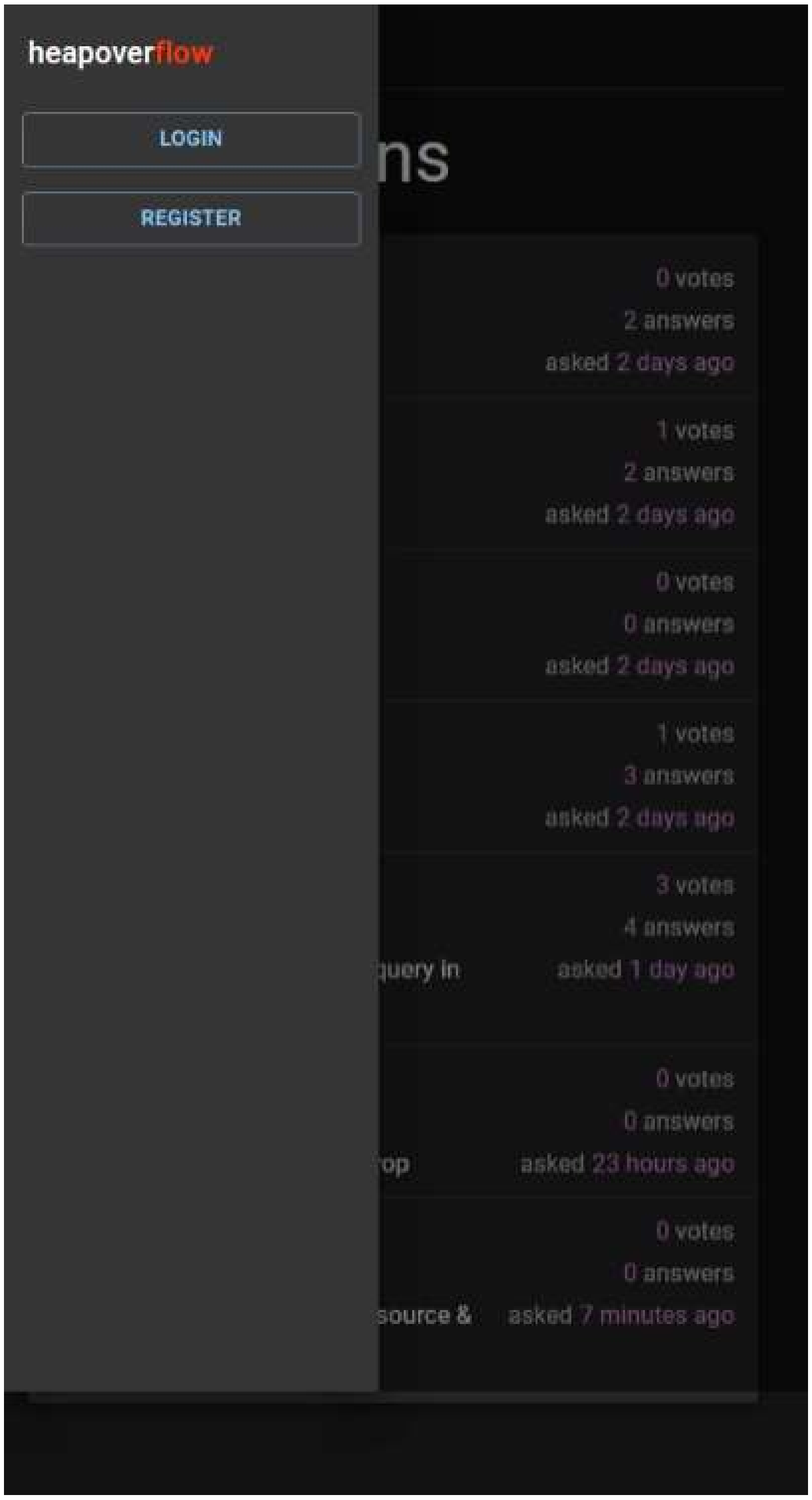


Figure 4. Mobile drawer for navigation (unauthenticated)

