



Knight Foundation
School of Computing
and Information Sciences

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School of Computing
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Spring 2023 Senior Design
Project

Vocabulary In Reading Study
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Problem

Background of the website:

VIRS is a website dedicated to evaluate texts in such a manner that English Learners can understand at which level is a given text. It does so by giving specific statistics on the text's readability as well as the frequency of each word in the English language (that is contained in the provided text).

Issues resolved this semester:

- Fix characters left to translate: The length of characters left to translate does not reset when users translate files that are bigger than the remaining characters left to translate.
- No clear text button: There was no button to erase all texts entered by users at once.
- Fix Hyphenated words. If hyphenated words do not exist in the database, then search for each individually.
- No explanation for the words category column.

Old System

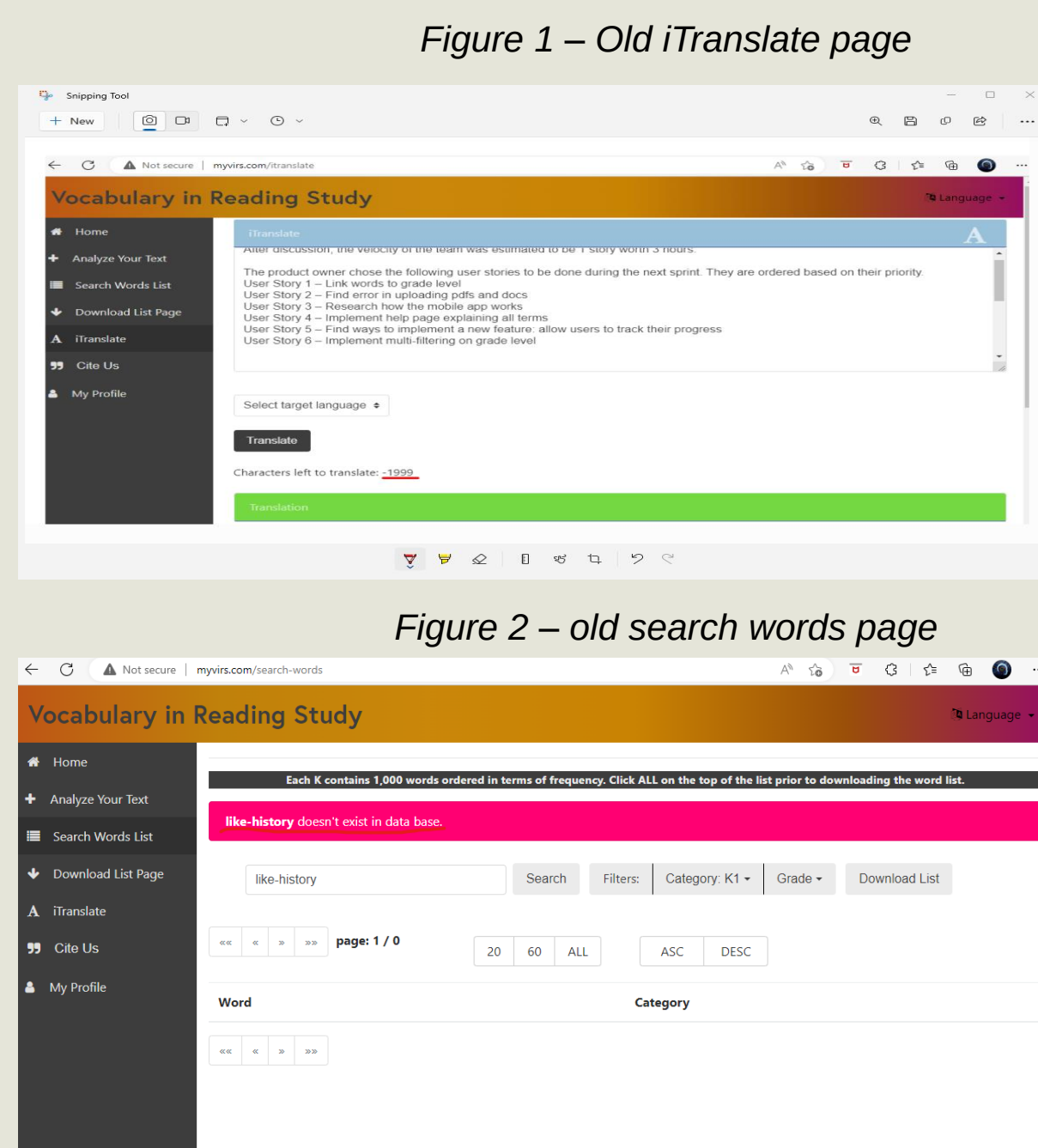
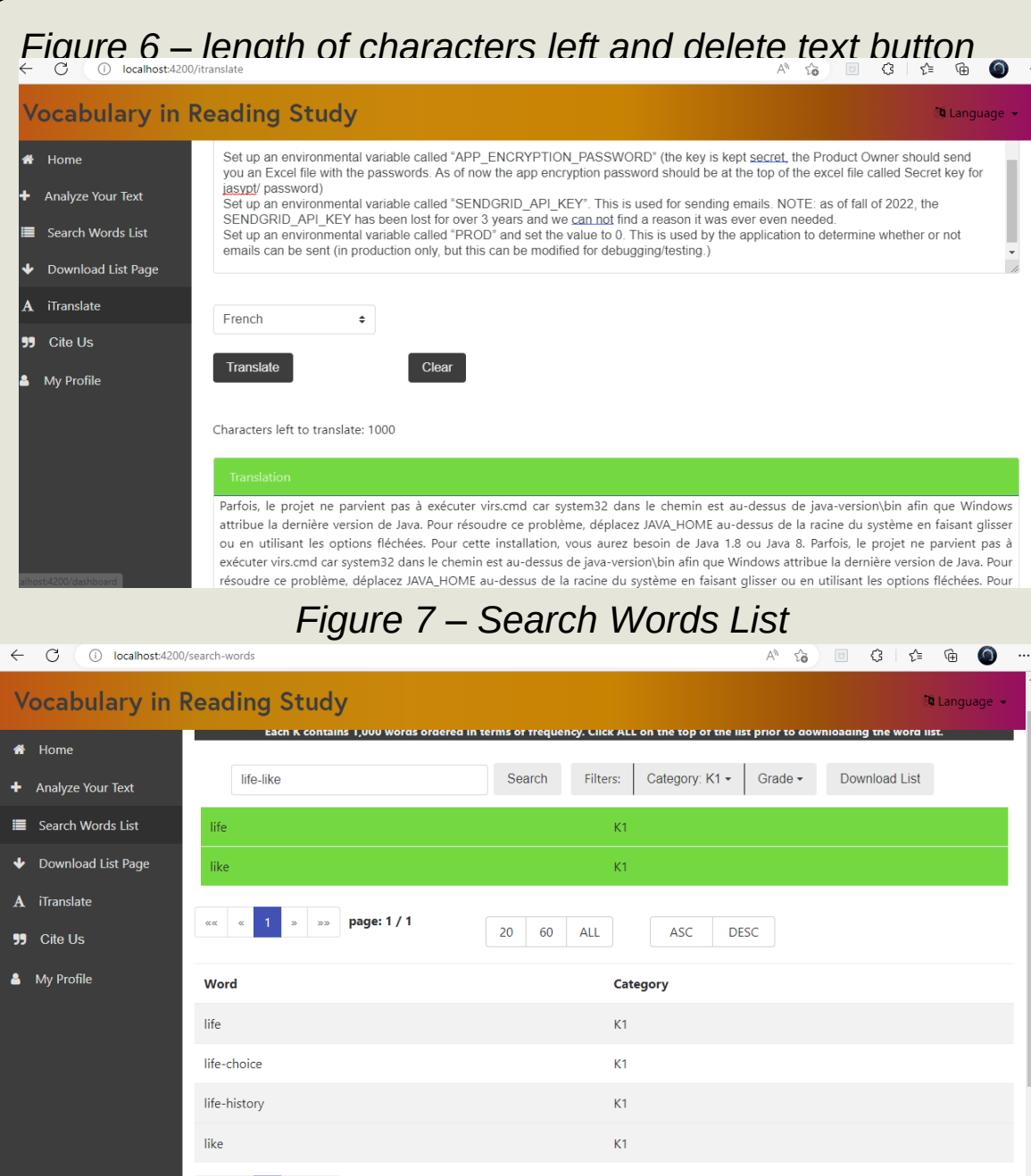


