



Capstone II Final Project Fall 2021

Freedom Fi

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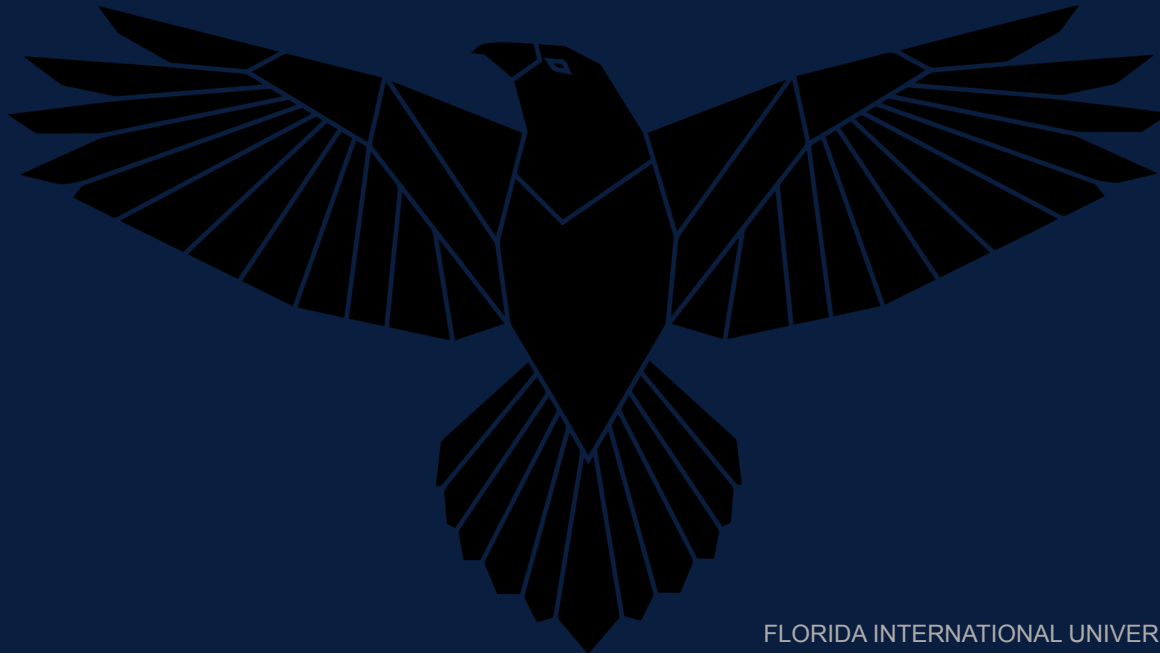
Product Owner and Mentor: Augusto Monge

Professor: Dr. Masoud Sadjadi



Why Freedom FI?

The reason why we decided to create Freedom Fi was to help inform and combat internet restriction policies currently going on around the world. Some countries have limited its citizens access to the internet, which impedes on a person's right to access public information. By creating an application that tells users which countries have limited internet access and to what extent, and giving ways to combat the internet restriction, we hope to encourage internet freedom globally.

