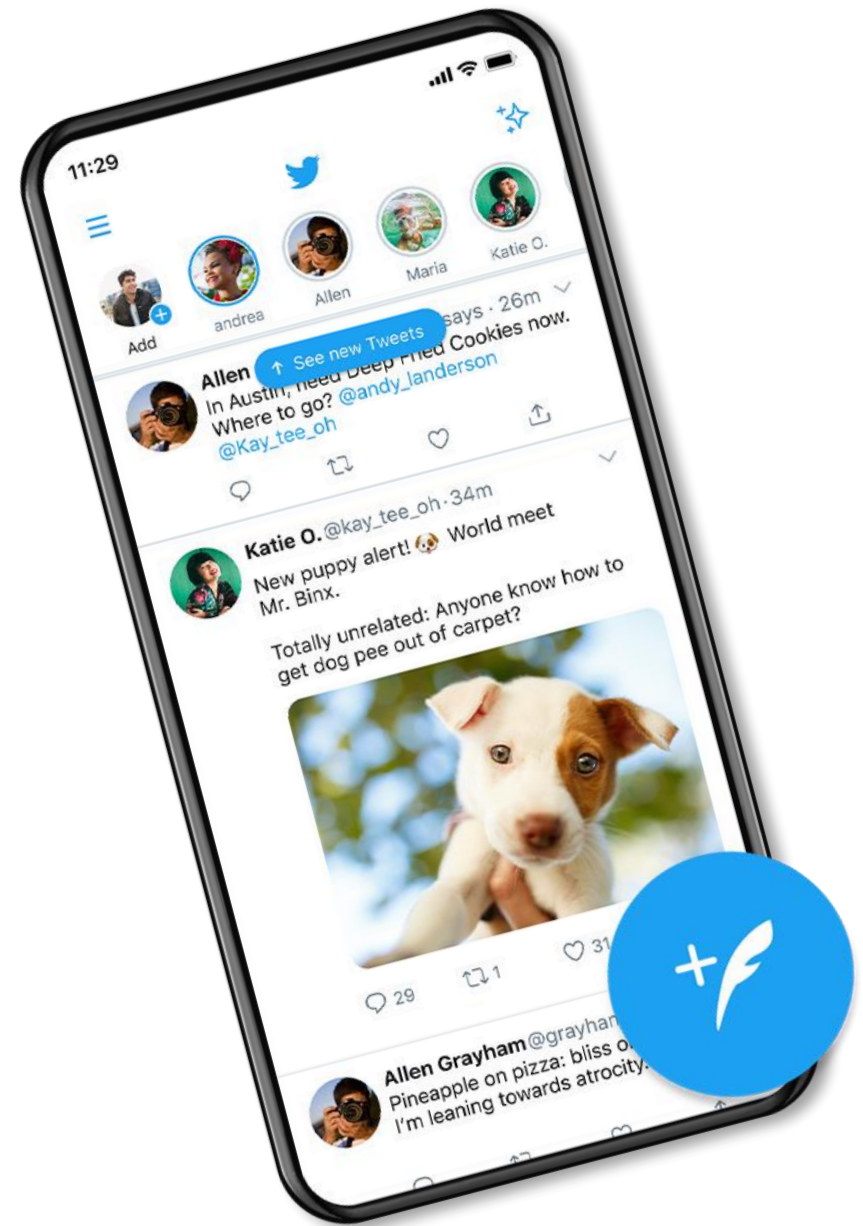
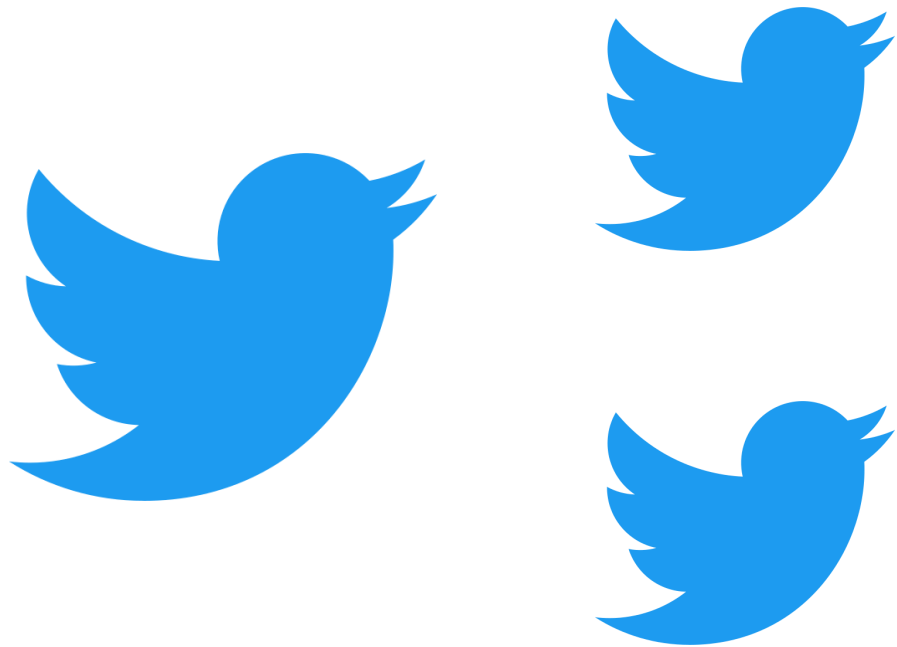