Figure 1 shows the length of characters left less than zero. And no visible clear text button. Figure 2 shows that the given hyphenated word did not exist but the "like" and "history" are stored in the database separately.

Requirements

- Characters left to translate: When users are translating texts, if the current text is equal to or greater than the length of characters left, then the size of characters left should reset to 1000.
- Clear text button: Clear button should only appear when the text area is not empty, otherwise, the button should not appear.
- When searching for hyphenated words, an API request should be made to the database as entered by users, if hyphenated words do not exist, then split and search each word individually.
- On the Search Word List page, when users hover over the category column, they should see a brief explanation.

Updated System



- Figure 6 Shows the length of characters left reset to 1000 when the size of the translated text is equal to or bigger than the number of characters left to translate. In Addition, a clear text button now appears because text Area is not empty.
- Figure 7 Shows the Search Words List page when users search hyphenated words that are already stored in the database.

System Design

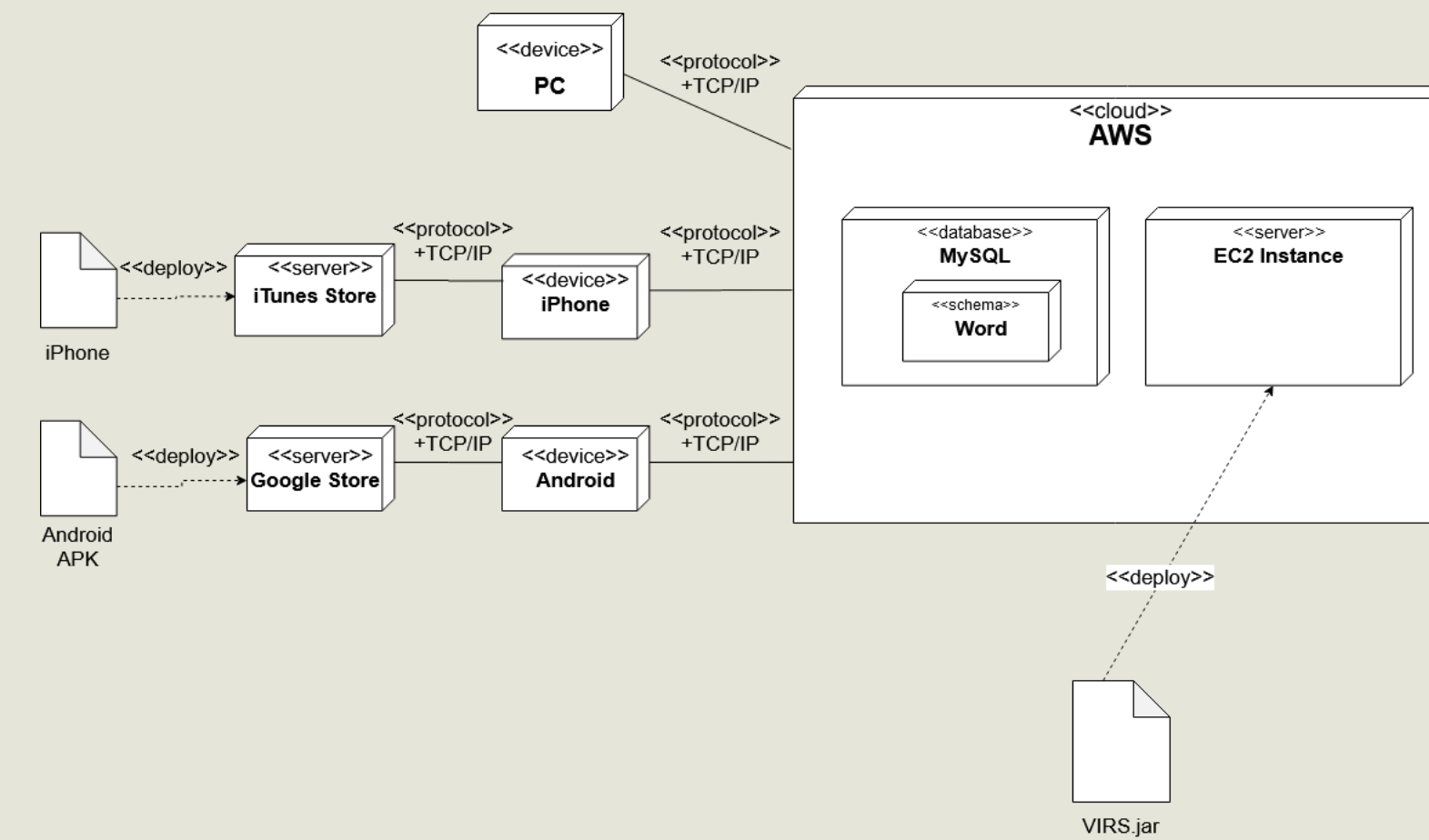


Figure 3 – Provided by previous groups

The site is hosted on AWS and the mobile apps display the site through a WebView object.

The Frontend consists of Angular Typescript, Bootstrap, CSS and HTML5
The backend is Java SpringBoot and MySQL.

Verification 1

Test Case ID: Hyphenated_Word_Result

Description: Hyphenated words that are exist in the database.

Test steps:

1. Navigate to virs code directory
2. "run virs.cmd install-only" command to run whole application
3. "virs.cmd run" command to run the backend
4. "npm start" command to start the application in the front end
5. Navigate to localhost:4200
6. Click 'Search Words List'. In the search bar, type hyphenated words that are exist in the database.
7. **Expected result:** Display result for hyphenated words as entered by users.

Actual Result: As expected
Status(Pass/Fail): Pass

Verification 2

Test Case ID: Hyphenated_Word_Result

Description: Words exist in the database individually, but not as a compound words.

Test steps:

1. Navigate to virs code directory
2. "run virs.cmd install-only" command to run whole application
3. "virs.cmd run" command to run the backend
4. "npm start" command to start the application in the front end
5. Navigate to localhost:4200
6. Click 'Search Words List'. In the search bar, type words that are stored in the database individually, but not when hyphenated.
7. **Expected result:** Display result for each word individually, but not for the hyphenated because it does not exist.

Actual Result: As expected
Status(Pass/Fail): Pass

Summary

- I was able to fix the characters left to translate.
- I improved the Search Words Lists page to the product owner's liking.
- I added several small features throughout the website which improved its functionality and utility. Some of those include: the 'Clear text button' component which appears when users entered text in the text area on the iTranslate page and explanation for the category column to show a brief explanation of the words category

Acknowledgement

I thank Eric Dwyer for the assistance, cooperation and mentorship that I received throughout this process.