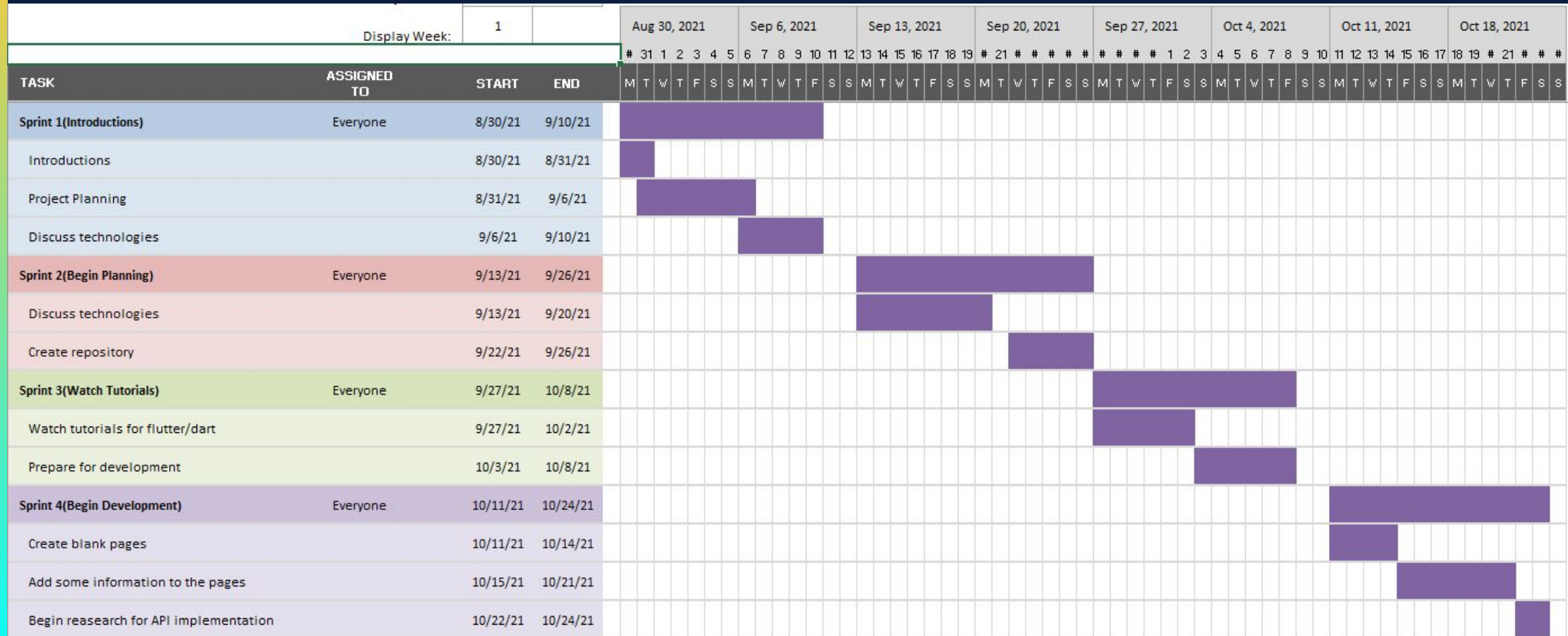


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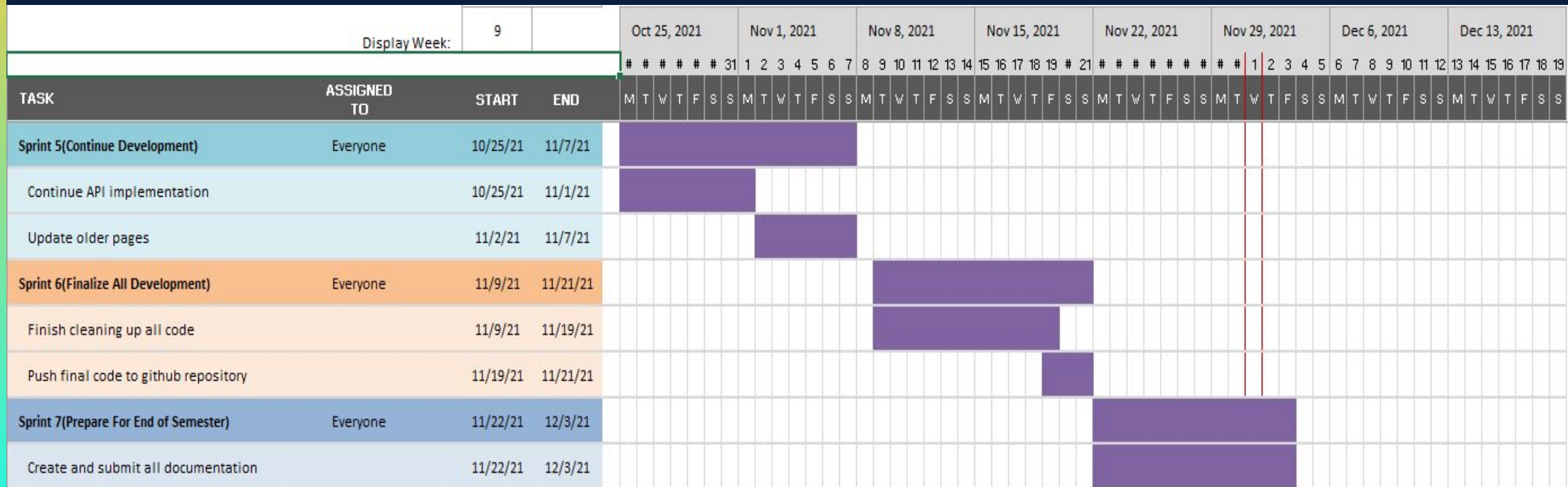
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Project Management Part 1 Gantt



Project Management Part 2 Gantt





User Stories

1. FreedomFi_1: Create repository
2. FreedomFi_2: Choose framework and technologies for development
3. FreedomFi_3: Create base application
4. FreedomFi_4: Create blank pages to start development
5. FreedomFi_5: Create home page as main screen
6. FreedomFi_6: Turn blank pages into pages we can work on (news, mission statement, vpn guide)
7. FreedomFi_7: Connect to Netblocks twitter using twitter api
8. FreedomFi_8: Refine and update current pages