RECREATING TWITTER: OUR PROCESS

A project by Amir Sharifi, Edgar Townsend, Kristy Hoffman, Ilnaz Alizadeh Ghannad, and Hossein Parsa



BACKGROUND: HIGH-LEVEL VIEW




The purpose of our project, Twitter clone, was to build the microblogging and social networking platform from scratch.

In the real world, Twitter exists to give people the opportunity to share messages with large audiences and connect with others.

SOLUTION OVERVIEW







Features and functionalities

Users may sign in (Google), write and post tweets, delete tweets (^D_E_L ... Ye must learn this function ) , and comment on the tweets of others.

SOLUTION OVERVIEW

Other capabilities include, but are not limited to:

Bookmarking posts 

Profile editing  ♀   ♂  ♀  ♀ 

Following others (and being followed!)  ♀



Home

Search Twitter

- Home
- Explore
- Notifications
- Messages
- Bookmarks
- Lists
- Profile
- More

Tweet



← My pic is of a rly cute basset hound



Tweet



amir sharifi @amirsharifi - 11 hours ago

hi amir



H Parsa @hparsa - 11 hours ago

I am not hossein



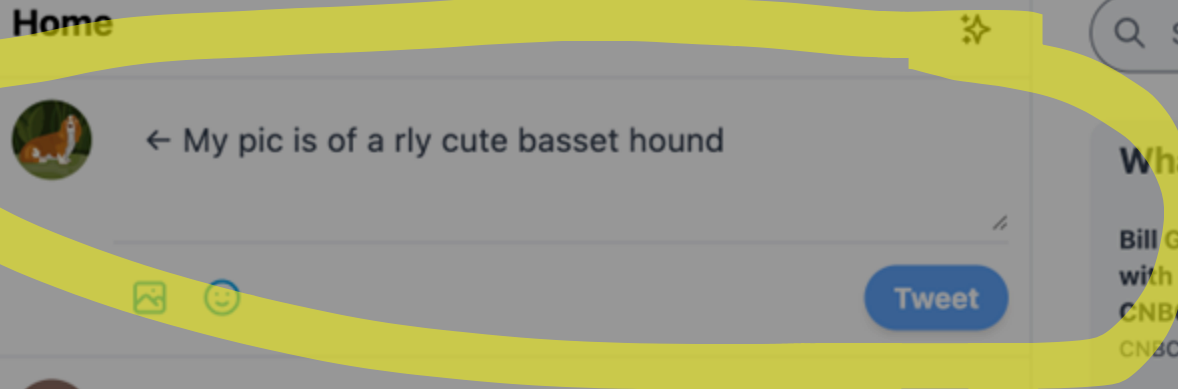
Kristy Hoffman @kristyhoffman - 11 hours ago

i am not Kristy



amir sharifi @amirsharifi - 11 hours ago


Something new




TWEETING

Whats happening

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse' - CNBC



Fed's Powell calms recession jitters with rebuff of 75-basis point rate hike - Fox Business





Buffett's Berkshire buys more Occidental shares - Fox Business




Show more

Who to follow

 orangepeacock284
Antonio Méndez [Follow](#)

 crazyduck223
Kars Van den Eijkel [Follow](#)

 happyduck779
عزل گلشن [Follow](#)

