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VIRS 2.0

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Problem

The challenges that English language learners (ELL) as well as mainstream students are faced with:

- Lack of a reliable source for improving their academic words.
- Lack of a reliable source for working on STEM-related words.
- Lack of a dictionary particularly designed and developed for school purposes.
- Lack of a reliable and validated source for teachers to measure readability.

Requirements

- User must **analyze text**, **doc, PDF** and **image.**
- User must be able to see an **enhanced text color-coded result.**
- User must be able to see a **test statistics** as well as **readability score.**
- User must see the **word's definition.**
- User should be able to **search** through the **word lists.**
- Admin should **add, edit and delete** words from database through the **admin panel.**
- The web application should be **accessible** from **desktops**, **tablets** and **mobile devices**.

Implementation

- The Frontend was developed with Angular 4 framework along with Typescript to achieve a single-page application that interacts with the user by dynamically rewriting the current page rather than loading the entire pages from the server.
- HTML5, Sass, bootstrap and ng-bootstrap were used for UI components of the frontend.

Solution

VIRS meets these challenges through an easily-accessible application and website:

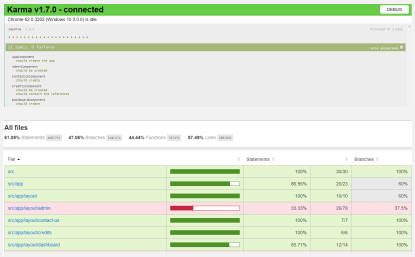
- Produces enhanced texts through a color-coded system.
- Provides reliable readability index that would help teachers in decisions making.
- Gives a detailed analysis of texts that would help in material development.
- VIRS helps teachers use OCR technology and then shifts it through a vocabulary profiler.
- VIRS has a new frequency-based dictionary that makes it easier to read.
- In future, VIRS will also offer these unique features in Spanish, Persian and Arabic.

Current System

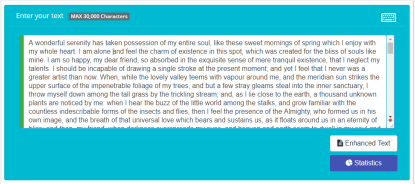
- VIR 1.0 was two separate applications, one powered by PHP, another one running on MEAN Stack.
- The only available feature on that version was to analyze text.
- In VIRS 2.0 we accomplished all the requested requirements noted above.

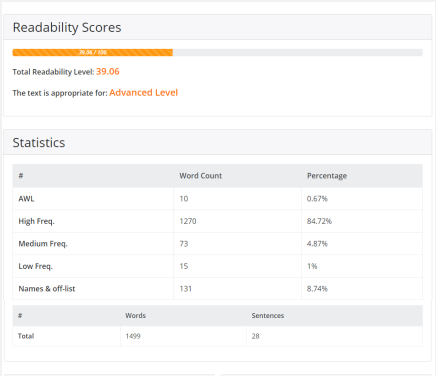
Verification

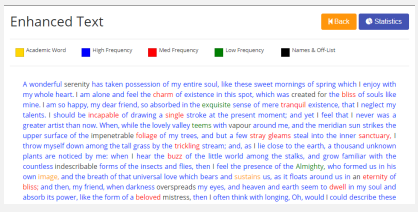
- Karma and Jasmine were used to perform unit testing for frontend.
- Compodoc and Istanbul were used to generate a code coverage report.

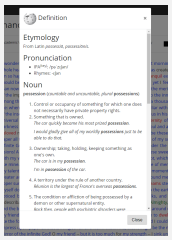


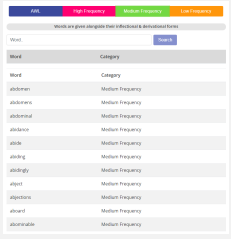
Screenshots

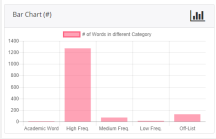


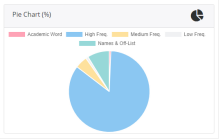


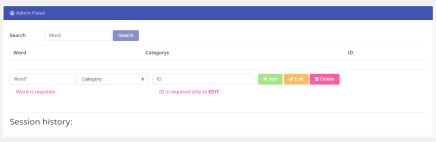




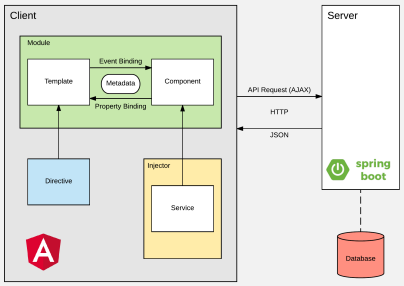




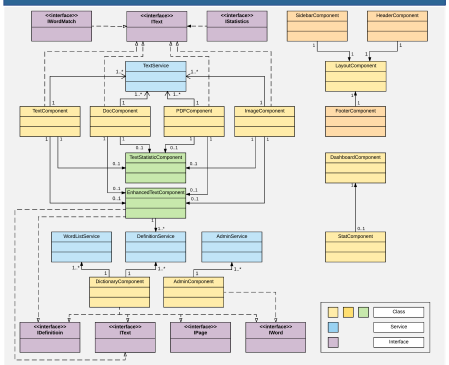


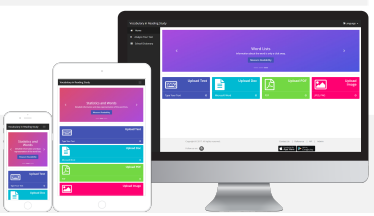


System Design



Object Design



Acknowledgement

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