wordblast.io

CS307: Project Backlog - Team #19

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Problem Statement

21% of American adults are illiterate/functionally illiterate. Our goal is to build "wordblast.io", a turn-based word typing game where players must type a word that contains a given word combination. We believe that it is a fun and simple word game to develop our citizen's spelling, vocabulary, and typing abilities with a high potential to be popular. In addition, existing implementations do not take the traditional easy-to-use .io game approach. We will build this implementation.

Background Information

- Our target audience are kids and teenagers, as they are most inclined to play browser based games. However, the game should be simple enough to understand so that people of all ages are able to play.
- Virtual and physical implementations exist, such as jklm.fun and Word Bomb (virtual) and Pass The Bomb (physical). Since our implementation will be a website, we will be competing with other virtual implementations.
- Existing implementations require too much user interaction to join a game. For example, you have to download Roblox in order to play Word Bomb, and there is no option to quickly jump into a game in jklm.fun (the UI is a little complicated - you need to first select the game type then click to enter an existing room). Ideally a player should be able to enter a game on-demand with as few clicks as possible.
- Existing implementations have limited functionality. Some examples are that they do not allow you to choose which type of words (i.e. verbs, nouns, adjectives) to place into the word pool, the definition of submitted words is not given, there are no leaderboards, and there is no XP/ranking system.

Requirements

Functional

1. As a player, I would like a username input form, so that I can login anonymously and immediately play the game

2. As a player, I would like to have the bomb indicating whose turn it is, by pointing it to that player.
3. As a player, I would like the specified letter combination to be highlighted so that it is easier to visualize.
4. As a player, I would like a "play with friends" option so that I can join a game lobby with friends.
5. As a player, I would like the option to change my name while in the game lobby.
6. As a player, I would like to enter a game lobby before the game starts so I can see who is ready to play.
7. As a player, I would like the game to start once everyone in the game lobby has readied up.
8. As a player in a private lobby, I would like to have a custom URL to give to my friends so they can easily join my game.
9. As a player, I would like to be able to create an account so that I can track my progress.
10. As a player, I would like to lose a life whenever I am unable to come up with a valid word.
11. As a player, I would like to gain a life when I use all letters of the alphabet at least once.
12. As a player, I would like a visual representation of which letters I have used so that I can track my progress towards an extra life.
13. As a player, I would like to be shown the definition of a word after it has been submitted.
14. As a player, I would like a single player mode so that I can hone my skills.
15. As a player, I would like to chat with other players in the same game.
16. As a player, I would like to be able to play in languages other than English.
17. As a player, I would like to gain more XP after each successful word I type.
18. As a player, I would like to be able to view my game statistics and see a summary of my games, including my average word length, most used words, and average typing speed.
19. As a player, I would like to be able to see my user level.
20. As a player, I would like to be able to view the leaderboards page which hosts a list of the top performing players.
21. As a player, I would like copy/pasting to be disabled so that the game is fair.
22. As a player, I would like the option to set my custom game as public, so that random players can join.
23. As a player, I would like to have a tutorial/walkthrough option.
24. As a player, I would like to choose background themes.
25. As a player, I would like to be able to input custom words into the word pool.
26. As a player, I would like the option to play with players who are the same level as me.
27. As a player, I would like to be able to customize the settings of a game.
28. As a player, I would like to be able to view the game settings while in game.
29. As a player, I would like to have background music and sound effects.
30. As a player, I would like the option to toggle a profanity filter in the actual game and in the chatroom.
31. As a player, I would like to be able to see the amount of players currently online.
32. As a player, I would like to have the ability to toggle between light and dark mode.

33. If time allows: As a player, I would like to be able to earn credits that can be spent in an in-game store.
34. If time allows: As a player, I would like to choose an avatar in the lobby and be able to buy more avatars in the store.
35. If time allows: As a player, I would like the website to be responsive, so that I can play on any screen size.

Non-functional

- We plan to develop the application with a separate frontend and backend. This will allow us to effectively divide our work, and mitigate compatibility problems between the frontend and backend.
- We plan to use a React frontend and a Spring backend. They will communicate via sockets as well as HTTP requests. We will use MongoDB as our database.
- Web requests to our frontend and backend should be cached within the user's browser. This way, the next time they visit our webpage, load times are much quicker.
- We would like to get our response time below 200ms, but it obviously depends on where the user resides.
- Our website should also be online 24/7 and should only go down for less than 10 minutes per week, to hold an uptime percentage of over 99.9%.
- The backend should be able to hold 500 concurrent connections. If time allows, it should also scale automatically, to hold more concurrent users when necessary.
- The user interface should be very easy to navigate and the game should be displayed in a way that is easy to understand. It should take very few clicks to enter a game. This game should support players of all ages, so the UI should be designed in a way so that both a five year old, as well as an eighty year old, should be able to navigate.
- Since our frontend and backend are separate, they can also be deployed and updated separately. We plan to deploy our frontend and backend with AWS.