

# Design Review 3

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# Problem Statement

## Alzheimer's Disease

Neurodegenerative disease, years to progress,  
cognitive decline finally results in organ failure

30 million deaths worldwide / year

\$259 billion American healthcare, \$1 trillion 2050

Mental/social stimulation may reduce risk of AD

Existing platforms don't offer social components



# Problem Statement

## WordScuffle™

Multiplayer word game created by Barbara Jenkins

Supports cognitive and social brain flexing

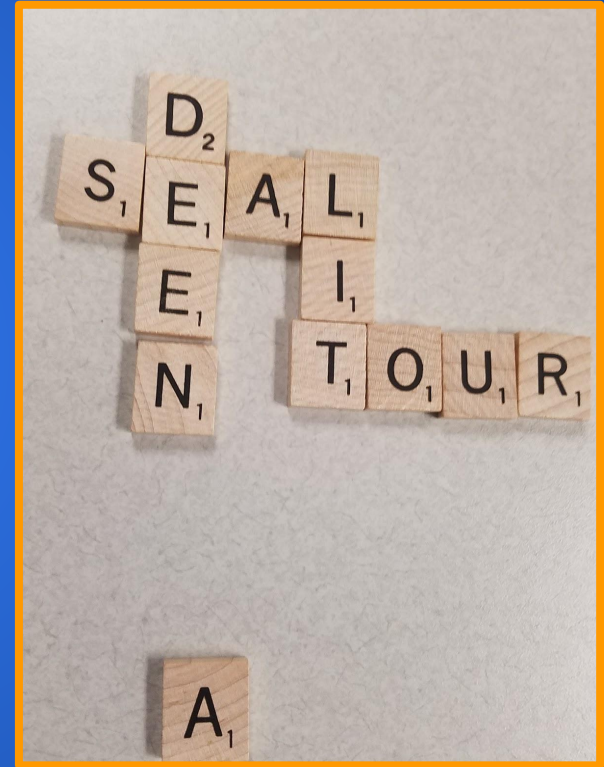
13-Letter tile set generated for each round