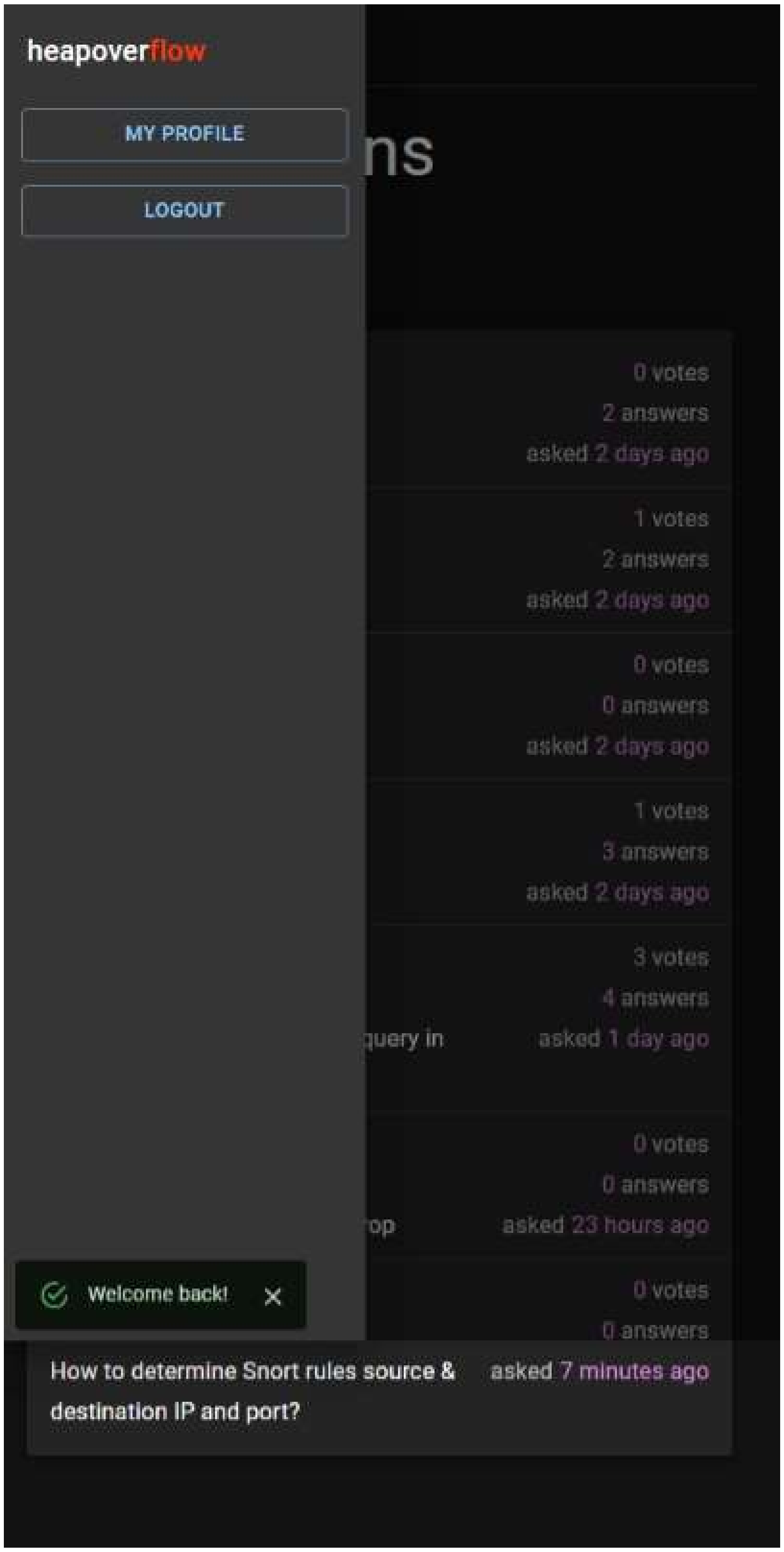


Figure 5. Mobile drawer for navigation (authenticated)

