System Design for Shibainu

(Sprint 4)

Table of Contents

System Interaction with Environment

OS Requirement:

Unix (Linux) or Windows 10

Programming Language Compilers:

JavaScript Engine - Browser dependent (V8, Spidermonkey, etc)

Relational Database Management System:

PostgreSQL - version 11 or higher

Network Configuration:

Right now, the web application is undeployed, so it runs on https://localhost:3000 on any local machine.

Tools Required:

Git - version 2.20 or higher

NodeJS - version 12 or higher

NPM - version 13 or higher

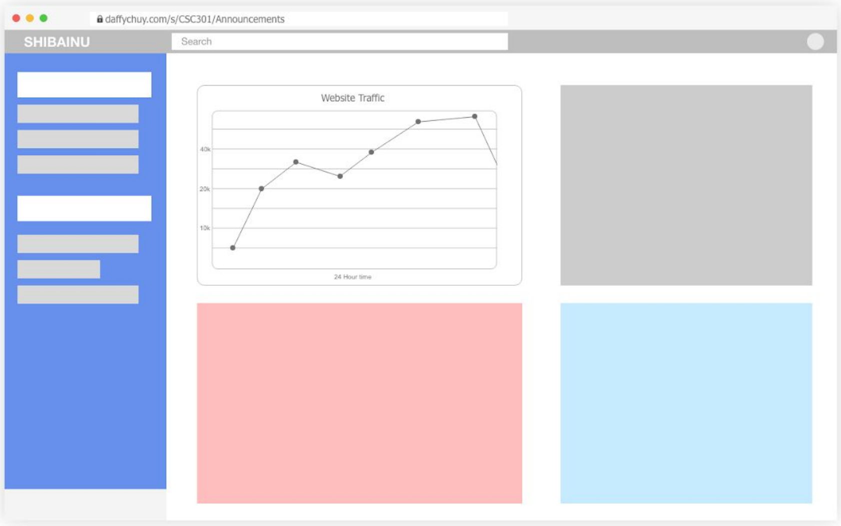
IDE/Editor:

Any of Visual Studio Code, Eclipse or IntelliJ

UI/UX Diagram

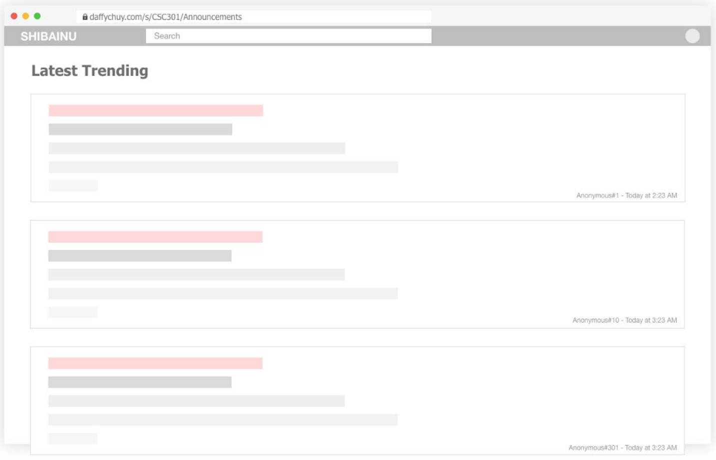
Note: We are using UI/UX diagrams as an alternative to CRC cards

Admin page for extensive moderating of the website, including web traffic.



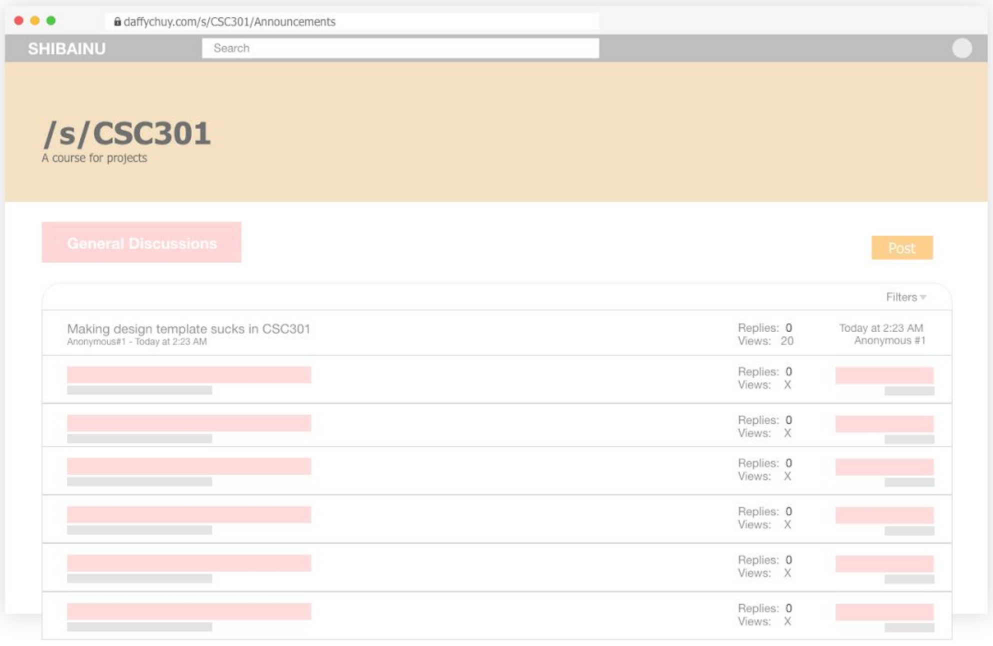
Frontpage for taking a look at what's trending along with links to the threads and its accompanying category.