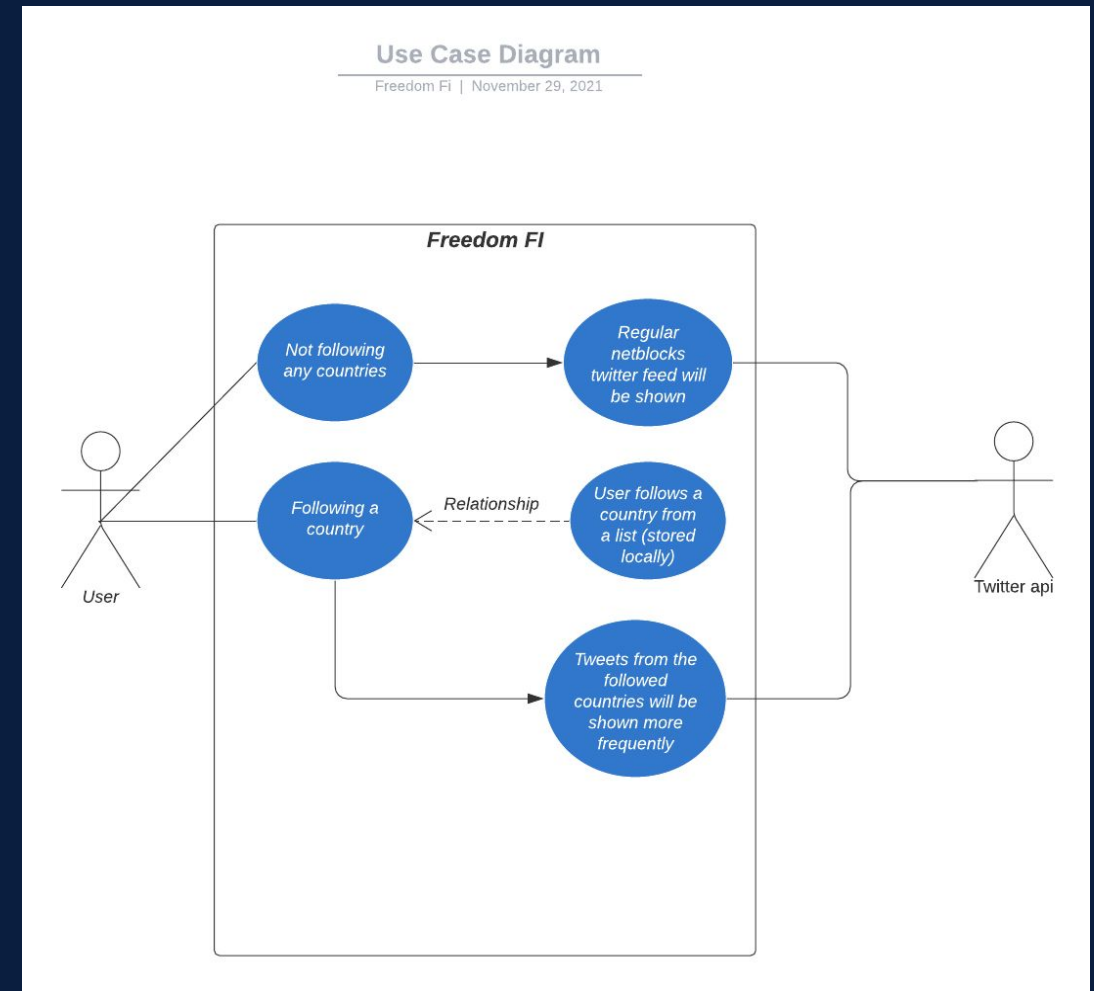
FreedomFi_2: Choose framework and technologies for development

This was one of our most important user stories, since as a group we had to decide everything about the project from what IDE to use to what language would be selected, and since we were asked to develop an application that had support for both mobile and website, we had to choose a language that would be relatively easy to learn while also allowing multi-platform access for users. The IDE we chose was Visual Studio Code, which the technologies for development being Flutter/Dart and twitters API call.