Show more

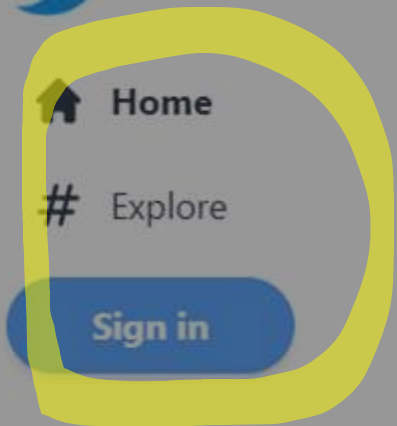


Home



Search Twitter

SIGNING IN



Home

Search Twitter

Home

Explore

Notifications

Messages

Bookmarks

Lists

Profile

More

Tweet

Defi ...

ilnaz alizadeh @ilnazalizadeh - 2 hours ago

Computer technology.Generation new computer technology.Connect ion

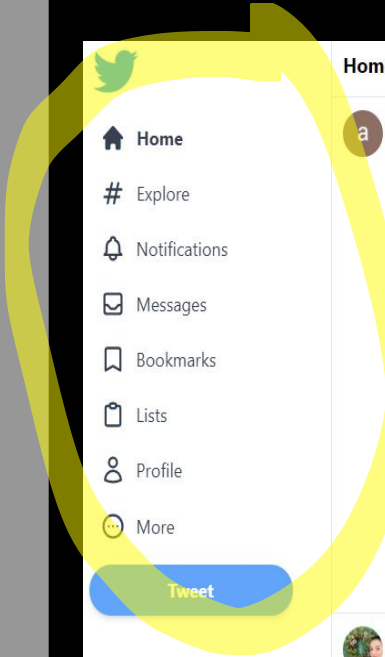
amir sharifi @amirsharifi

blacklion739 Buğra Keesmaat Follow

blackpanda284 Alexandre Margaret Follow

heavydog161 Milo Garcia Follow

Show more



Whats happening

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse' - CNBC



Fed's Powell calms recession jitters with rebuff of 75-basis point rate hike - Fox Business



Buffett's Berkshire buys more Occidental shares - Fox Business



Show more

Who to follow

redcat226 Victor Brar



heavyladybug415 John West



blackgorilla883 Djalma das Neves





GOOGLE SIGN IN

This app is created for my final project

Sign in with Google



← Tweet

Search Twitter

Home

Explore

Notifications

Messages

Bookmarks

Lists

Profile

More

Tweet



ilnaz alizadeh @ilnazalizadeh - 7 days ago

Winter is the coldest season of the year in polar and temperate climates. It occurs after autumn and before spring. The tilt of Earth's axis causes seasons; winter occurs when a hemisphere is oriented away from the Sun. Different cultures define different dates as the start of winter



1 2



Kristy Hoffman @kristyhoffman - a few seconds ago

Wow so pretty 🥰

🗨️ 🗑️ ❤️ 🔄 📌

Whats happening

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse' - CNBC



Fed's Powell calms recession jitters with rebuff of 75-basis point rate hike - Fox Business