Players have three minutes to form word combos

Players roll dice to determine letters  $\Rightarrow$  cumbersome

Each player keeps their own score  $\Rightarrow$  time, errors

Players email their scores/results  $\Rightarrow$  time, energy



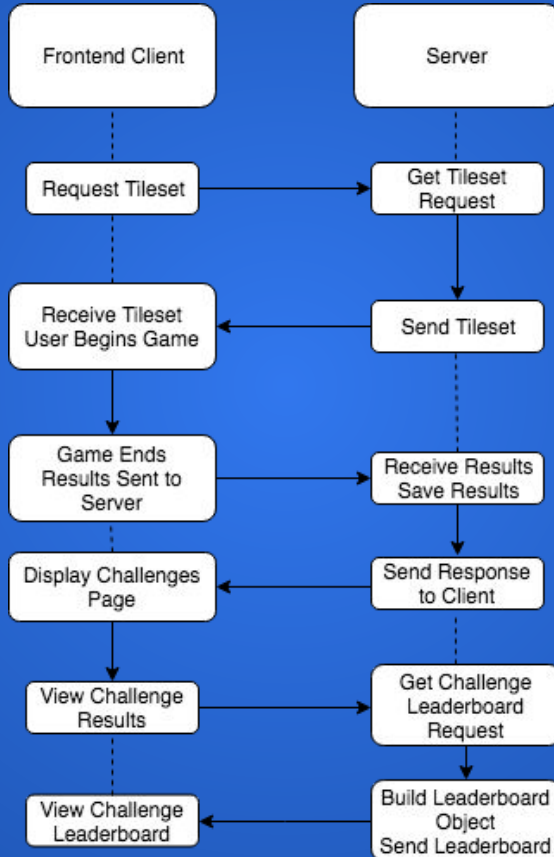
# Solution Overview

WordScuffle™

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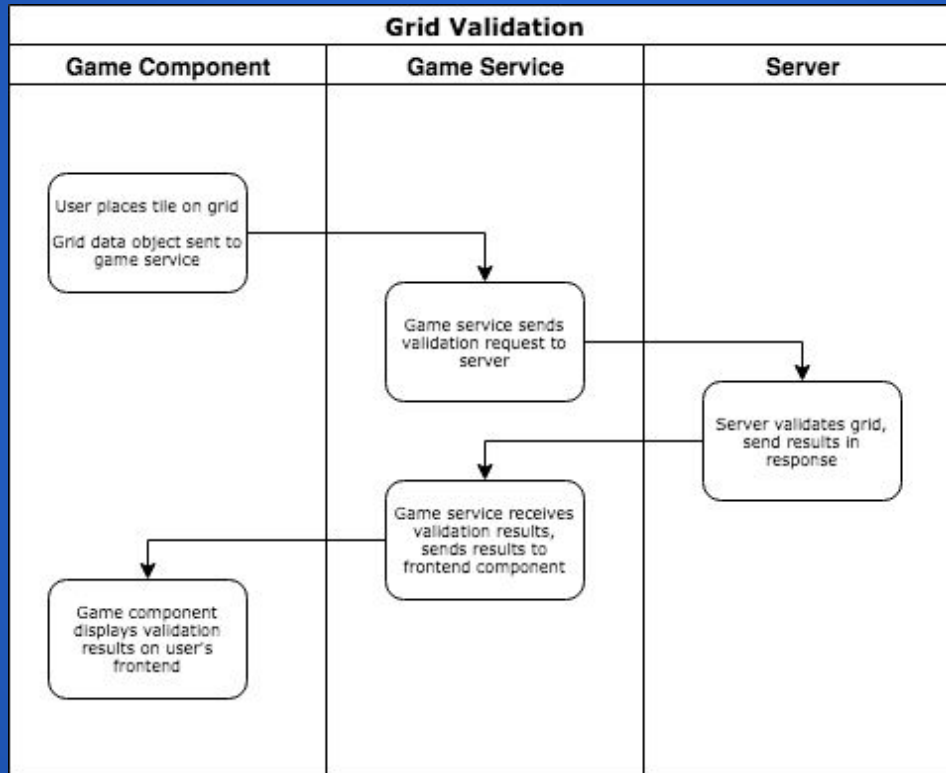
# Solution Overview