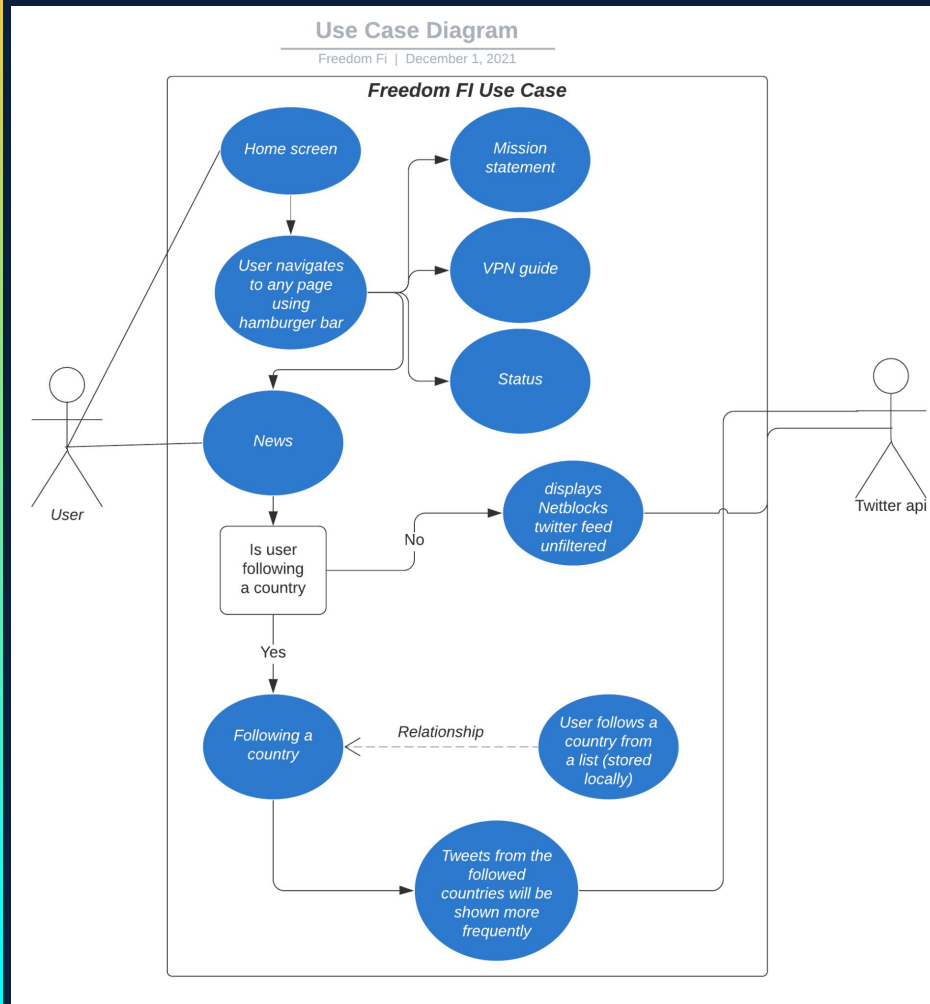


FreedomFi_7 Connect to Netblocks twitter using twitter api

After creating the different pages as a basis for the application, the most important part was to make sure the information we wanted for the user was displayed properly, which was the twitter feed from Netblocks twitter, where they post public information regarding the internet censorship of countries, who its affecting, and how it is affecting those citizens. By using twitter's public api call, we were able to connect Netblocks twitter feed to the application, and with a little bit of formatting, display the home feed to the user through the application to share everything that Netblocks posts and reposts regarding internet restriction.