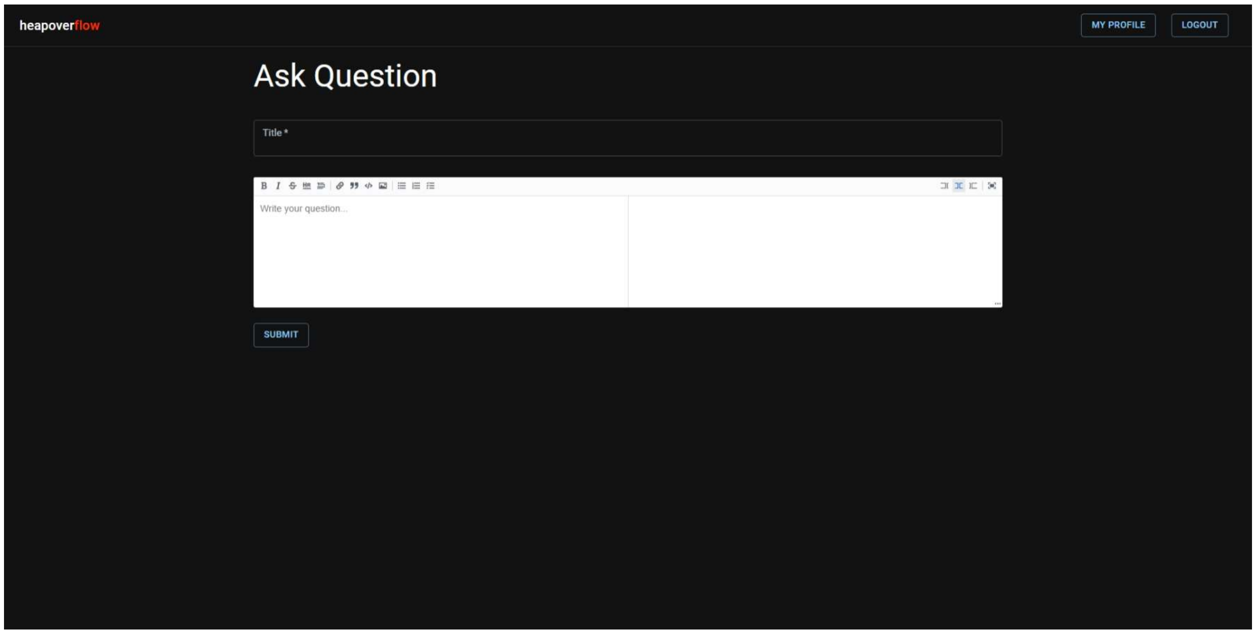
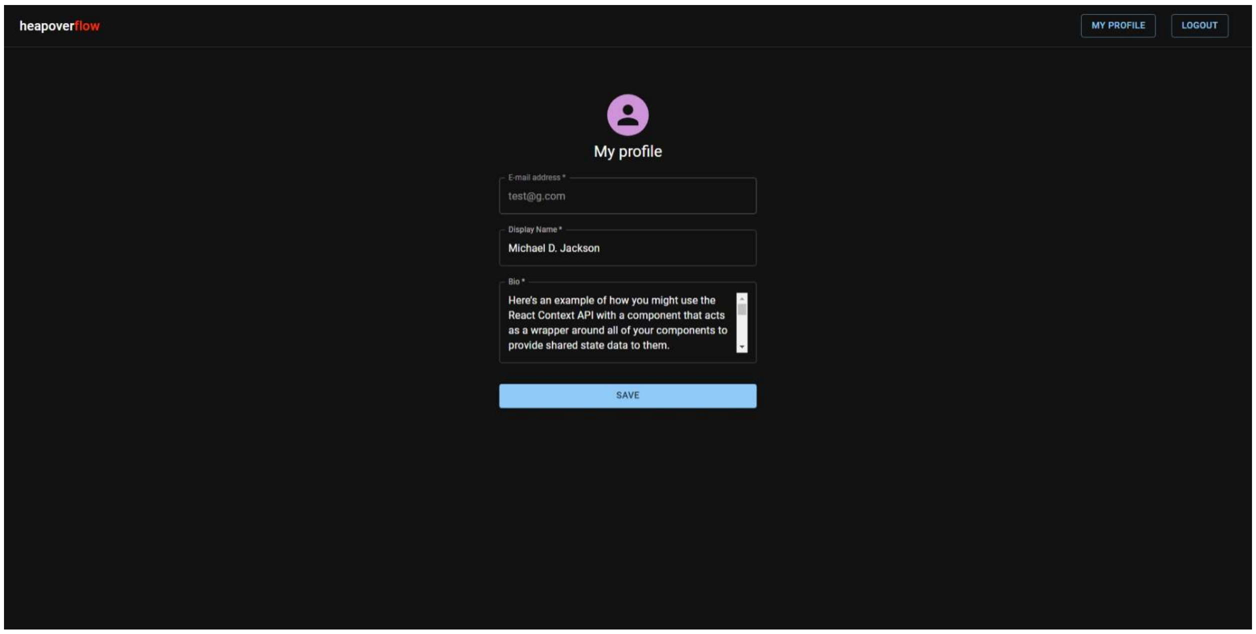


