UFC Outcome Predictor – Design Overview

Project Goal

Develop a web-based tool that predicts the winner of a UFC fight between two fighters, using scraped historical stats to calculate win probabilities and visually display matchup information.

User Flow (Confirmed First Iteration)

1. **Top Bar – Weight Class Selection**

   - Changes based on selected gender (evenly spaced, looking nice)

   - Selected class is highlighted

2. **Fighter Selection**

   - Two dropdown menus for choosing fighters

   - Dropdowns are **filtered** by selected weight class and gender so only appropriate fighters are options. Beginning iterations will use a sample of select, recent fighters, but when more want to be added, switch to a type-in search selection

   - Profile photos appear above each menu after selection

3. **Run Simulation**

   - Press "Enter" or a button to calculate prediction

4. **Output**

   - Simple win percentage for each fighter

   - Scroll down for:

     - Stat-by-stat comparison

■ Graphs or visualizations (A great reference I found on my phone is the Pacers app with plenty of great examples of stat displays and UI)

■ Style matchups or other contextual notes

Core Features

- **Web scraping** to collect stats from multiple sources

- **Stat weighting system** based on correlation with win outcomes

- **Dynamic calculation algorithm** for predictions

- **User interface** optimized for clarity and simplicity

- **Fighter filtering** to keep dropdowns manageable and relevant

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Technological Constraints

- No API, must rely on scraping with potential inconsistencies

- Web scraping sources must be uniform enough to support clean parsing

- Some stats may not exist for all fighters or fights (missing data handling needed)

- * Without the ability to view stats at any time, won't be able to look at prime stats, or a given time period, but only stats updated at last time fought. Not a fair representation for, say, retired fighters

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Target Users

- Casual UFC fans

- Students interested in stats/analytics

- SEP-like audience evaluating usability and design sense (please hire me)

Problem Being Solved

Give users a way to preview potential outcomes of a fight using historical data, without requiring deep UFC or data science expertise. Provides answers to "what if?" matchups fans may never get to see.

Design Decisions

- **Dropdown scalability** is addressed by limiting results to gender + weight class

- **Visual hierarchy**: Output is clean and informative, detailed stats hidden beneath simple prediction at the top and wont muddy up a more simple experience if that's all the user wants

- **User feedback**: Fast, intuitive interactions (e.g., images appear instantly, stats load on button press)

Algorithm (High-Level)

1. Scrape relevant stats (e.g., striking %, takedown defense)

2. Analyze how frequently a higher stat leads to victory

3. Weight each stat accordingly (e.g., if striking accuracy wins 60% of the time, assign weight 1.6)

4. Sum weighted stats for both fighters

5. Output win chance as a percentage split (with room for other output details like round prediction later)

Planned Future Features (Optional)

- Expand database with more fighters (implement search, replace dropdown), support timeline-based analysis

- Predict round or finish method (KO, submission, etc.) (could also be with its own percentage chance)

- Add fight-specific filters: 3-round vs 5-round fights, recent performance only, etc.

- Introduce Elo-style rating system for longitudinal analysis (could be its own display or implement it as a stat for the algorithm to consider)

- Pull stats from specific places in time (say prime new fighter vs. prime old fighter) via calculating averages at certain points in time, myself, looking round by round in each fight up to said moment. Maybe 5 or something more recent fights would be more accurate but that is for later.

- Multi-sport extension (e.g., boxing, kickboxing) (this would require reformatting UI if top and bottom bars are already used for weight class and gender, respectfully)

- Implement search/autofill menus instead of dropdowns when scaling up

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References (for document and project)

- [UFC Stats Database](#)

- UFC Elo Engine Project: [Pt 1](#) [Pt 2](#)

- [Tapology stats website](#)

- [Fight Matrix Stats](#)

- [Odds Shark Stats](#)

- [Sherdog Stats](#)

- Pacers App UI Samples:

Screen 1

📅 7-2 | P | TBD | C | 5-3 👤
Schedule | | AWAY | | Profile
Rocket Arena
93.5/107.6 The Fan

Latest **Stats** Roster Standing

| **Averages** | **Totals** |

SPLIT	G	PTS	FG%
Oct	4	124	50.7
Oct	5	115.4	48.2
Nov	15	114	48.7
Dec	14	115	48.8
Jan	12	119.5	50.3
Feb	12	118.4	48.7
Mar	17	119.4	49.1

P | 🏀 | ✖ | 🎟 | 🏟
Team | Game | | Tickets | Arena

Screen 2

📅 7-2 | P | TBD | C | 5-3 👤
Schedule | | AWAY | | Profile
Rocket Arena
93.5/107.6 The Fan

Game

Season Averages

PPG	OPPG	FG%
117.7	112.2	50.1
2nd	–	1st

3PT%	REB	AST
40.6	41.5	29.7
1st	11th	1st

STL	BLK	TOV
6.8	6	12.8
11th	5th	12th

Screen 3

📅 7-2 | P | TBD | C | 5-3 👤
Schedule | | AWAY | | Profile
Rocket Arena
93.5/107.6 The Fan

Game

Team Leaders

POINTS PER GAME	FIELD GOAL %
18.8	66.7
Siakam	Johnson

REBOUNDS PER GAME	BLOCKS PER GAME
6.5	2.5
Nesmith	Turner

STEALS PER GAME	ASSISTS PER GAME

Screen 4

📅 7-2 | P | TBD | C | 5-3 👤
Schedule | | AWAY | | Profile
Rocket Arena
93.5/107.6 The Fan

Game

| Heat | **Pacers** |

Last Five Games

TUE MAY 13
W 114 | P | FINAL AWAY | C | 105 L
Rocket Arena

SUN MAY 11
L 109 | C | FINAL HOME | P | 129 W
Gainbridge Fieldhouse

FRI MAY 09
W 126 | C | FINAL HOME | P | 104 L
Gainbridge Fieldhouse

TUE MAY 06