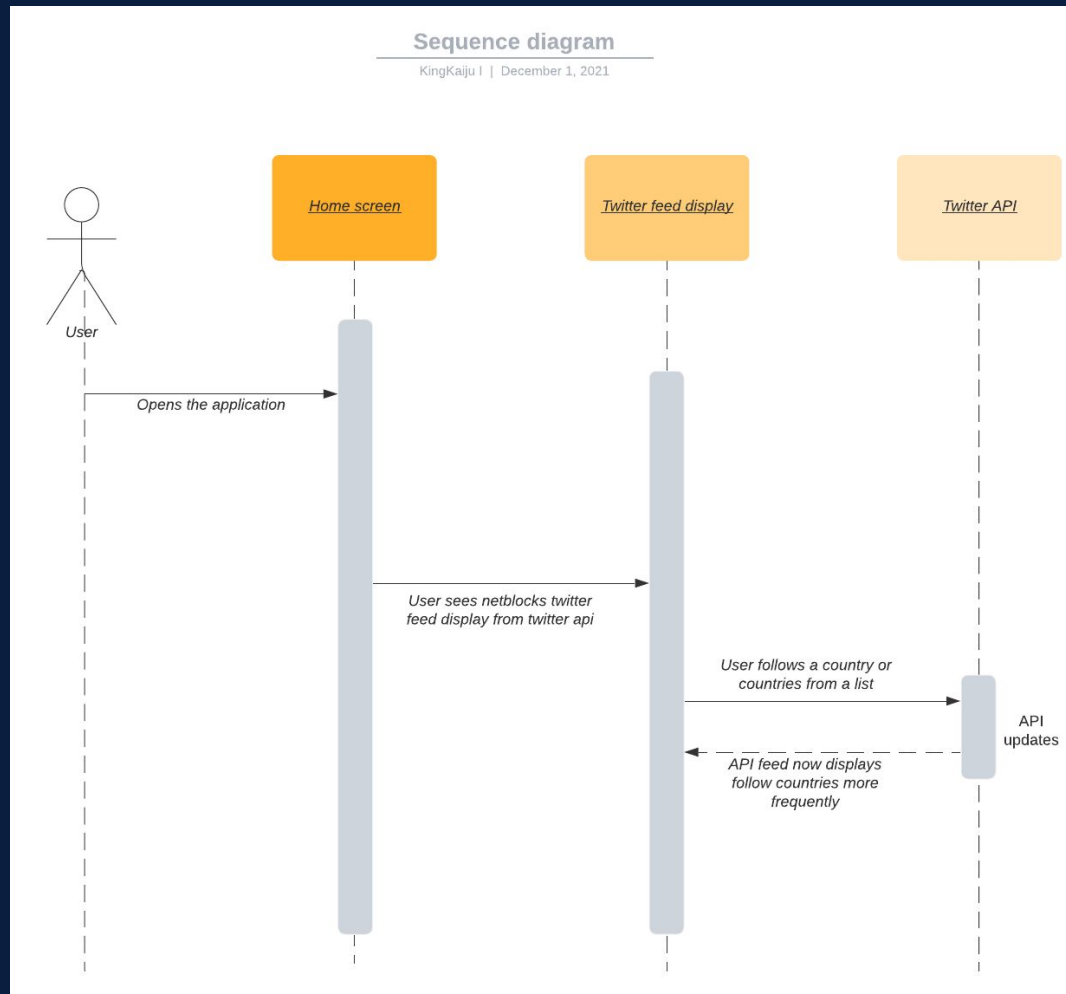


Use Case Diagram



The use case diagram shown left describes how the user would interact with the Freedom FI application in its entirety, showing how the user navigates through the different pages, and also how the twitter feed display works based on if the user is following a country or not.