MetLife Berni Fire buys more Covid-19 tests - Fox Business



Show more

Who to follow



whitetiger931

پرینا کامروا

Follow



sadleopard704

Chloé Lemaire

Follow



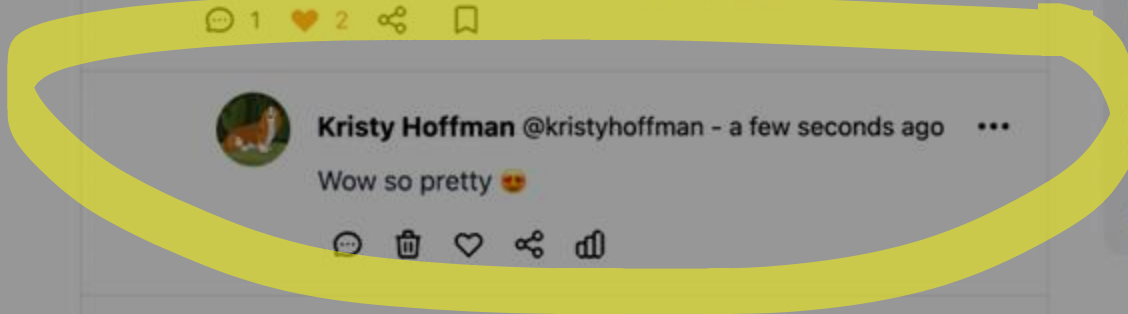
brownladybug358

پرینا حسینی

Follow

Show more

COMMENTING





← Kristy Hoffman

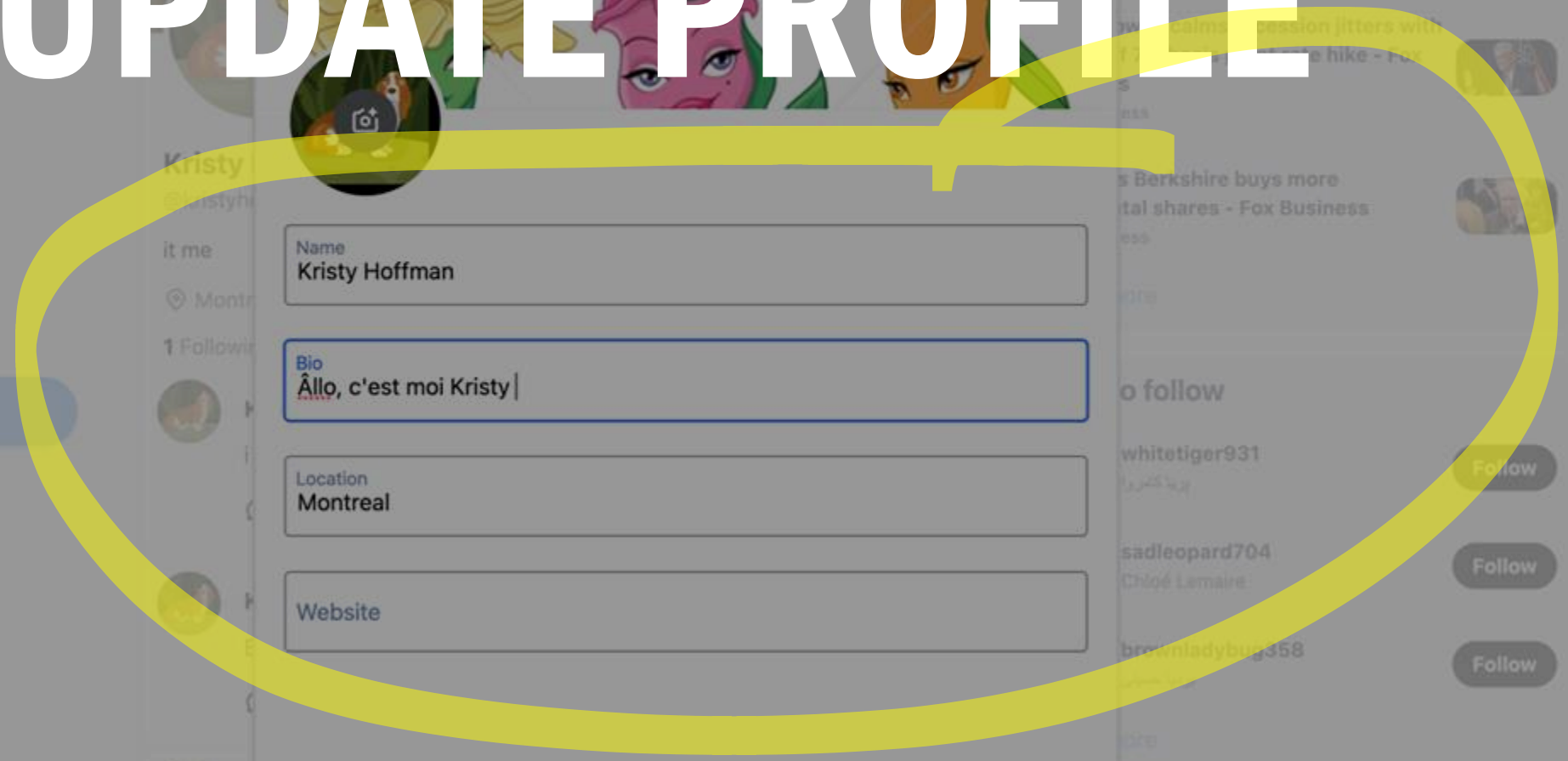
🔍 Search Twitter

- 🏠 Home
- # Explore
- 🔔 Notifications
- ✉ Messages
- 🔖 Bookmarks
- 📁 Lists
- 👤 Profile
- ⋮ More