Figure 6. Page for asking a new question



test@g.com

Michael D. Jackson

Here's an example of how you might use the React Context API with a component that acts as a wrapper around all of your components to provide shared state data to them.

Figure 7. User viewing their own profile

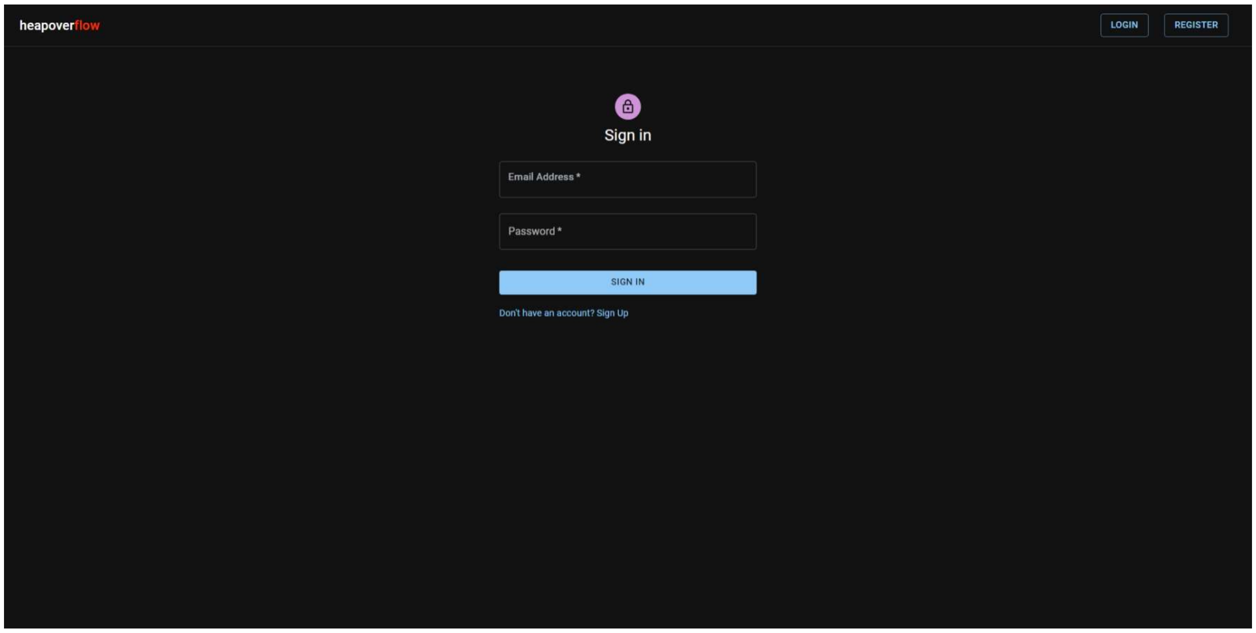


Figure 8. Login page

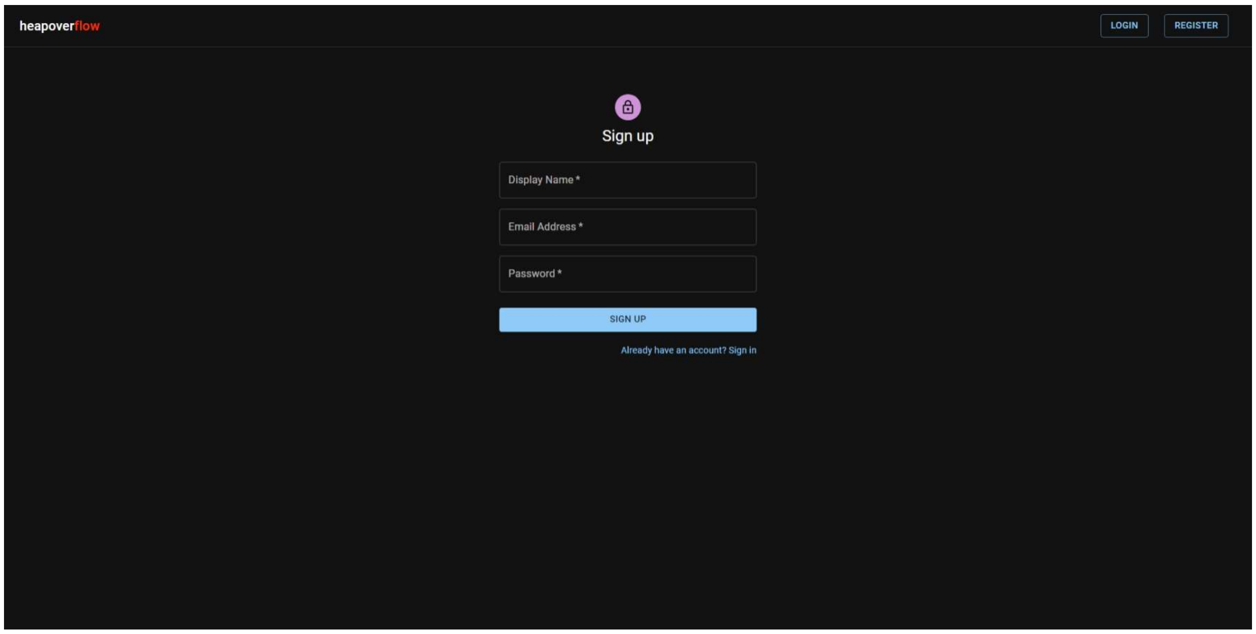
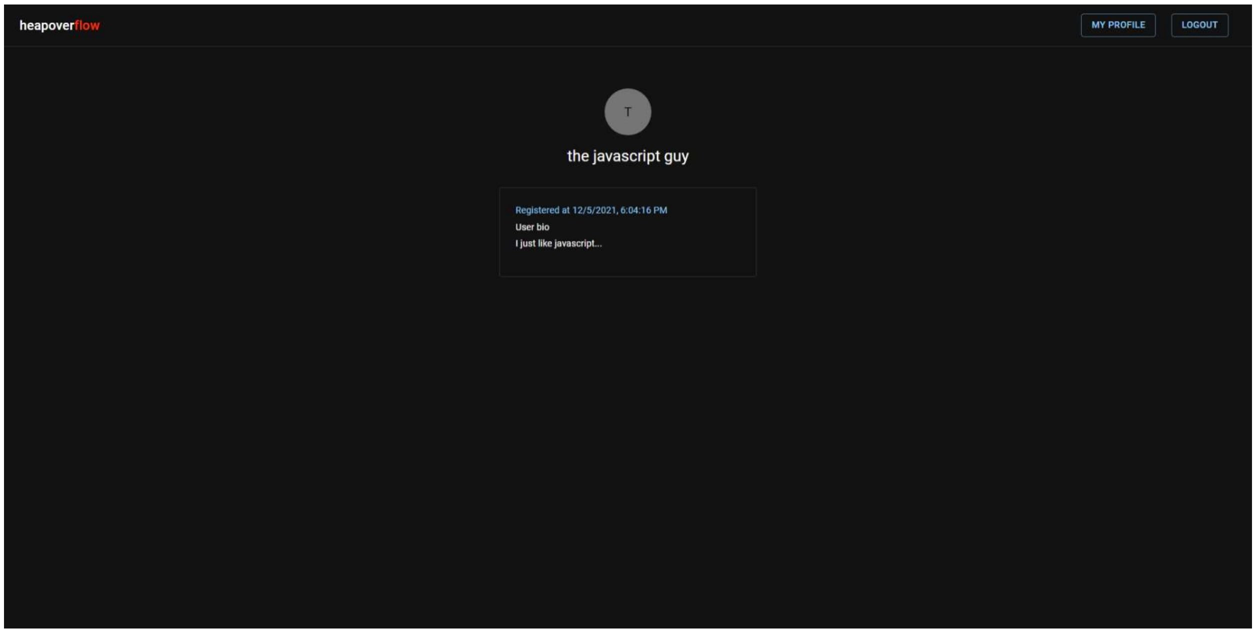