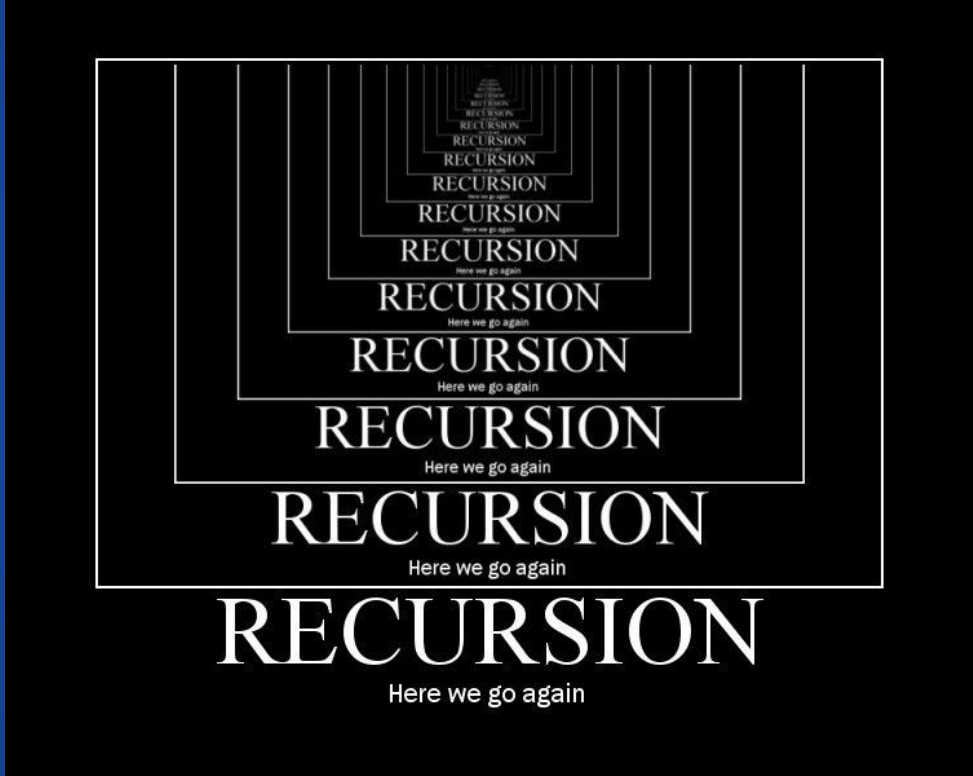
# Requirements

- Implement WordScuffle Gameplay
- Instantaneous word grid validation
- Provide daily challenges for Users
- Allow users to add friends
- Provide challenge leaderboard based on Friend's list.

# Implementation



# Grid Validation?





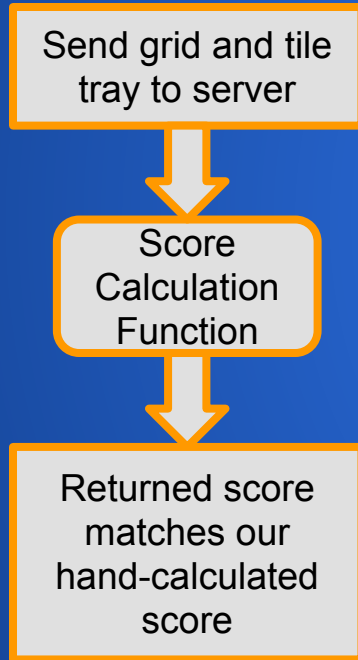
# Prototype Demo

The logo for WordScuffle is centered on a horizontal rectangular background with a light red-to-orange gradient. The word "Word" is in a bold, orange, sans-serif font, while "Scuffle" is in a bold, black, sans-serif font. A small "TM" trademark symbol is positioned to the right of the "e".

WordScuffle™

# Testing Plan

## Unit Testing



- Created these tests during development
- Function had to pass tests before added to the application
- Run tests again now that development is over

# Testing Plan

## Integration Testing

Admin page button only visible for users flagged as administrators

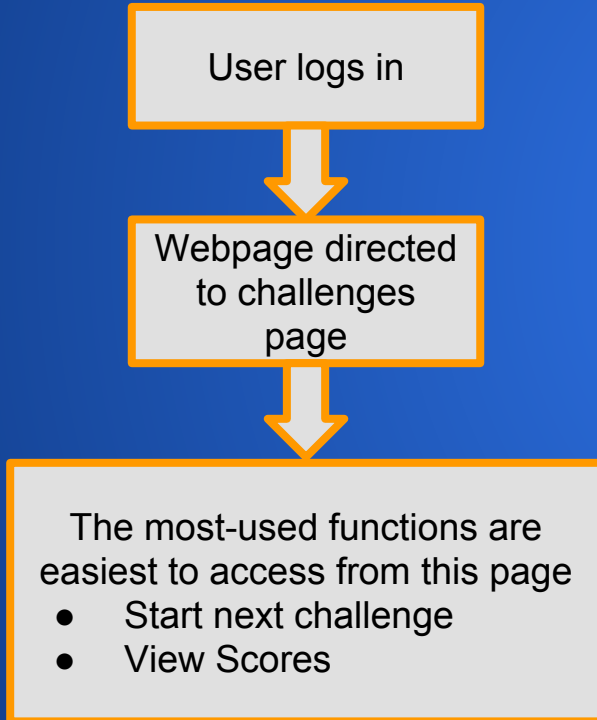


Server re-verifies user is administrator, then client webpage is redirected to admin page

- Created these tests during development
- Result achieved from multiple functions and application components
- Console debug output variables to follow what is happening.