✕ Edit profile

Save

UPDATE PROFILE



Name
Kristy Hoffman

Bio
Allo, c'est moi Kristy |

Location
Montreal

Website

Tweet

Kristy
@kristyh
it me
Montr
1 Followi

What's happening

What's questions Elon Musk's goals
letter: 'He could make it worse' -

... calms session jitters with
... hike - Fox

... Berkshire buys more
... tal shares - Fox Business

Who to follow

whitetiger931
پریم کتوروا Follow

sadleopard704
Chloé Lemaire Follow

brownladybug358
... Follow



Home

Explore

Notifications

Messages

Bookmarks

Lists

Profile

More

Tweet

← Kristy Hoffman



Followers

Following



H Parsa @hparsa



ilnaz alizadeh @ilnazalizadeh



Search Twitter

Whats happening

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse' - CNBC



Fed's Powell calms recession jitters with rebuff of 75-basis point rate hike - Fox Business



Buffett's Berkshire buys more Occidental shares - Fox Business



FOLLOWING USERS

Who to follow



whitetiger931

پرنا کلروا

Follow



saddleopard704

Chloé Lemaire

Follow



brownladybug358

پرنا حسینی

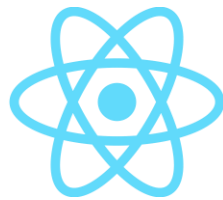
Follow

Show more

TECHNOLOGIES USED



Firebase



React

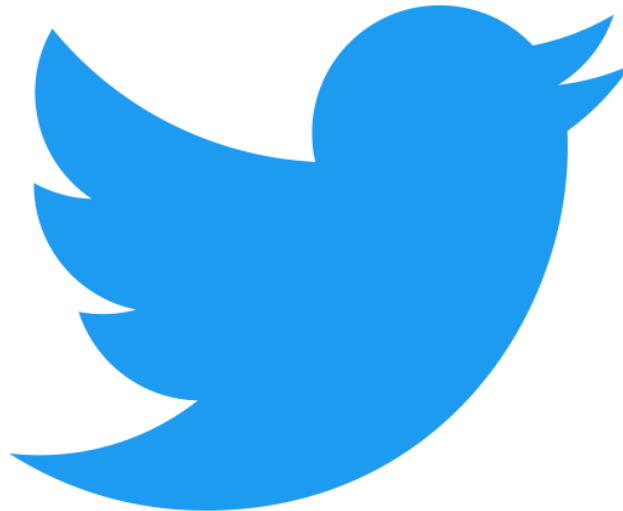


Recoil



CHALLENGES AND SOLUTIONS

We used several interesting technologies that challenged us, and ultimately helped us grow as developers.



Unit Testing (Jest & React Testing Library)

```
import React from 'react'
import {render} from '@testing-library/react'
import UserRow from '../components/userRow'

describe('userRow', () => {
  it('renders a user', () => {
    const user = {
      id: '55555',
      img: '/avatar.png',
      name: 'Admin',
      username: '@Admin01'
    }

    const _render = render(<UserRow user={user}/>);
    const text = _render.getByText('Admin')
    expect(text).toBeInTheDocument()
  })
})
```

```
import React from 'react'
import {timeConverter} from "../util/util";

describe('timeConvertor', () => {
  it('convert unix base time to date', () => {
    const seconds = 1669688658
    const result = timeConverter(seconds)
    expect(result).toBe('28 Nov 2022')
  })
})
```

```
PS F:\john abbott\FinalProject\Twitter> npm run test
```

```
> twitter@0.1.0 test
> jest
```

```
PASS  __tests__/timeConvertor.test.js
PASS  __tests__/UserRow.test.jsx
```

```
Test Suites: 2 passed, 2 total
Tests:       2 passed, 2 total
Snapshots:   0 total
Time:        5.207 s
Ran all test suites.
```

Unit Testing

Whats happening

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse' - CNBC

CNBC



Fed's Powell calms recession jitters with rebuff of 75-basis point rate hike - Fox Business

Fox Business



Buffett's Berkshire buys more Occidental shares - Fox Business

Fox Business



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TECH

Bill Gates questions Elon Musk's goals with Twitter: 'He could make it worse'

PUBLISHED THU, MAY 5 2022-3:17 AM EDT | UPDATED THU, MAY 5 2022-1:31 PM EDT

Sam Shead
@SAM_L_SHEAD

SHARE f t in ✉

KEY POINTS

- The Microsoft co-founder said at the Wall Street Journal's CEO Summit Wednesday that it's unclear how Elon Musk will change Twitter if he takes ownership.
- The tech billionaire's comments come after Musk accused him of shorting Tesla stock last month.
- Musk also tweeted a crude joke about Gates.