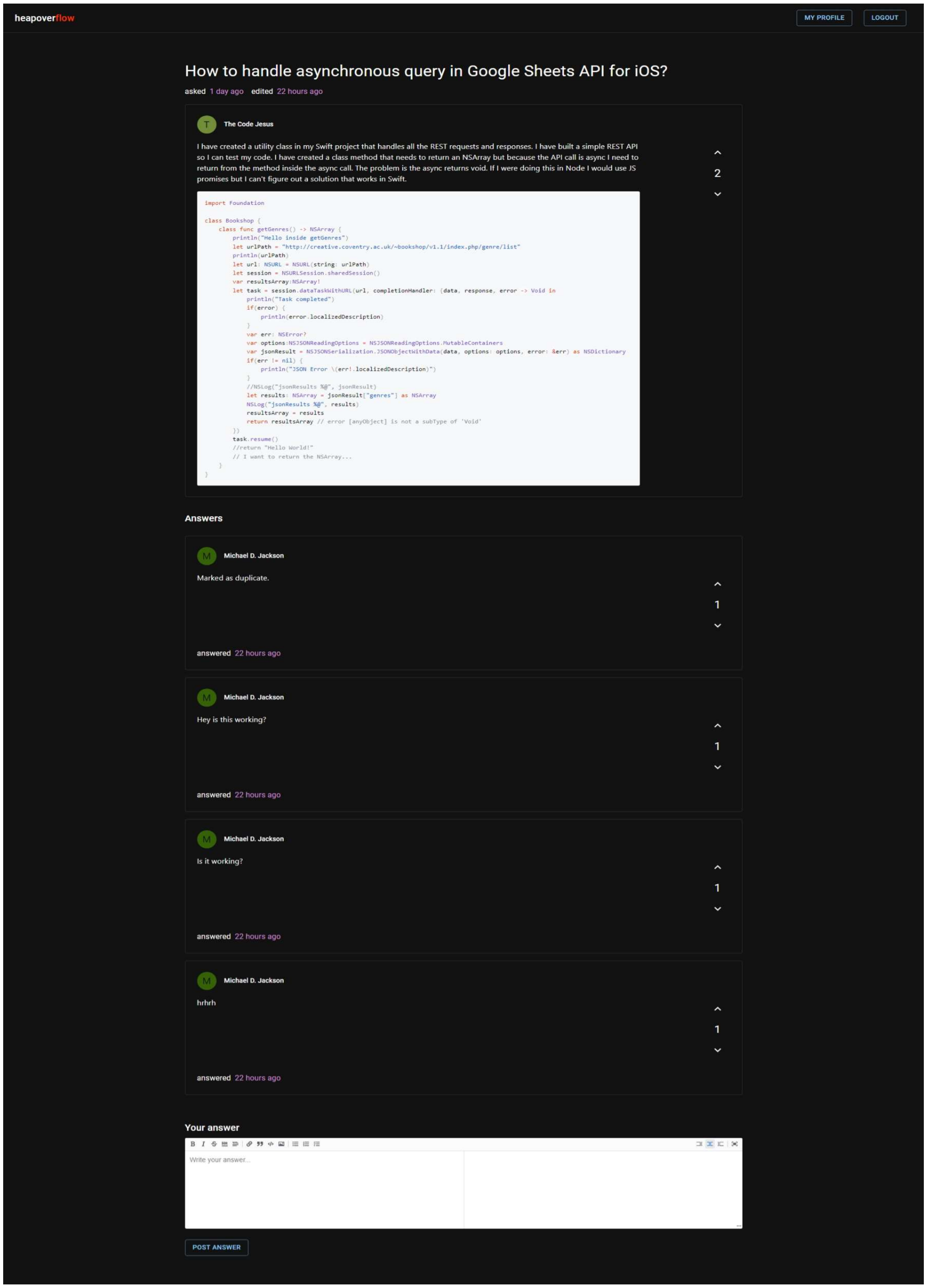
Figure 9. Registration page



the javascript guy

Registered at 12/5/2021, 6:04:16 PM
User bio
I just like javascript...

Figure 10. Viewing another user’s profile



How to handle asynchronous query in Google Sheets API for iOS?

asked 1 day ago edited 22 hours ago

The Code Jesus

I have created a utility class in my Swift project that handles all the REST requests and responses. I have built a simple REST API so I can test my code. I have created a class method that needs to return an NSArray but because the API call is async I need to return from the method inside the async call. The problem is the async returns void. If I were doing this in Node I would use JS promises but I can't figure out a solution that works in Swift.

2

```
import Foundation

class Bookshop {
    class func getGenres() -> NSArray {
        println("Hello inside getGenres")
        let urlPath = "http://creative.coventry.ac.uk/~bookshop/v1.1/index.php/genre/list"
        println(urlPath)
        let url: NSURL = NSURL(string: urlPath)
        let session = NSURLSession.sharedSession()
        var resultsArray:NSArray!
        let task = session.dataTaskWithURL(url, completionHandler: {data, response, error -> Void in
            println("Task completed")
            if(error) {
                println(error.localizedDescription)
            }
            var err: NSError?
            var options:NSJSONReadingOptions = NSJSONReadingOptions.MutableContainers
            var jsonResult = NSJSONSerialization.JSONObjectWithData(data, options: options, error: &err) as NSDictionary
            if(err != nil) {
                println("JSON Error \(err!.localizedDescription)")
            }
            //NSLog("jsonResults %@", jsonResult)
            let results: NSArray = jsonResult["genres"] as NSArray
            NSLog("jsonResults %@", results)
            resultsArray = results
            return resultsArray // error [anyObject] is not a subType of 'Void'
        })
        task.resume()
        //return "Hello World!"
        // I want to return the NSArray...
    }
}
```

Answers

Michael D. Jackson

Marked as duplicate.

1

answered 22 hours ago

Michael D. Jackson

Hey is this working?

1

answered 22 hours ago

Michael D. Jackson

Is it working?

