Play-by-Play

NFL game companion application

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Who Are We?

Jake Hannah

Colin Lewandowski

Cayden Maag

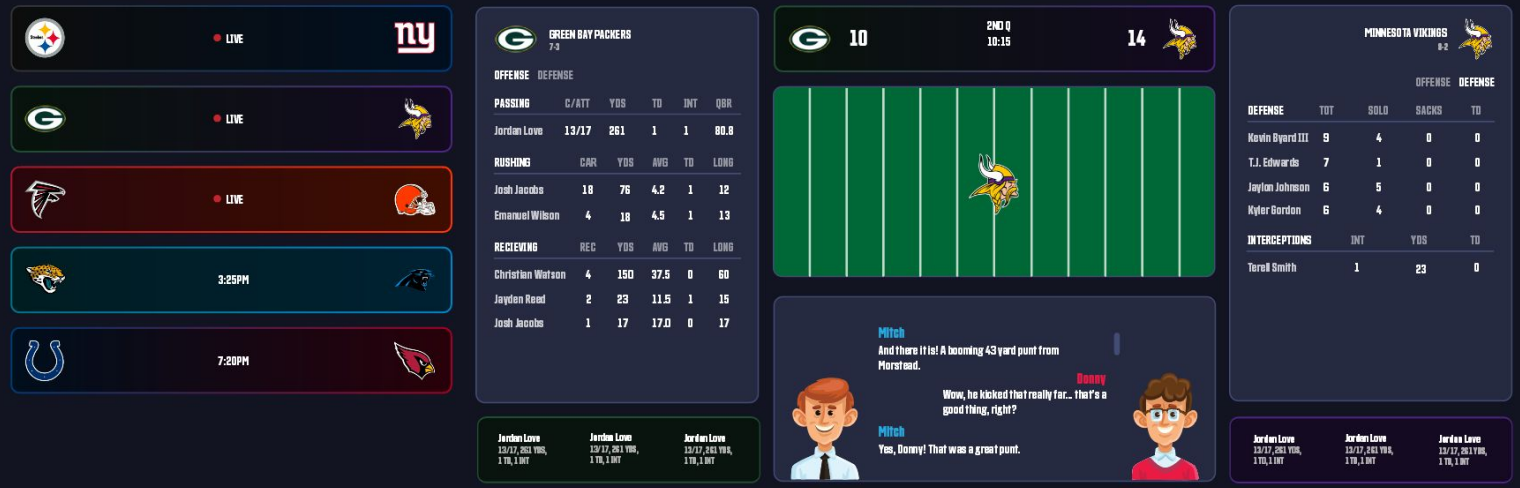
Brogan Murray

Derya Fathroen

Zach Rongstad

Our vision

Create an immersive web application utilizing ESPN live updates for NFL games, that are commentated by AI.



Development Cycle

We chose an Agile development methodology for this project.

Sprints:

1) One-week prior to midterm.
2) Two weeks following midterm.

After each sprint we gathered to discuss process and issues we faced.

Incremental changes were pushed to a GitHub repository using Git branching.

ESPN API

The ESPN API was utilized to retrieve live data, player statistics, and team information from ESPN's database

This was accomplished by making different calls to ESPN's NFL API endpoints through C#'s HttpClient class, which allows us to send and send HTTP requests and receive responses

Specifically, we retrieved:

- Team
  - Names
  - Logos
  - Colors
  - Records
  - Rosters
- Game
  - Live plays
  - Scores
  - Player statistics
- General
  - Week schedule
  - News articles

Back End (Brogan)

