

## CMPS 115

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# System and Unit Testing English with Sammy

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## *System Test Scenarios*

### Sprint 1:

- As a **user**, I want to choose an exercise of a Matching Pictures or a Matching Letters type that is more engaging and fun to interact with than a textbook so that I can learn new English words.
- As a **user**, I want to have a User Interface (UI) that is easy to use and navigate so that I can focus on studying.

### *Scenarios:*

1. Users access 'English-with-Sammy' [webpage](#).
2. Users select a Matching Pictures or a Matching Letters game.

### Functionality for each game :

3. Play each game without any delay.
4. Pick a category of words to practice (i.e. Fruits, Vegetables or Pets).
5. See loaded images for that specific category of words.
6. In Matching Letters:
  - a. Drag the letters into boxes so that it forms the word users see on the picture.

- b. Letters that were dragged should disappear and when they are dropped should be colored in green.
  - c. Users should not be able to drag / drop anything else.
- 7. In Matching Pictures:
  - a. Drag the words onto the pictures.
  - b. **Known Bug:** Pictures can be dragged onto words but are not supposed to be.
  - c. Pictures and words should disappear when they match.

## Sprint 2:

- As a **user**, I want to choose an exercise of a Crossword or a Typing Racing type that is more engaging and fun to interact with than a textbook so that I can learn new English words.
- As a **user**, I want to be able to play multiple games (Matching Letters, Matching Pairs, Typing Racer, Crossword) so that I don't get bored with one.
- As a **developer**, I want to have a filled out database and integrate it in the code, so that I do not have to manually write data.

### Scenarios:

1. Users access 'English-with-Sammy' [webpage](#).
2. Users access Games section of the [webpage](#) (<https://english-with-sammy.firebaseio.com/games>).

### Functionality for each game:

3. Users can choose one of four games when the user chooses 'games' on the navigation bar.
4. Based on what category the user chooses, they can learn different words (Fruits, Vegetables or Pets).
5. Play each game without any delay.
6. Images and vocabulary are shown in the game depending on the users' choice of category.
7. In Crossword:

- a. Crossword should be generated based on the category type.
  - b. Each number in the crossword should correspond with the text (clue).
  - c. Users should be able to *Shuffle* the crossword to generate a new one, *Cheat* on crossword to see answers, and *Check* the crossword to see what they got correct / incorrect.
8. In Typing Racer:
  - a. Words should be generated and shown to user one by one.
  - b. Words are shown in 2 rows on the top and the bottom and they move across the screen from left to right.
  - c. Users should be able to type the words they see and their score should get incremented if that word matches one of the words on the screen.
  - d. Users lose one of the “lives” (hearts) if the word goes out of the screen borders and they did not type it.
9. Firebase:
  - a. Every word should have at least one image in the Storage.
  - b. Every word should have the audio, img0, img1, img2, etc. attributes (as links to their Storage location) in the Database.

## Sprint 3.

1. As **a user**, I also want to choose the difficulty of the game, so that I can play the game with my unique game style and challenge or so I can challenge myself in multiple ways.
2. As **a user**, I want to choose the category of words, so that I can study words relevant to me.
3. As **a developer**, I want to integrate and document every game so that the user can enjoy multiple different games without any issues.
4. As **a developer**, I want to make a web page with a polished design so that it is more engaging and easy to use.

### Scenarios:

1. Functionality for choosing category and games:
  - a. User access to ‘English-with-Sammy’ and Games section of the [webpage](#).

- b. Users are navigated to a different screen where there are four different types of games they could select from (sorting implemented as buttons: All, Matching Letters, Matching Pictures, Crossword, Typing Racer).
  - c. Whenever they click on one of these buttons, only the games for that specific category should be shown.
- 2. Difficulty-related functionality:
  - a. There should be two types of crosswords: Image Mode (easier) where users fill in the words that match pictures and Text Mode (harder) where users fill in the words that match the description (the clue).
  - b. Each number in the crossword should correspond with the image / text.
- 3. Web page design
  - a. There is a universal navigation bar which helps users to look through all content on the webpage.
  - b. In the main page, users can look through basic web page introductions and teams' information.
  - c. In the game selection page, card images change smoothly responding to users' choice.

## ***Manual Unit tests***

1. Visit every route defined on our website (<https://english-with-sammy.firebaseio.com>) and make sure each game has a query String of the selected category:
  - /games
  - /games/matchingLetters?category=Fruits
  - /games/matchingLetters?category=Vegetables
  - /games/matchingLetters?category=Pets
  - /games/matchingPictures?category=Fruits
  - /games/matchingPictures?category=Vegetables
  - /games/matchingPictures?category=Pets
  - /games/crossword?category=Fruits
  - /games/crossword?category=Vegetables

- /games/crossword?category=Pets
  - /games/typingRacer?category=Fruits
  - /games/typingRacer?category=Vegetables
  - /games/typingRacer?category=Pets
  - / and /home
    - Home page
  - /home#team\_introduction
    - Team information page
2. Based on the parsed category (user selection), check whether each game generates appropriate words and:
- The same number of drag / drop buttons and one picture in Matching Letters game.
  - The same number of drag buttons and pictures in Matching Pictures game.
  - Words moving across the screen until user correctly types all of the words we have in the database (13-14 per category right now) or loses the Typing Racer game.
  - Boxes to fill in the words and clues (image / text format) in the Crossword game.
3. Test the difficulty selection in Crossword and Typing Racer games
- Crossword has a choice between Image and Text mode which changes accordingly.
  - Typing Racer “Easy” generates only one row of flowing words instead of two.