1

answered 22 hours ago

Michael D. Jackson

hrhrh

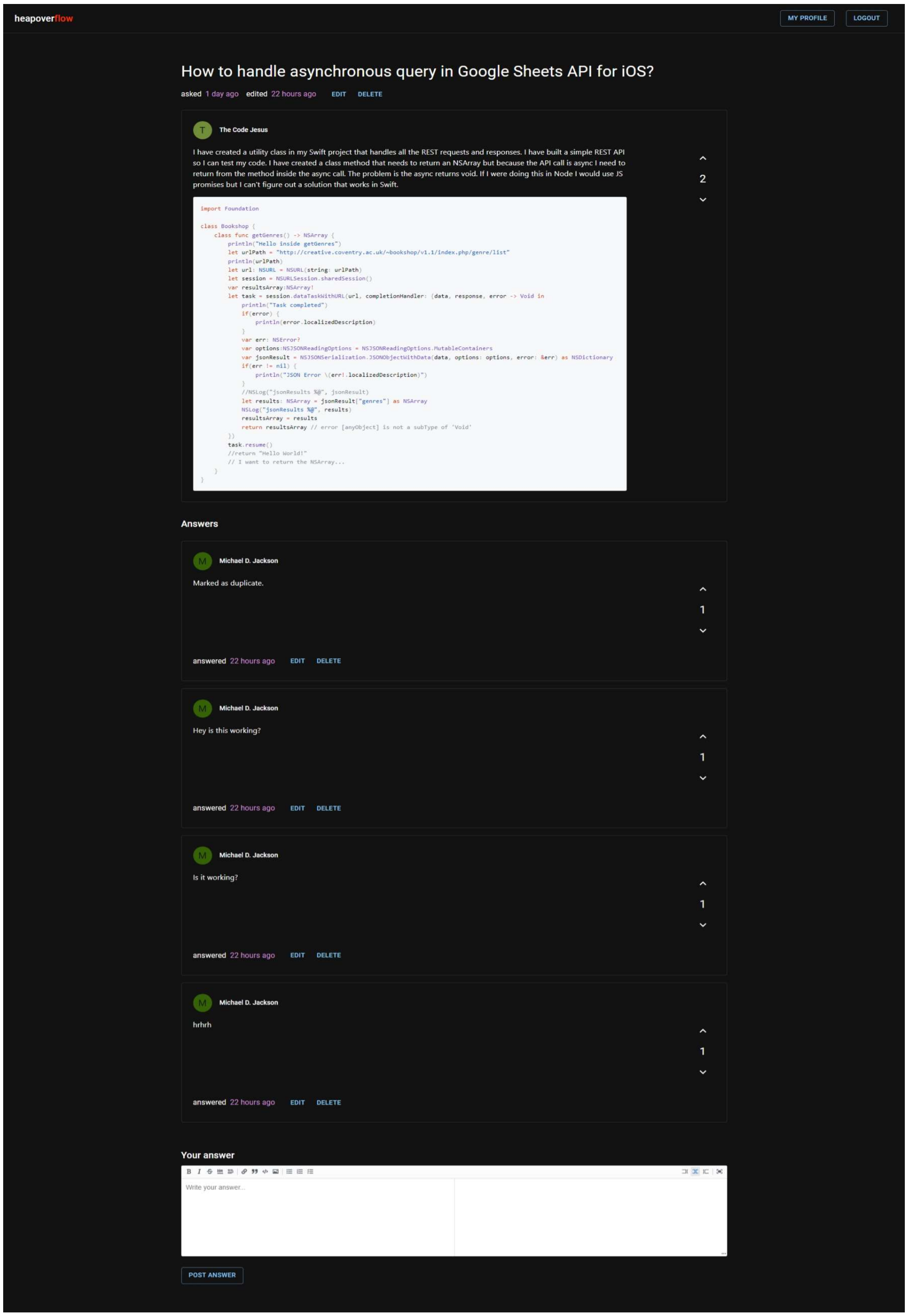
1

answered 22 hours ago

Your answer

Write your answer...

Figure 12. Opening a question for details



How to handle asynchronous query in Google Sheets API for iOS?

asked 1 day ago edited 22 hours ago EDIT DELETE

The Code Jesus

I have created a utility class in my Swift project that handles all the REST requests and responses. I have built a simple REST API so I can test my code. I have created a class method that needs to return an NSArray but because the API call is async I need to return from the method inside the async call. The problem is the async returns void. If I were doing this in Node I would use JS promises but I can't figure out a solution that works in Swift.

2

```
import Foundation

class Bookshop {
    class func getGenres() -> NSArray {
        println("Hello inside getGenres")
        let urlPath = "http://creative.coventry.ac.uk/~bookshop/v1.1/index.php/genre/list"
        println(urlPath)
        let url: NSURL = NSURL(string: urlPath)
        let session = NSURLSession.sharedSession()
        var resultsArray:NSArray!
        let task = session.dataTaskWithURL(url, completionHandler: {data, response, error -> Void in
            println("Task completed")
            if(error) {
                println(error.localizedDescription)
            }
            var err: NSError?
            var options:NSJSONReadingOptions = NSJSONReadingOptions.MutableContainers
            var jsonResult = NSJSONSerialization.JSONObjectWithData(data, options: options, error: &err) as NSDictionary
            if(err != nil) {
                println("JSON Error \(err!.localizedDescription)")
            }
            //NSLog("jsonResults %@", jsonResult)
            let results: NSArray = jsonResult["genres"] as NSArray
            NSLog("jsonResults %@", results)
            resultsArray = results
            return resultsArray // error [anyObject] is not a subType of 'Void'
        })
        task.resume()
        //return "Hello World!"
        // I want to return the NSArray...
    }
}
```

Answers

Michael D. Jackson

Marked as duplicate.

1

answered 22 hours ago EDIT DELETE

Michael D. Jackson

Hey is this working?

1

answered 22 hours ago EDIT DELETE

Michael D. Jackson

Is it working?