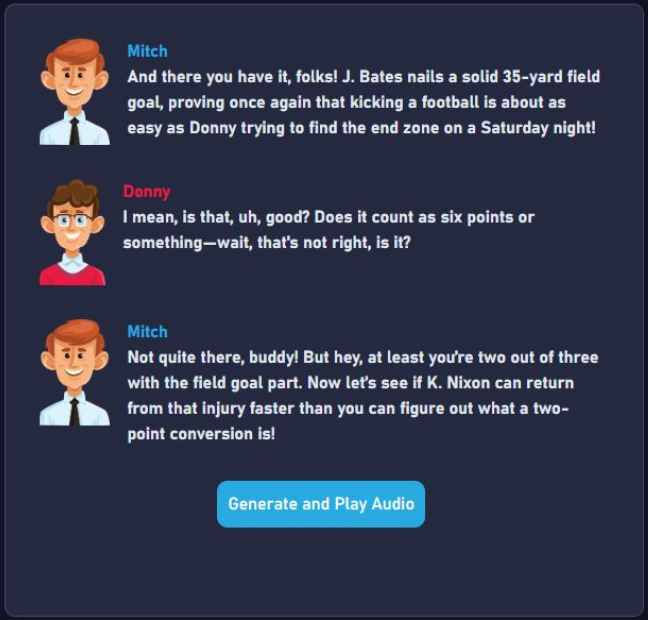
OpenAI Chat & TTS API

OpenAI API offers its chat models (GPT 4o, 4o mini, ...) through an API endpoint for asynchronous text generation. For this project, we fed live ESPN API data for current plays into the 4o mini model. The output received composed the chats for our commentators, Mitch and Donny.

OpenAI API requires:

- API Key
- Token Balance (4 characters per token generated)
- Endpoint connection via HTTP Client

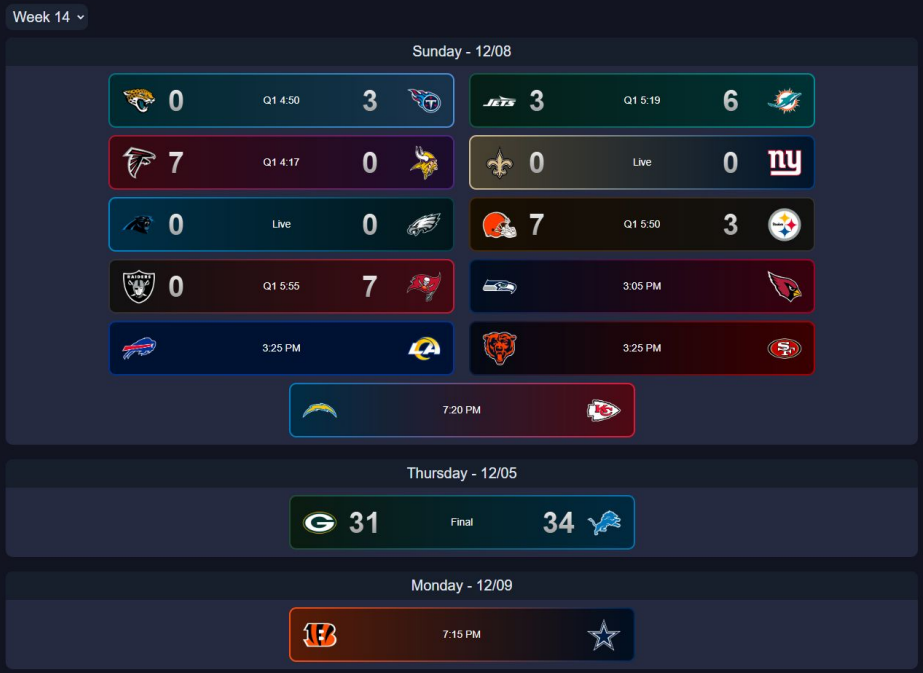
OpenAI TTS: Our generated commentary is then fed into their TTS endpoint, which returns a byte string for an mp3 file. This stream is input for Mitch and Donny's vocal commentary.



