

# A reading tutor for low-literacy adults

Sarah Amaneddine<sup>1</sup>, Tyler Heise<sup>1</sup>, Jill Zheng<sup>1</sup>, William Wong<sup>1</sup>, Shuonan Pei<sup>1</sup>, Carrie Demmans Epp<sup>1</sup>

<sup>1</sup>Department of Computer Science, University of Alberta

## Abstract

According to the Organization for Economic Cooperation and Development (OECD), the mean proficiency in literacy among adults in the US and Canada is at Level 2. Adults at this level cannot process dense texts, eliminate irrelevant information, perform multi-step operations, or evaluate the reliability of a source. The Reading Tutor is a website that was created to help low-literacy adults improve their English. It will be free to use the website that is personalized to the literacy level of every user. Creating a website allows people to increase their literacy levels without facing the stigma that comes with attending a class in person. Adults are inclined to improve their English because it often affects their career potential, socio-economic status, and health. The Reading Tutor has two major components: the passages and the scenarios. Passages are stories that the user can read and answer questions about. Scenarios are plots with questions that the user must answer to move on. In recent work, the information for each scenario was organized into spreadsheets to simplify the process of entering data into the code.

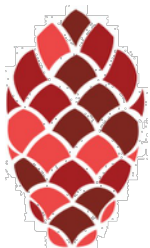
The system architecture consists of HTML, CSS, Javascript, MySQL, Python, and Django. The newest development in this project was the improvement of the user intake experience. Before starting the passages and scenarios, the website collects information from each adult. The user "interests" pages are the latest additions to the site and these pages ask about the user's hobbies. That data will then be used to incorporate their interests into later questions. It was important to add this feature to the website because relevance is a motivator for the user demographic. The next steps for the website are to log the user's interests into the database. Future enhancements also include the creation of more scenarios to accommodate to the different user interests.

Key words:

low-literacy adults, reading tutor, low-literacy, improving English, website

---

**Cite as:** Amaneddine S., Heise T., Zheng J., Wong W., Pei S., Demmans Epp C. 2019. A reading tutor for low-literacy adults. *Alberta Academic Review*, Vol 2 (2) 5-6, WISEST Special Issue (not peer-reviewed), DOI: 10.29173/aar38 .



## Introduction

- According to the Organization for Economic Cooperation and Development (OECD), the mean proficiency in literacy among adults in the US and Canada is at a Level 2.<sup>1</sup>
- Adults at this level can't process dense texts, eliminate irrelevant information, perform multi-step operations, or evaluate the reliability of a source.<sup>2</sup>
- Low-literacy affects:
  - employment → difficult to land jobs or advance careers;
  - socio-economic status → stigma and lower-paying jobs;
  - & health → more workplace accidents and medication misuse.<sup>3</sup>

## Purpose

- The Reading Tutor will be a free to use website that is personalized for the literacy level of every user.

## Process

- I worked on streamlining the data entry process and improving the user intake experience.

## Data Entry

- Grouped data from the master spreadsheets and organized it into spreadsheets designated for each scenario.



Figure 1: This was the process for organizing the data into spreadsheets.

## Coding

- Learned how to code in HTML, CSS, and Javascript using Codecademy and w3schools.
  - Focused on forms, buttons, and web-design elements.
- Used the operating system Ubuntu and a coding platform called Visual Studio Code to create the pages that collected the user's interests.

## System Architecture

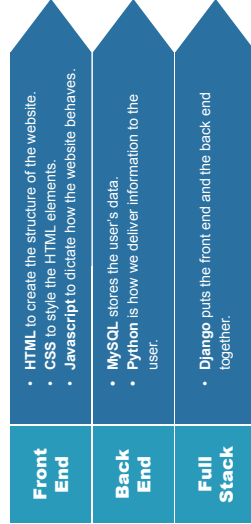


Figure 2: Front-end development creates what the user will see in a website. Back-end development is the "behind the scenes" work that takes care of databases and such. Full stack is a combination of the two.

## Results

- This is the page that collects the user's interests.

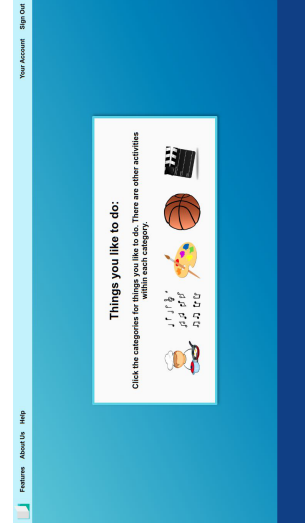
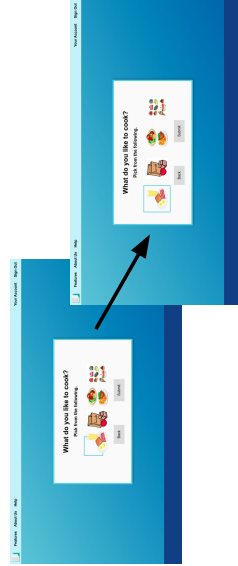


Figure 3: Relevance is a motivator for the website's user demographic so the content is personalized to each individual based off what their interests are.

- There were some bugs in the code such as this one where the borders of the selected options were not aligned with the images.



Figures 4, 5: The offset borders were fixed.

## Discussion

- The next step for the interests page is to log the user's interests into the database.
- More scenarios will be created to correlate with the interests of the user.
  - ex. A sports scenario for users that are interested in sports.

## Literature Cited

1. OECD (2013). "OECD Skills Outlook: Tables of results", in OECD Skills Outlook 2013: First Results from the Survey of Adult Skills, OECD Publishing, Paris, <https://doi.org/10.1787/978926424256-11-en>.
2. OECD (2013). "Proficiency in Key Information-Processing Skills among Working-Age Adults", in OECD Skills Outlook 2013: First Results from the Survey of Adult Skills, OECD Publishing, Paris, <https://doi.org/10.1787/978926424256-6-en>.
3. "Consequences of Illiteracy: Literacy Foundation." Fondation Pour L'alphabétisation, [www.fondationalphabetsation.org/en/causes-of-illiteracy/consequences-of-illite-racy/](http://www.fondationalphabetsation.org/en/causes-of-illiteracy/consequences-of-illite-racy/).

## Acknowledgements

I would like to thank Tyler Heise, Carrie Demmans Epp, the Reading Tutor team, and the EdTekLA research group for guiding and helping me this summer. Also, thank you to Canada Summer Jobs and Process Solutions for sponsoring my position here at WISEST.