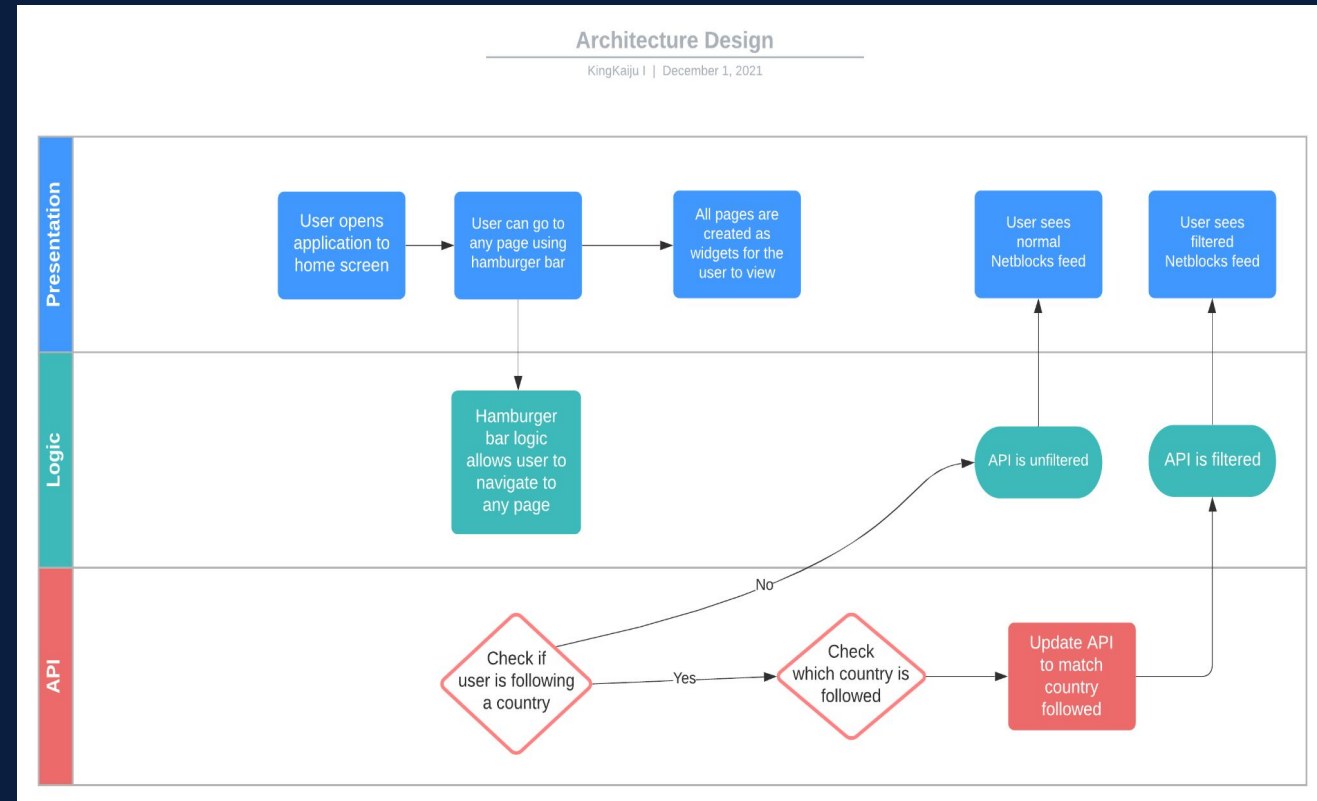
Sequence Diagram



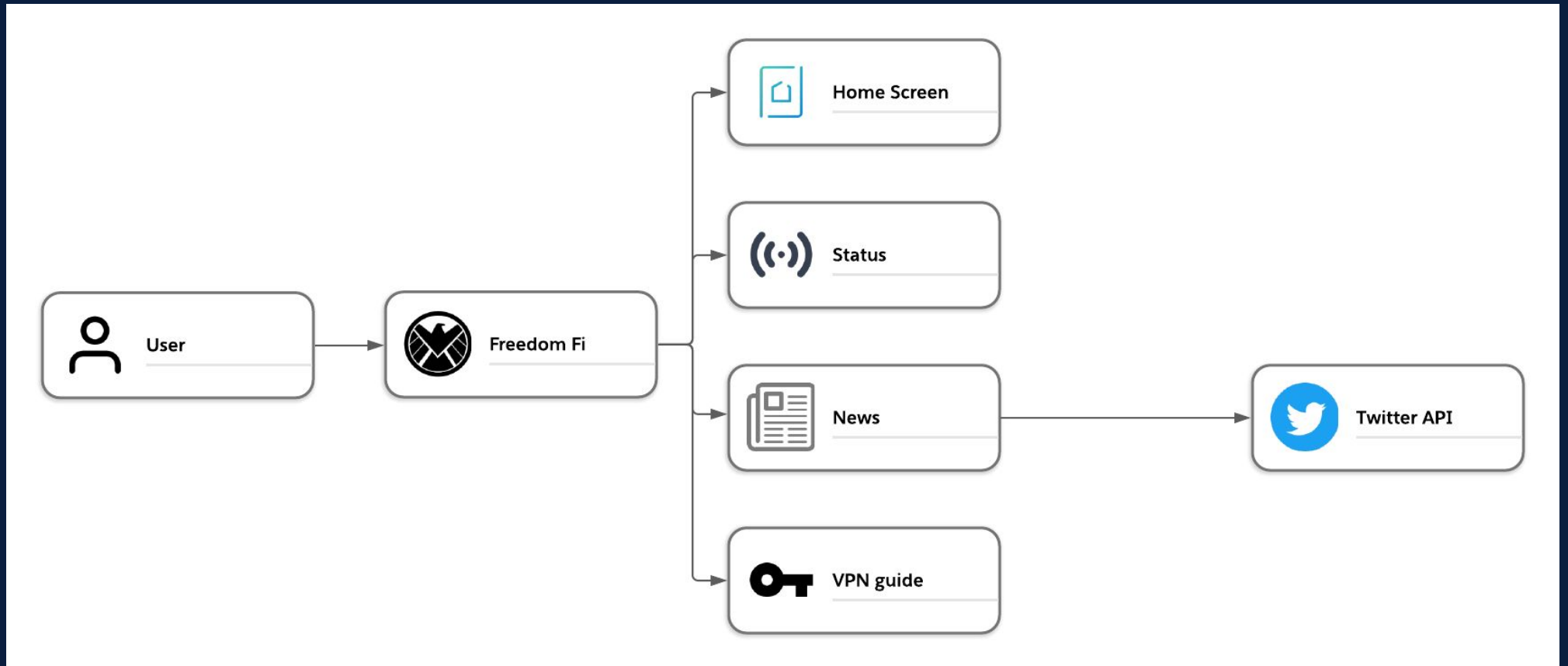
The sequence diagram shown to the left showcases the logic and sequence behind how the twitter api display works, where the user originally opens the home screen, then sees the unfiltered netblocks twitter feed, then if they choose to follow a country or countries, the api updates and shows that country more frequently.