Back End (Brogan)

OpenAI Chat & TTS API

Home Page


Week 14
Sunday - 12/08
0 Q1 4:50 3
3 Q1 5:19 6
7 Q1 4:17 0
0 Live 0
0 Live 0
7 Q1 5:50 3
0 Q1 5:55 7
3:05 PM
3:25 PM
3:25 PM
7:20 PM
Thursday - 12/05
31 Final 34
Monday - 12/09
7:15 PM

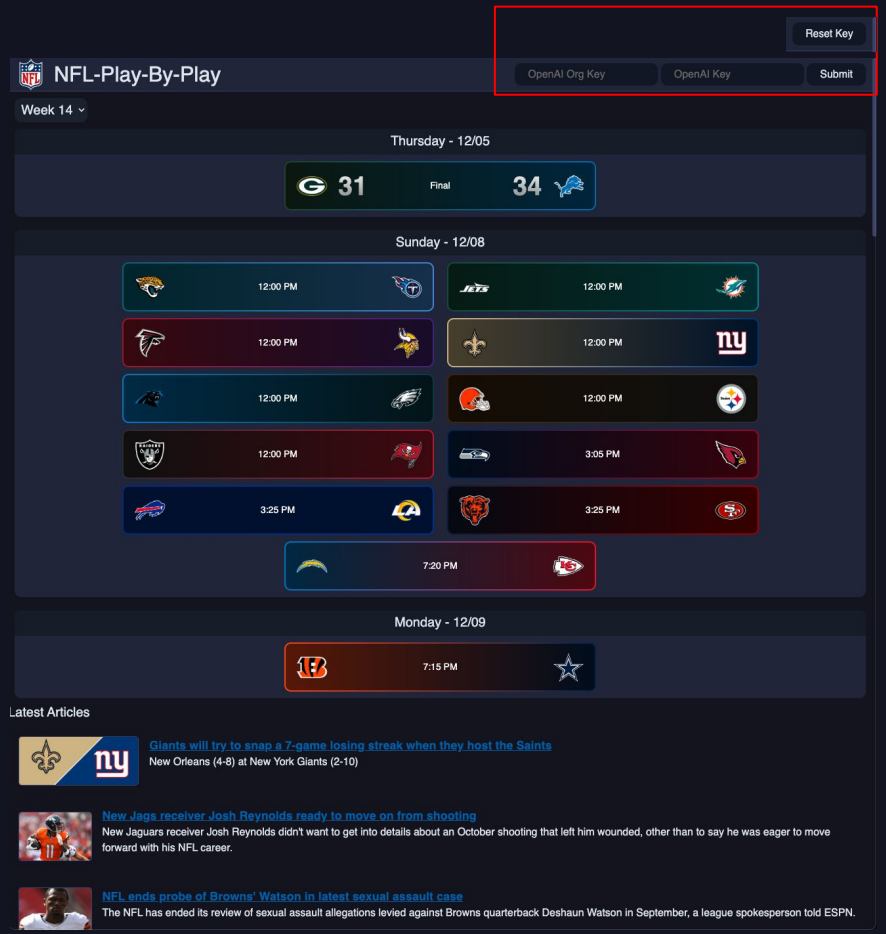
HomePage

OpenAI Key

In order to access the commentators feature of our app the user needs to provide their own OpenAI api key.

For this we included:

- Input for org key
- Input for personal key
- Reset button to input new key



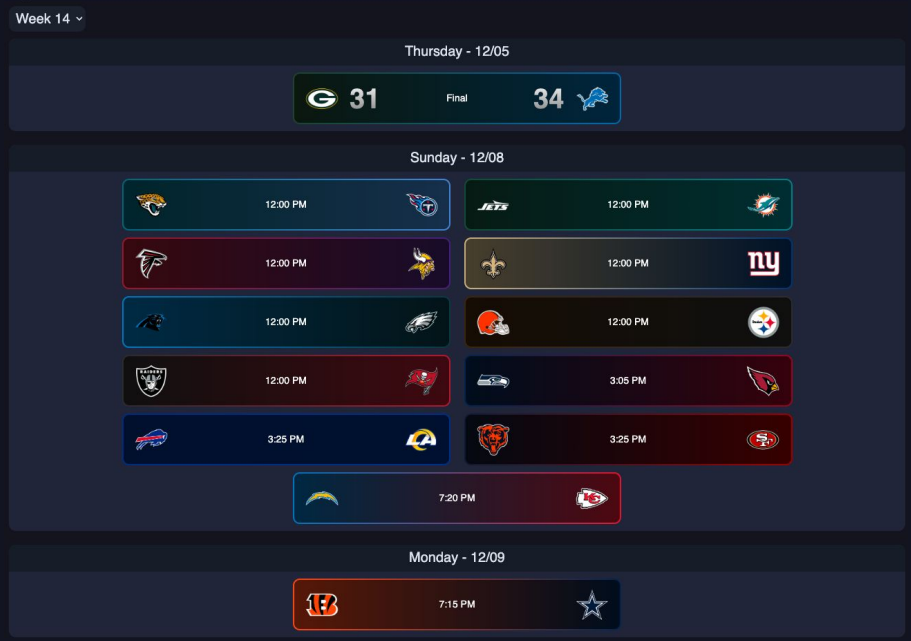
HomePage

Game Banners

In order for the user to view all of the games for a given week, we display a custom game banner based on the game being played.

For this we included:

- Week selector
- Sorted list of games
- Custom banners



News

We were able to access news articles by sending a request to the ESPN NFL articles endpoint.

From there, we retrieved:

- Headlines
- Descriptions
- Images
- A URL that points to article

Bengals place LB Logan Wilson on injured reserve with knee injury

The Bengals have placed linebacker Logan Wilson on injured reserve with a knee injury, the team announced Friday.

Giants will try to snap a 7-game losing streak when they host the Saints

New Orleans (4-8) at New York Giants (2-10)

New Jags receiver Josh Reynolds ready to move on from shooting

New Jaguars receiver Josh Reynolds didn't want to get into details about an October shooting that left him wounded, other than to say he was eager to move forward with his NFL career.

NFL ends probe of Browns' Watson in latest sexual assault case

The NFL has ended its review of sexual assault allegations levied against Browns quarterback Deshaun Watson in September, a league spokesperson told ESPN.

ESPN+ Cheat Sheet: Our best fantasy football advice for Week 14

We've curated a week's worth of our best fantasy football advice in a single game-by-game cheat sheet so you can quickly make your lineup decisions for Week 14.

Game Page

Green Bay Packers
9-4

OFFENSE DEFENSE SPECIAL TEAMS

PASSING	C/ATT	YDS	AVG	TD	INT	SACKS	QBR	RTG
Jordan Love	12/20	206	10.3	1	0	1-7	92.4	111.7

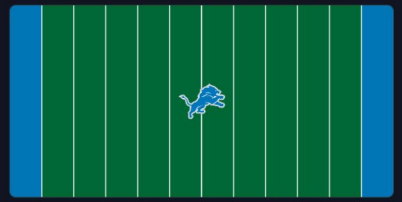
RUSHING	CAR	YDS	AVG	TD	LONG
Josh Jacobs	18	66	3.7	3	19
Jordan Love	4	23	5.8	0	14
Emanuel Wilson	1	7	7.0	0	7
Chris Brooks	1	3	3.0	0	3

RECEIVING	REC	YDS	AVG	TD	LONG	TGTS
Christian Watson	4	114	28.5	0	59	7
Dontayvion Wicks	4	49	12.3	0	26	5
Tucker Kraft	3	41	13.7	1	21	5
Ben Sims	1	2	2.0	0	2	1
Jayden Reed	0	0	0.0	0	0	1

FUMBLES	FUM	LOST	REC
Christian Watson	1	1	0

PASSING	RUSHING	RECEIVING
Jordan Love	Josh Jacobs	Christian Watson

31 Final 34



Mitch
And there you have it, folks! J. Bates nails a 35-yard field goal like a seasoned pro—no pressure at all! You know, Donny, if I had a dime for every perfect kick, I could buy you a clue!