Moderator can option to not have their forum to be on trending if their subpage is about their classes


daffychuy.com/s/CSC301/Announcements
SHIBAINU
Search
Latest Trending
Anonymous#1 - Today at 2:23 AM
Anonymous#10 - Today at 3:23 AM
Anonymous#301 - Today at 3:23 AM

Example of a **Category page** for CSC301

Forum where they're allowed to post


daffychuy.com/s/CSC301/Announcements

SHIBAINU Search

/s/CSC301
A course for projects

General Discussions Post

Filters

Making design template sucks in CSC301
Anonymous#1 - Today at 2:23 AM
Replies: 0
Views: 20
Today at 2:23 AM
Anonymous #1

Replies: 0
Views: X

Replies: 0
Views: X

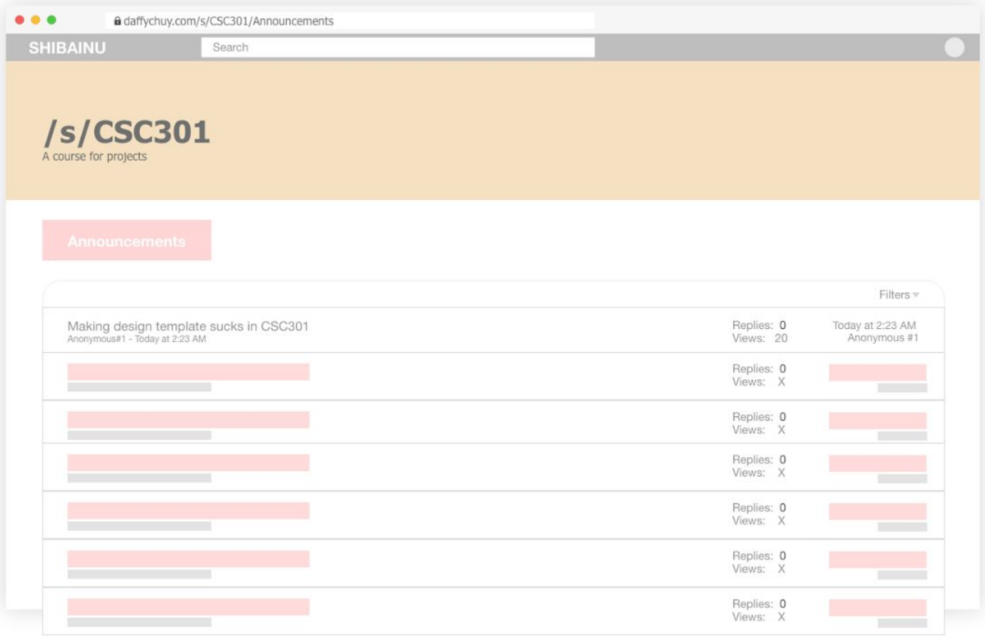
Replies: 0
Views: X

Replies: 0
Views: X

Replies: 0
Views: X

Replies: 0
Views: X

Moderator can also limit which thread can be posted by who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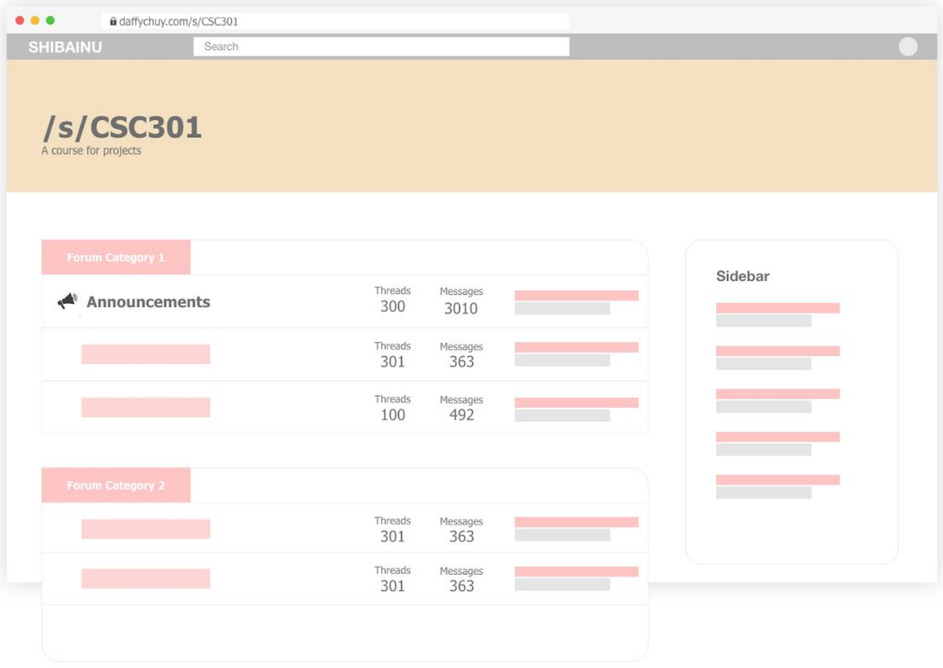
Replies: 0
Views: X