# Testing Plan

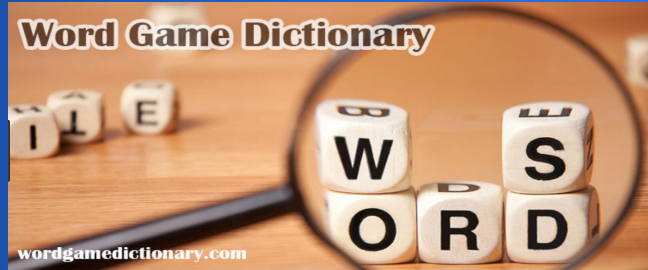
## Usability Testing



- Had usability in mind during development
- Designed to not need URL bar or back button in web browser
- Feedback from beta testers
- Information icons show instructions

# Challenges & Resolutions

## CHALLENGES



## RESOLUTIONS

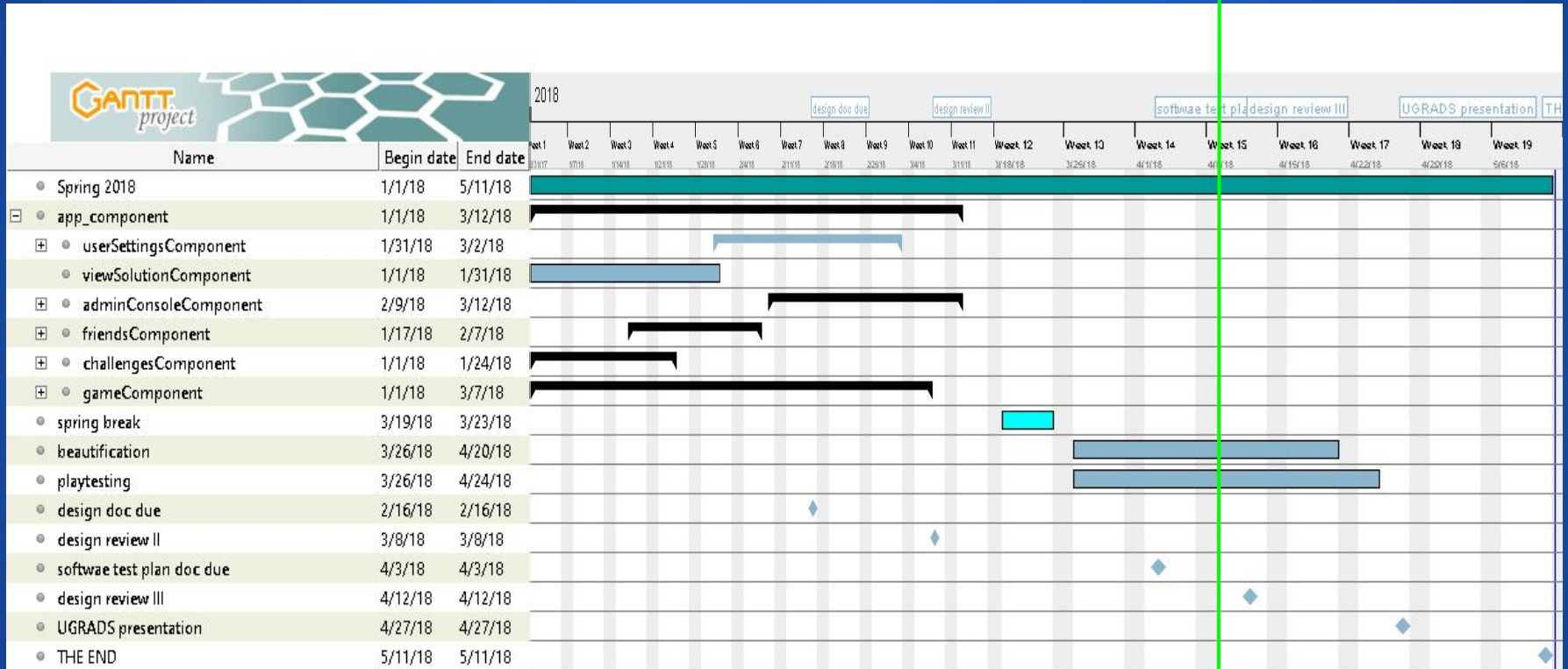
Loaded tournament word list into server side hash table.



Manually solved issue with Dragula and game grid.

# Schedule

NOW



# Conclusion

## WordScuffle™

Provides cognitive and social brain-flexing

Addresses gaps in existing platforms

## Realizing WordScuffle

As a dynamic web application

Resolving workflow problems

Furthering gameplay which may reduce AD risk



# WordScuffle™

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# Thank you!

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