1

answered 22 hours ago EDIT DELETE

Michael D. Jackson

hrhrh

1

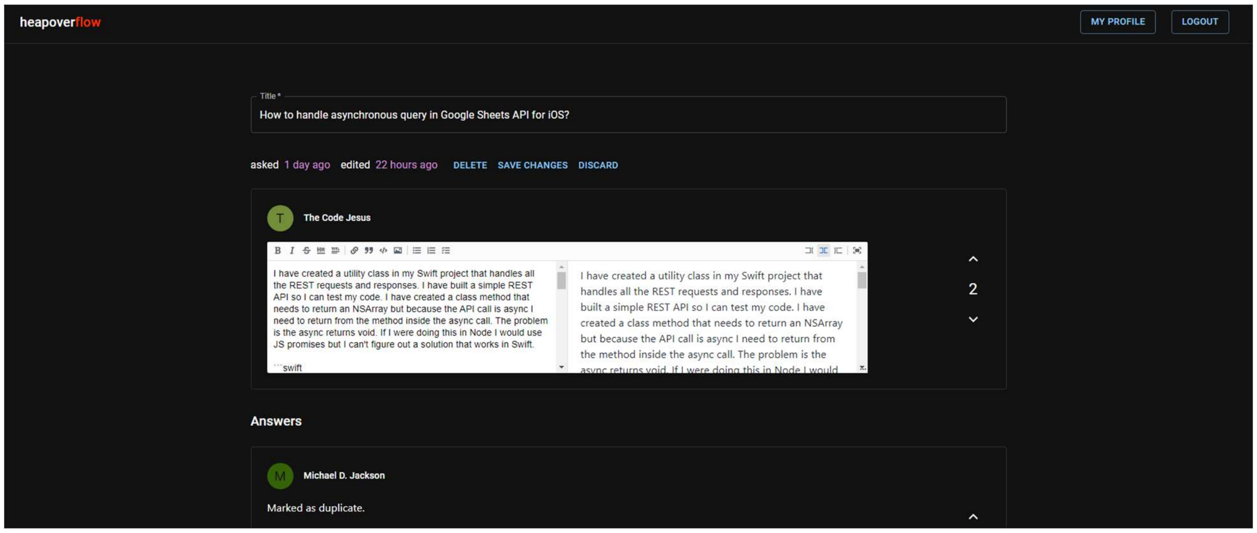
answered 22 hours ago EDIT DELETE

Your answer

Write your answer...

POST ANSWER

Figure 13. Opening a question for details (as admin)


heapoverflow

MY PROFILE LOGOUT

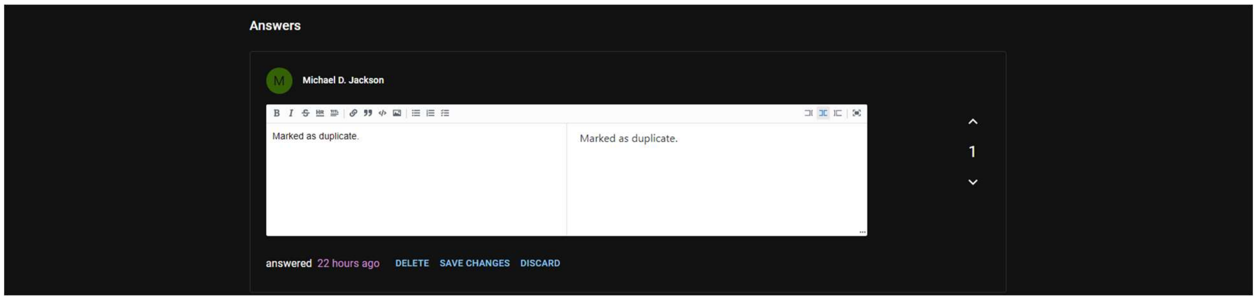
Title *

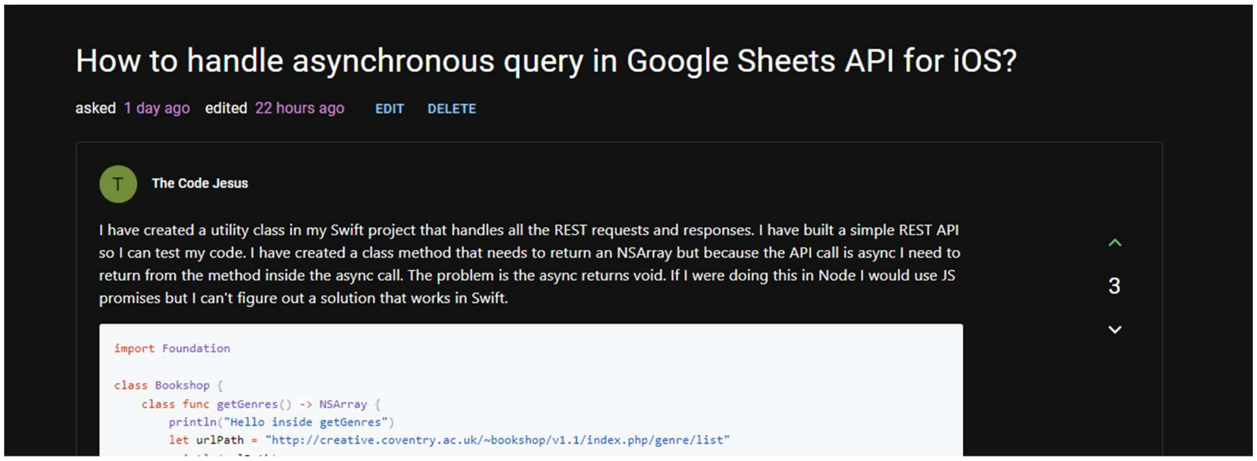
How to handle asynchronous query in Google Sheets API for iOS?

asked 1 day ago edited 22 hours ago DELETE SAVE CHANGES DISCARD

The Code Jesus

I have created a utility class in my Swift project that handles all the REST requests and responses. I have built a simple REST API so I can test my code. I have created a class method that needs to return an NSArray but because the API call is async I need to return from the method inside the async call. The problem is the async returns void. If I were doing this in Node I would use JS promises but I can't figure out a solution that works in Swift.

```swift

2

Answers

Michael D. Jackson

Marked as duplicate.

**Figure 14.** Editing a question


Answers

Michael D. Jackson

Marked as duplicate.

1

answered 22 hours ago DELETE SAVE CHANGES DISCARD

**Figure 15.** Editing an answer
```


How to handle asynchronous query in Google Sheets API for iOS?