Architecture design

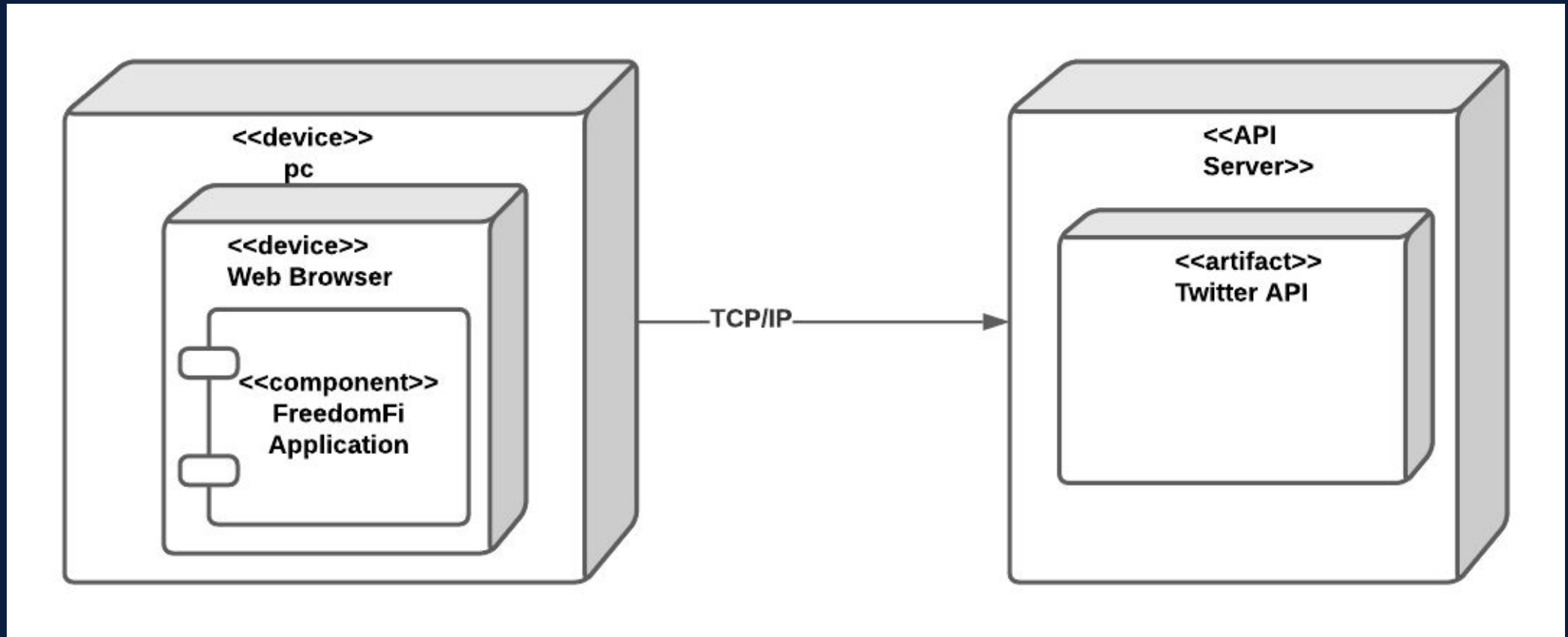
The architecture design for Freedom Fi is as shown on the right which is a layered architecture, where the presentation layer accounts for what the user sees, the logic layer contains all of the logic for the code, and the api layer shows how the api gets filtered depending on if the user follows a country or not.