In this article

TWTR +0.35 (+0.66%)

Follow your favorite stocks
CREATE FREE ACCOUNT



Speaking at the at the Wall Street Journal's CEO Summit Wednesday, Gates asked of Elon Musk: "How does he feel about something [on Twitter] that says 'vaccines kill people' or that 'Bill Gates is tracking people?'"

TV
Fast Money Halftime Report WATCH LIVE
UP NEXT | The Exchange 01:00 pm ET Listen

TRENDING NOW

1 This 28-year-old built a side hustle that brings in \$30,000/month: 'I only have to work 6 hours a week'

2 The easiest way to travel full time? See what a 28-year-old paid for an apartment on a cruise ship

3 Carvana shares tank as bankruptcy concerns grow for used car retailer

4 Live updates Ukraine war: Putin says Russia's war could be 'lengthy'; Pope compares war to Nazis

Unit Testing

```
import React from 'react'
import {render} from '@testing-library/react'
import News from '../components/News'

describe('news', () => {
  it('render news row', () => {

    let article = {
      url : 'https://www.cnn.com/2022/05/05/bill-gates-says-elon-musk-could-make-twitter-worse.html',
      title:'Bill Gates questions Elon Musk\'s goals with Twitter: \'He could make it worse\' - CNN',
      source:{
        name:'cnn'
      },
      urlToImage:'https://image.cnn.com/api/v1/image/107017517-1645200499603-gettyimages-1236298089-jm1_6693.jpeg?v=1651738132&w=1920&h=1080'
    }

    const _render = render(<News article={article}/>);

    const text = _render.getByText('Bill Gates questions Elon Musk\'s goals with Twitter: \'He could make it worse\' - CNN').closest('a')

    expect(text).toHaveAttribute('href', 'https://www.cnn.com/2022/05/05/bill-gates-says-elon-musk-could-make-twitter-worse.html')
  })
})
```

```
> twitter@0.1.0 test
> jest
```

```
PASS  __tests__/timeConvertor.test.js
PASS  __tests__/UserRow.test.jsx
PASS  __tests__/News.test.jsx
```

```
Test Suites: 3 passed, 3 total
Tests:       3 passed, 3 total
Snapshots:   0 total
Time:        4.975 s
Ran all test suites.
```

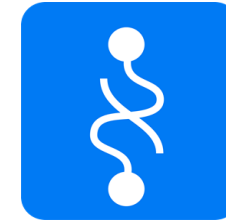
State Management



```
npm install recoil
```

```
js _app.js x
pages > js _app.js > App
46 <SessionProvider session={session}>
47   <RecoilRoot>
48 >   <Head> ...
52   </Head>
53   <div className="flex">
54     <main
55       className={`flex min-h-screen mx-auto ${
56         router.pathname === "/auth/signin" && "justify-center"
57       }`}
58     >
59     {/* Sidebar */}
60     {router.pathname !== "/auth/signin" && <Sidebar />}
61     <Component {...pageProps} />
62
63     {/* Widgets */}
64     {router.pathname !== "/auth/signin" &&
65       newsResults &&
66       randomUsersResults && (
67         <Widgets
68           newsResults={newsResults.articles}
69           randomUsersResults={randomUsersResults.results}
70         />
71       )}
72     {/* Modal */}
73     <CommentModal />
74   </main>
75 </div>
76 </RecoilRoot>
77 </SessionProvider>
78 ];
79 }
```