Example of a **Subpage** which further concentrates topics within a Category page in

CSC301

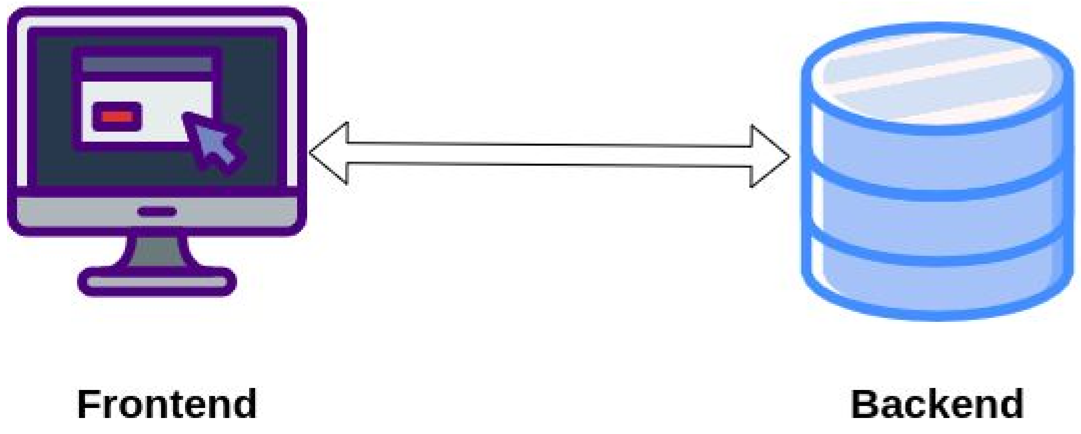
They can also customize the theme to their liking

Moderator can also set only registered anonymous can post in said forum



Architecture of the System

The system, in an abstracted view, is divided into the frontend and backend.



The frontend is the user-facing interface that users, moderators and admins of the website interact with. Users of the website will be able to consume, provide and interact with the content in it.

When users provide new content through the form of posts, comments or showing other forms of media, it will connect to the database through a REST api. In addition, serving up web pages, updating or deleting resources is done by following the REST api.

The backend is the data access layer which contains the database--PostgreSQL in our case. It provides long-term storage for all resources on the website and serves it for the frontend to use when it is accessed.

System Decomposition

Roles of components

- Frontend
    - Tailwind CSS - styling and customizing the website
    - EJS - generates html markup with javascript
    - All files related to the frontend should be in the views folder.

- Backend
    - PostgreSQL - our database for storing resources (schema and er diagram here).
    - ExpressJS - a lightweight server framework that will handle requests and responses to the client.
    - PassportJS - authentication middleware that supports using a username and a password.
    - Bcrypt - for password hashing instead of storing the password directly.

- REST API
    - We are using REST because it makes it easy and simple to create documentation, develop a public api, and to separate the client and server.
    - Our api will be exposed to all users that will want to take advantage of it.
    - Documentation can be found here or when running the web app, go to https://localhost:3000/api/api-docs.

    - Routes folder contains:
        - The api folder is for handling calls and endpoints regarding the api.
        - The UI folder contains the HTTP handlers that will service the endpoints on the website.
        - The index.js file will be where the context for the endpoints will be declared and linked to the handlers specified in queries.js
        - The users.js will contain the api regarding users.

Automation and Testing

- GitHub Actions is used to configure a workflow for the repository. It will build and test the repository. In the future, packaging, releasing, and deployment will be added.
- For testing, we chose Jest in conjunction with SuperTest to automate the testing of our api. The API.test.js file, which contains the test cases, can be found under the __tests__ folder.

Errors and Exceptional cases

Errors will be handled in different manners depending on what kind of error it is. In general, all errors will be shown through the UI. For example (**non-exhaustive**),

- A user logging in with the wrong credentials will be routed back to the login page with a popup indicating the wrong username/password.
- Accessing pages/resources that don't exist (e.g. User profiles, Categories, Subcategories, etc.) will return a custom 404 page.
- Posting content that is bannable (to be defined) will show an error to the user posting it through a popup or message.