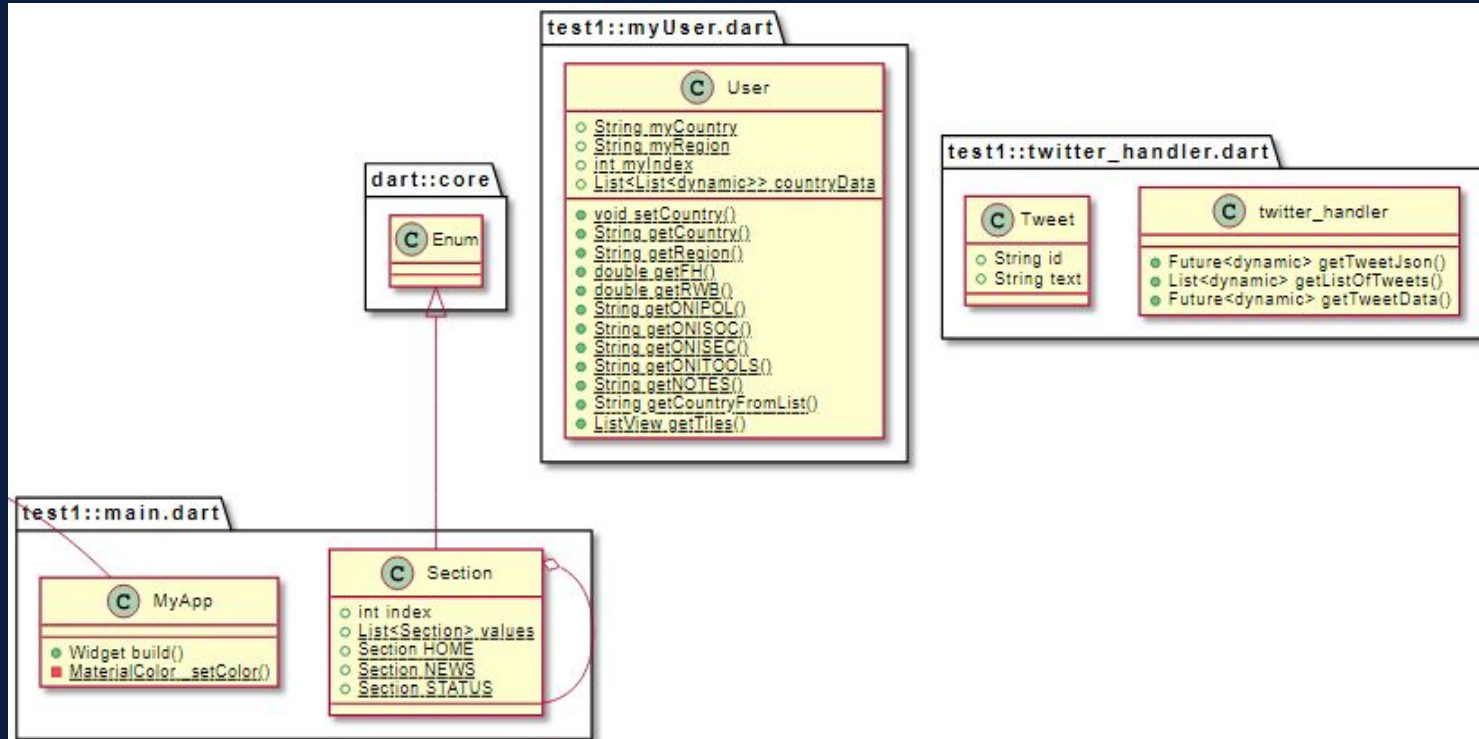
System design



System deployment



Class diagram



Shown to the right is a class diagram of some of the more important classes, which are the user class that stores the followed country information, the twitter handler, which returns the Netblocks tweets as Json, and the main class that runs everything

Country select algorithm

the myUser page contains a list of all the countries in a list called countryData that is stored in another variable called myCountry and that variable is passed onto the status page and displayed in a list of clickable buttons where the user selects their country to retrieve the status of it. After the user clicks their country, the Json data is then displayed onto the screen with the text that is contained in the tweets.

```
454 static String getCountryFromList(index) {  
455     return countryData[index][0];  
456 }  
457  
458 static ListView getTiles() {  
459     return ListView.builder(  
460         itemCount: countryData.length,  
461         itemBuilder: (context, index) {  
462             return ListTile(  
463                 title: Text(countryData[index][0],  
464                     style: new TextStyle(  
465                         color: Colors.black,  
466                         fontWeight: FontWeight.normal,  
467                         fontSize: 20)),  
468                 trailing: Row(  
469                     mainAxisAlignment: MainAxisAlignment.min,  
470                     children: <Widget>[  
471                         IconButton(  
472                             icon: Icon(Icons.check),  
473                             onPressed: () {  
474                                 myCountry = countryData[index][0];  
475                                 myIndex = index;  
476                                 Navigator.push(  
477                                     context,  
478                                     MaterialPageRoute(  
479                                         builder: (context) => MyStatusPage(title: "Status")),
```

```
@override  
Widget build(BuildContext context) {  
    return Center(  
        child: Card(  
            child: InkWell(  
                splashColor: Colors.blue.withAlpha(30),  
                onTap: () {  
                    if (User.getCountry() == 'Select Your Country') {  
                        Navigator.push(  
                            context,  
                            MaterialPageRoute(  
                                builder: (context) => MyCountryPage(title: "Country List")),  
                        );  
                    } else {  
                        Navigator.push(  
                            context,  
                            MaterialPageRoute(  
                                builder: (context) => MyStatusPage(title: "Status")),  
                        );  
                    }  
                },  
            ),  
        ),  
    );  
}
```

Test Cases

- Hamburger bar is clickable
 - opens side menu
 - option to click all pages excluding the one the user is on
- “Select Your Country” page is clickable
 - Shown on home page and status page
 - redirects to list of countries
 - clicking on the check mark next to country redirects user back to status page
- “My Country” button is clickable
 - redirects user to list of countries
 - clicking on the check mark next to country redirects user back to status page
- Home Page displays information
 - displays Mission Statement
 - displays VPN Guide
 - displays features yet to be implemented
- Status Page displays information
 - displays “Select Your Country” page
 - displays Country chosen below
 - displays Continent of country
 - displays information/notes for country
 - displays information/news from:
 - Reporters Without Borders
 - Freedom of The Press
 - ONI Political Filtering
 - ONI Social Filtering
 - ONI Security Filtering
 - ONI Tools Filtering
- News Page displays information
 - displays “Recent Censorship Reports Via Netblocks” button
 - displays information from Twitter provided by Netblock Twitter API



Summary

- Created Freedom Fi application from scratch using Flutter/dart, Visual Studio Code and twitter api calls.
- Created all the different pages the user can see on the Freedom Fi app.
- Connected to Netblocks twitter using twitter api to display internet censorship information
- Added country filtering option to display information from desired country

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Thank you for attending Freedom Fi's presentation!

Any questions?