State Management



```
modalAtom.js - 20221206 - Visual Studio Code

EXPLORER
  > OUTLINE
  > TIMELINE
  20221206
    atom
      modalAtom.js
      userAtom.js
    components
      Bookmark.js
      Comment.js
      CommentModal.js
      Feed.js
      Follow.js
      FollowTabs.js
      Input.js
      ModalProfile.js
      News.js
      Post.js
      Profile.js
      ProfileModal.js
      SidebaeMenuItem.js
      Sidebar.js
      style.css
      Trending.js
      TrendingTest.js
      UserRow.js
      Widgets.js
  > pages
  > public
  > styles
  > util
  .env.local
  .eslintrc.json
  .gitattributes

modalAtom.js
atom > modalAtom.js > modalState
1 import { atom } from "recoil";
2 export const modalState = atom({
3   // for comments
4   key: "modalState", // unique ID (with respect to othe
5   default: false, // default value (aka initial value)
6 });
7
9 export const profileModalState = atom({
10  key: "profileModalState", // unique ID (with respect
11  default: false, // default value (aka initial value)
12 });
13
15 export const postIdState = atom({
16  key: "postIdState", // unique ID (with respect to oth
17  default: "id", // default value (aka initial value)
18 });
19

userAtom.js
components > CommentModal.js > ...
1 import { useRecoilState } from "recoil";
2 import { modalState, postIdState } from "../atom/modalAtom";
3 import Modal from "react-modal";
4 import { useRouter } from "next/router";
5
6 import {
7   EmojiHappyIcon,
8   PhotographIcon,
9   XIcon,
10 } from "@heroicons/react/outline";
11 import { db } from "../firebase";
12 import {
13   addDoc,
14   collection,
15   collectionGroup,
16   doc,
17   onSnapshot,
18   serverTimestamp,
19 } from "firebase/firestore";
20 import { useEffect, useState } from "react";
21 import Moment from "react-moment";
22 import { userState } from "../atom/userAtom";
23 import EmojiPicker from "emoji-picker-react";
24
25
26
27 export default function CommentModal() {
28   const [open, setOpen] = useRecoilState(modalState);
29   const [currentUser] = useRecoilState(userState);
30   const [postId] = useRecoilState(postIdState);
31   const [post, setPost] = useState({});
32   const [input, setInput] = useState("");
33   const [openEmojiPicker, setOpenEmojiPicker] = useState(false)
34   const router = useRouter();
35
```

Tailwind CSS

Working with Tailwind CSS was an exercise in adaptation. It required us to differentiate between Tailwind-specific keywords and traditional CSS syntax:

```
.button {  
  background-color: #4CAF50; /* Green */  
  border: none;  
  color: white;  
  padding: 15px 32px;  
  text-align: center;  
  text-decoration: none;  
  display: inline-block;  
  font-size: 16px;  
}
```

Creating a button with traditional CSS

```
<button class="h-10 px-6 font-semibold rounded-md bg-black text-white" type="submit">
```

Creating a button with Tailwind CSS

Firestore



Firestore console interface showing a document view for a post.

Navigation: Home > posts > qndoiEoq0sxT1..

More in Google Cloud

twitter-v5	posts	qndoiEoq0sxT1TH1FCj9
<ul style="list-style-type: none">+ Start collectionposts >users	<ul style="list-style-type: none">+ Add documentKrCvq5eFMOJjDLadCQcHOET9ihDFTJpdjhNzq15dQEeNNBRgYgfy1aAsGb1QneCYuQcrsfNAXJGj8zz5q884hx00ilqhKOKkErnqqndoiEoq0sxT1TH1FCj9 >zuBg1Noc1pxU5avNrBWr	<ul style="list-style-type: none">+ Start collectioncommentslikes <ul style="list-style-type: none">+ Add fieldid: "109518711131673132063"image: "https://firebasestorage.googleapis.com/v0/b/twitter-v5.appspot.com/o/posts%2FqndoiEoq0sxT1TH1FCj9%2Fimage?alt=media&token=5973a22c-499f-4187-983d-020f2a067e1c"isBookmarked: falsename: "Edgar Townsend"text: "Alien Dinosaur War Robot"timestamp: 7 December 2022 at 09:09:07 UTC-5userImg: "https://lh3.googleusercontent.com/a/AEdFTp5-ElEF11cFenLNhNS4_umZagn4dyey3pgYnCBv=s96-c"username: "edgartownsend"

Firestore



Firestore console interface showing a document view for a user in a collection named 'users'.

Navigation: Home > users > 1166299010181.

Project: twitter-v5

Collection: users

Document ID: 116629901018172437344

Document Data:

```
{
  "bio": "",
  "email": "ilnaz.a1364@gmail.com",
  "followers": [
    "106265245273468880153",
    "103466597618979148313"
  ],
  "following": [
    "106265245273468880153",
    "109518711131673132063",
    "103466597618979148313"
  ],
  "headerImg": "https://firebasestorage.googleapis.com/v0/b/twitter-v5.appspot.com/o/header%2F116629901018172437344%2Fimage?alt=media&token=d087f7f0-7470-40fc-998e-3783df923cb9",
  "location": "Gatineau",
  "name": "ilnaz alizadeh",
  "timestamp": "7 December 2022 at 09:11:37 UTC-5",
  "uid": "116629901018172437344",
  "userImg": "https://lh3.googleusercontent.com/a/AEdFTp5yKtZ-By60TBZ0AxnJ3-lZDVhVjfNOpwNyB68=s96-c",
  "username": "ilnazalizadeh",
  "website": ""
}
```

Authentication

We were using NextAuth.js, and it used session for authentication.

