Team Members: Ahmad Basyouni, Alysa Vega, Miguel Luna

Project Idea: Not decided yet, Absurd Words-??? , Crane-???

Weekly Check Ins

Due on 11/05/24

- AHMAD:
    - Build the worlde game on streamlit
    - DONE
- ALYASA:
    - Get AI suggestions for next world.
    - Use the api inferences for HuggingFace.
    -
- MIGUEL:
    - Get the code for what was done in the 3b1b video.
        - Understand whats going on in the code.
    - Wordle code description

Due on 10/29/24

- MIGUEL: Make wordle in python that you we can eventually do what we want with it.
    - 2hrs
    - ACTUALLY TOOK [all day]
    - https://github.com/ahmadbasyouni10/AI-ML-Football-Analysis-CV-system/blob/main/wordle.ipynb
    -
- Build a template streamlit app with a wordle grid:
    - 5hrs →
    - Actually took about 5 hrs.
-

10/15/24

- Each member find one tutorial on HOW to do the information video in python. How do you equate information game in Wordle?
    - AV: Coding 3Blue1Brown's Solving Wordle In Python - No talking | ASMR V…
    - AB: Coding 3Blue1Brown's Solving Wordle Using Information Theory In Pyt…
    - ML: https://github.com/woctezuma/3b1b-wordle-solver?tab=readme-ov-file

10/8/24

Pivoting to Wordle

- Redefine MVP of wordle
    - ML: input is word, output is information gain score? And tell you the best word you could use.
    - AB: Have user provide green and yellow.
    -
- What does your MVP look like?
    - What exactly you are going to do
    - How exactly you are going to do it

- **Overall concept:**

  The game Wordle tasks players to find a certain five-letter word in six attempts, providing clues with each try such as the correct letters in the word and correct positions of each letter in the word. The word used for each game changes daily and is the same for every person each game on that day. We are thinking about making a dashboard application that provides word statistics and analysis to help users play Wordle.

  Main viable project will include the following features:

    - Deriving the best opening word and subsequent plays to use in Wordle
    - View and analyze letter frequency of used and unused words
    - View and analyze average past word difficulty (based on tweets of Wordle results)

- **Team member main tasks:**

- Ahmad: Data modeling and analysis for Wordle helper (best opening word and best subsequent plays)
- Alysa: Web application development (frontend and backend)
- Miguel: Data modeling and analysis for dashboard (based on word statistics and player data)

These roles are tentative and could change. We'll all be doing some data science and web development at some point, and assist each other whenever needed outside of these main roles, so we'll all be a part of each step.

- **Scaling Ideas:**
  - Option to randomize first word instead of using statistical best
  - Minimizeable sidebar with statistics and more DS stuff
  - Option to do other day Wordles after todays

- **Challenges:**
  1. Data column matching:
     - Some datasets contain only the Wordle number, while others contain only the date of a Wordle game.
  2. Player analysis:
     - What metrics would be the most useful to provide about Wordle players: both the average and the more hardcore Wordle players?
     - What algorithms or methods will we use to implement them?
  3. Scope:
     - What or how many additional features can we add to our project that allows us to flesh out the project without diminishing the overall project or having it become too overwhelming?

- **Solutions:**
  - The video by 3Blue1Brown already provides us with the process of how the best Wordle opener is found

- We can convert Wordle number into date simply by finding the date of the first Wordle game and adding the corresponding number of days after.

- **Risks:**

  We are unsure if the 3Blue1Brown video implements a machine learning model, or is just effective manipulation of datasets. We would implement a machine learning model somewhere in our application, but we are unsure of how it can be applied.

- **Implementation:**
  1. Dataset processing + analysis, model development (Python via Jupyter, Colab)
     a. Word prediction via logistic regression
  2. Frontend and backend application interfaces (**Streamlit**, React + Node, etc.)

Possible Datasets:

1. WordleTweets | Kaggle
2. wordle.csv - Gigasheet
3. A dataset of Wordle words and supplemental metadata

Helpful Videos/Tutorials:

1. Solving Wordle using information theory
2. Oh, wait, actually the best Wordle opener is not “crane”…
3. 3Blue1Brown’s Python code used for the video
4. Streamlit
   a. Wordle Solver - Build & Deploy Streamlit App #8daysofstreamlit Tutorial -…
   b. Streamlit Introduction | Complete Streamlit Python Course | Streamlit Tutor…