Wordle rush

Summary: In this exercise, you will study the popular word game Wordle and write a series of programs related to it.

Chapter 1

Introduction

Wordle is a web-based word game developed by Josh Wardle. Players have six attempts to guess a five-letter word, with feedback given for each guess in the form of colored tiles indicating when letters match or occupy the correct position. The mechanics are nearly identical to the 1955 pen-and-paper game Jotto and the US television game show Lingo. Wordle has a single daily solution, with all players attempting to guess the same word.

Wardle initially created the game for himself and his partner to play, eventually making it public in October 2021. The game gained a large amount of popularity in December 2021 after Wardle added the ability for players to copy their daily results as emoji squares, which were widely shared on Twitter. Many clones and variations of the game were also created, as were versions in languages besides English. The game was purchased by The New York Times Company in January 2022 for an undisclosed seven-figure sum, with plans to keep it free for all players; it was moved to their website in February 2022.

[Source: Wikipedia]

Chapter 2

Game rules

The official game is at https://www.nytimes.com/games/wordle/index.html. The rules are simple:

- The goal is to guess a 5 letter word from the English language.
- Players have 6 guesses.
- After each guess, the game indicates which letters from the guess are not in the word, which are but not in the right spot, and which are in the correct spot.
- Players attempt to guess the word in as few attempts as possible.

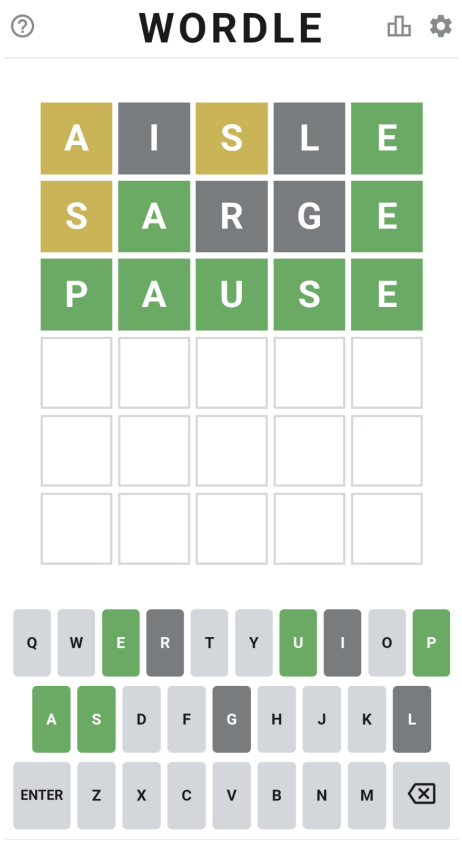

Figure 2.1: Screenshot of Wordle

The game offers only one word per day, the same for all players, allowing people to compare their results on social media.

Chapter 3

Instructions

You can use the languages, libraries, frameworks or tools of your choice. The focus of this exercise is analysis, logic and testing hypotheses.

3.1 Assistant

Write a program that helps a Wordle player: at each step, with the information given by the game so far, display a list of all possible remaining words.

Once your program is functional, try to design a practical user interface.

3.2 Player

Write a program that plays the game by itself: at each step, it should decide what word to put in as guess.

Some considerations:

- Can you figure out a good strategy to play the game?
- How can you measure how well your program plays? How to compare different players?
- Is your strategy optimal? How do you define optimal in this context?

Chapter 4

Bonuses

- Implement the original game yourself
- Modify your program(s) in such a way that they can be automatically tested and measured
- Is it possible to cheat at Wordle?

Chapter 5

Evaluation

As usual, the evaluator will clone your git repository, and should be able to run your project themselves. Since you have the choice of language and tools, make sure that your project can run on the school iMacs, and to include instructions on how to install the requirements.

If you write your project in C, you are not required to follow the Norm. However, regardless of the language, you are still expected to provide source code that compiles and/or runs without errors.