Donny
Ha! That's a good one, Mitch! But wait, does that mean we keep score on kicks, too? I thought we just counted touchdowns and snacks!

Mitch
Well, Donny, field goals are like the appetizers of football—important but nobody comes for just that! So, keep your snacks and your stats straight, my friend; we want you armed with more than just nachos next Sunday!

Generate and Play Audio

Detroit Lions
12-1

OFFENSE DEFENSE SPECIAL TEAMS

PASSING	C/ATT	YDS	AVG	TD	INT	SACKS	QBR	RTG
Jared Goff	32/41	283	6.9	3	1	1-3	90.9	109.7

RUSHING	CAR	YDS	AVG	TD	LONG
David Montgomery	14	51	3.6	1	13
Jahmyr Gibbs	15	43	2.9	0	20
Amon-Ra St. Brown	1	10	10.0	0	10
Jared Goff	4	7	1.8	0	9

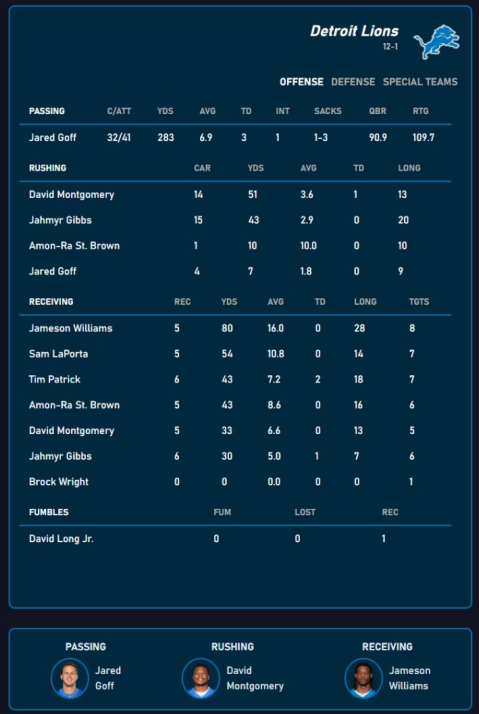
RECEIVING	REC	YDS	AVG	TD	LONG	TGTS
Jameson Williams	5	80	16.0	0	28	8
Sam LaPorta	5	54	10.8	0	14	7
Tim Patrick	6	43	7.2	2	18	7
Amon-Ra St. Brown	5	43	8.6	0	16	6
David Montgomery	5	33	6.6	0	13	5
Jahmyr Gibbs	6	30	5.0	1	7	6
Brock Wright	0	0	0.0	0	0	1

FUMBLES	FUM	LOST	REC
David Long Jr.	0	0	1

PASSING	RUSHING	RECEIVING
Jared Goff	David Montgomery	Jameson Williams

Statistics

- Provides team and player stats for Offense, Defense, and Special Teams
- Fetches data dynamically from the ESPN NFL boxscore API using HTTP requests
- Highlights top offensive performers
- Fallback messaging to ensure smooth user experience when data is unavailable



Front End (Cayden)

Field UI

- Simple football field diagram to represent the home team of each game
- The live plays are drawn onto the football field to illustrate the two major types of plays
- The position of the ball on the field is also drawn in with the logo of the team with possession above that dot

Demonstration

Reflections

Challenges & solutions:

- ESPN Api updates for the play-by-play endpoint oftentimes occur infrequently.
- Proper variable states and page reloads were difficult to navigate with blazor. Microsoft documentation provided the needed context to solve this issue.
- Improperly structured repository–solved using a git version control revert to a different home folder.

Moving forward:

- Starting earlier with development and feature refinement.
- Keeping Main and Develop branches up to date.

Q&A