Our challenge was to pass the Google token, and our solution was to convert NextAuth.js to FirebaseAuth to retrieve it from the database.

We learned that the token is managed by Recoil, which treats login/logout as a “door.”

Authentication

```
pages > api > auth > JS [...nextauth].js > [🔗] default > 🔗 callbacks > 📦 session
1  import NextAuth from "next-auth"
2  import GoogleProvider from "next-auth/providers/google"
3
4  export default NextAuth ({
5    // Configure one or more authentication providers
6    providers: [
7      GoogleProvider({
8        clientId: "911523746943-c6kj86knf5t57df1h73jv9oek717vbdo.apps.googleusercontent.com",
9        clientSecret: "GOCSPX-ib94aDFytnpvGHWm786_dsGdK_I",
10       }),
11      // ...add more providers here
12     ],
13
14     pages:{
15       signIn:"/auth/signin",
16
17     },
```

```
2  import { getAuth, signInWithPopup, GoogleAuthProvider } from "firebase/auth";
3  import { doc, getDoc, serverTimestamp, setDoc } from "firebase/firestore";
4  import { useRouter } from "next/router";
5
6  export default function Signin() {
7
8     const router = useRouter();
9
10    const onGoogleClick = async()=> {
```

```
import { getAuth, signOut } from "firebase/auth";
import { useRecoilState } from "recoil";
import { userState } from "../atom/userAtom";
```

```
export default function Input() {
  const [currentuser, setCurrentUser] = useRecoilState(userState);
  const [input, setInput] = useState("");
  const [selectedFile, setSelectedFile] = useState(null);
  const [loading, setLoading] = useState(false);
  const filePickerRef = useRef(null);
  const auth = getAuth();
```

```
const onDocClick = async () => {
```


FUTURE WORK

The screenshot shows the Twitter interface on a desktop browser. The address bar displays 'twitter.com/explore/tabs/trending'. The left sidebar contains navigation options: Home, Explore, Notifications, Messages, Bookmarks, Lists, Profile, and More, along with a 'Tweet' button. The main content area is titled 'Trending' and lists ten items under the heading 'Canada trends'. The items are: 1. Morocco (Trending with Spain), 2. Carey Price (10.3K Tweets), 3. #LeafsForever (1,331 Tweets), 4. Violence Against Women (20.1K Tweets), 5. Portugal (Trending with Ronaldo, Ramos), 6. #MontrealMassacre (4,856 Tweets), 7. #December6 (6,468 Tweets), 8. Kirstie Alley (135K Tweets), 9. Marner (9,119 Tweets), and 10. #flames1stgoal. On the right, the 'Who to follow' section lists Derks Custom Cars, Vogue Magazine, and Netflix, each with a 'Follow' button. The footer includes links for Terms of Service, Privacy Policy, and Cookie Policy, and a copyright notice for 2022 Twitter, Inc.

With more time, we would add the following:

Search by hashtag 

Private messaging 

Curating account recommendations based on users' interest and data 

SUMMARY

Originally, our team set out to build a near-exact replica of Twitter, the microblogging and social networking platform. We fulfilled most of our aspirations, and even added Google sign in capabilities.

In addition to the technologies, we anticipated needing, we also worked with React, Recoil, and Vercel.

Twitter recreation project proposal

Title: Twitter clone (temporary name)

Team members: Ilnaz Alizadeh Ghannad, Kristy Hoffman, Hossein Parsa, Amir Sharifi, Edgar Townsend

Project description: Twitter clone is a web application that connects users by providing an online space for them to create posts of 280 characters or less and identify their topics with hashtags.

Users are required to register and log in to the app using an email address and password. Their capabilities include creating, editing, and deleting posts, as well as reacting to others' posts by liking and/or commenting on them.

All posts must be 280 characters or less, may include images, and users may define their topic(s) by using hashtags.

Users are also capable of browsing their news feed and reviewing a list of accounts the application predicts they may want to follow.

Technologies:

- TailWind CSS
- Next.js
- Firebase