asked 1 day ago edited 22 hours ago

The Code Jesus

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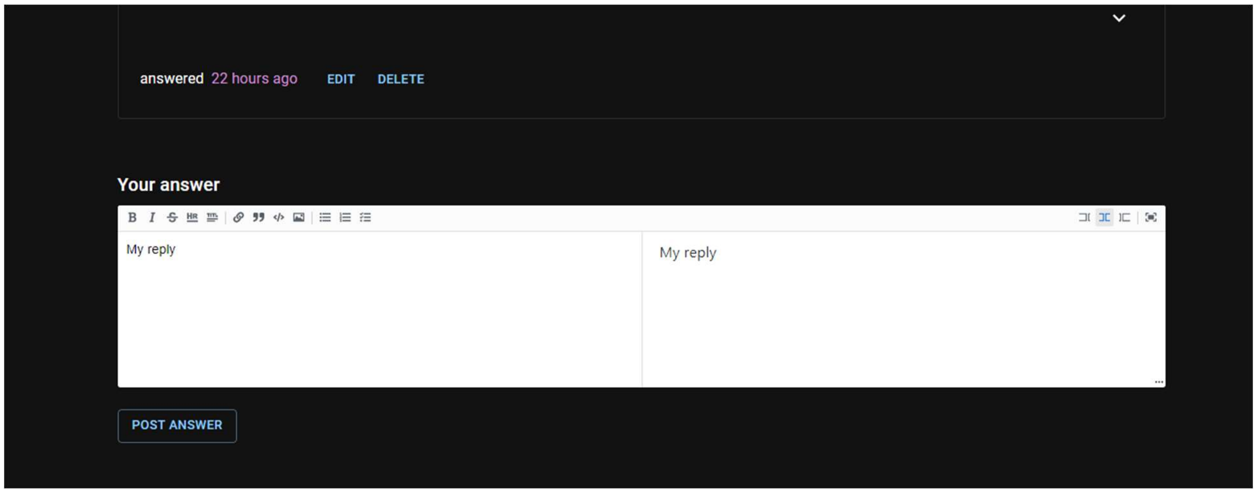
```
import Foundation

class Bookshop {
    class func getGenres() -> NSArray {
        println("Hello inside getGenres")
        let urlPath = "http://creative.coventry.ac.uk/~bookshop/v1.1/index.php/genre/list"
```

3

Figure 16. Voting on a post

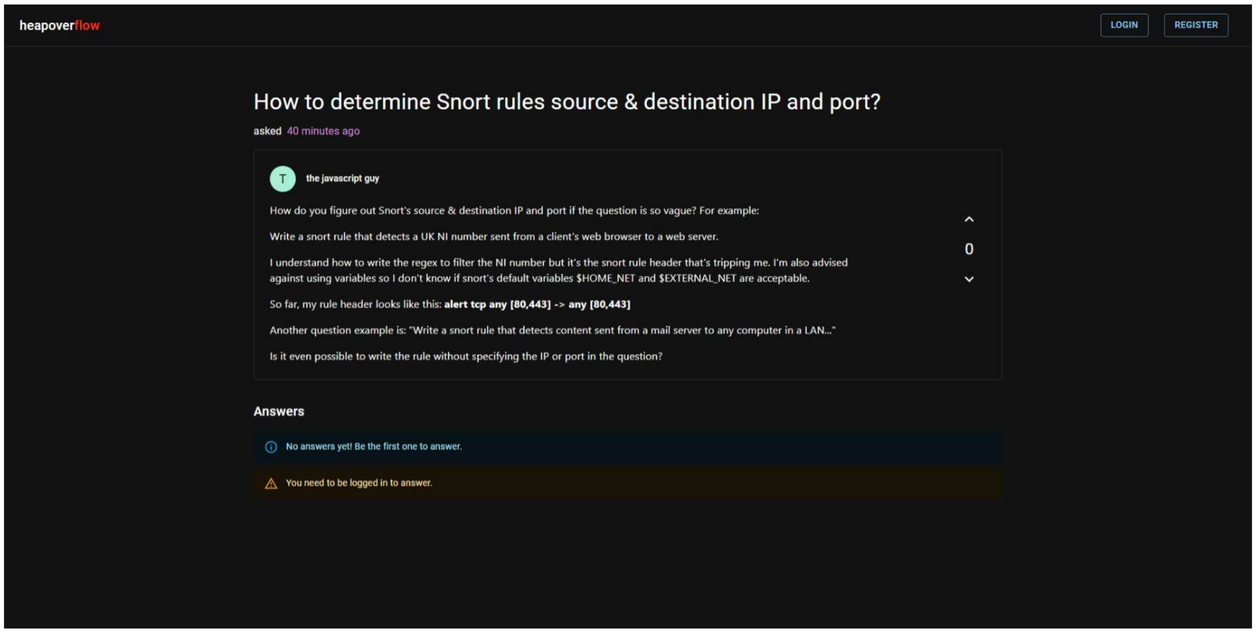

answered 22 hours ago

Your answer

My reply

My reply

Figure 17. Replying to a question



How to determine Snort rules source & destination IP and port?

asked 40 minutes ago

the javascript guy

How do you figure out Snort's source & destination IP and port if the question is so vague? For example:

Write a snort rule that detects a UK NI number sent from a client's web browser to a web server.

I understand how to write the regex to filter the NI number but it's the snort rule header that's tripping me. I'm also advised against using variables so I don't know if snort's default variables $HOME_NET and $EXTERNAL_NET are acceptable.

So far, my rule header looks like this: **alert tcp any [80,443] -> any [80,443]**

Another question example is: "Write a snort rule that detects content sent from a mail server to any computer in a LAN..."

Is it even possible to write the rule without specifying the IP or port in the question?

Answers

No answers yet! Be the first one to answer.

You need to be logged in to answer.

Figure 18. Unauthenticated user viewing a post with no answers