MIT APP INVENTOR

WORD TRANSFORMERS

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SUMMER APPATHON

OVERVIEW

- **App Name:** Word Transformers
- **App Description:** The purpose of this app is to effectively and efficiently help English-as-a-second-language (ESL) students, particularly those whose first language is Chinese, understand the rules of word changes in English grammar.
- **Track:** Mixed Team
- **Category:** Education & Research

THEME

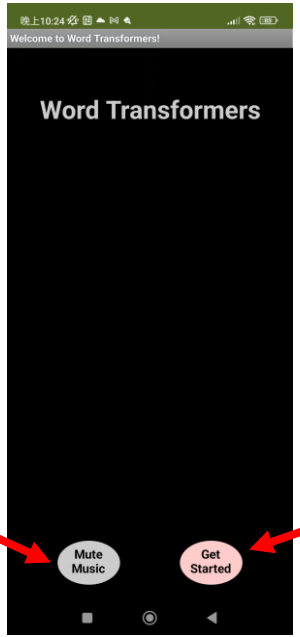
In 100 words or less, describe the problem that you chose to address, and why you were interested in solving it. Please note that this portion of your submission will be published if you are selected as a finalist or winner.

Learning English grammar can be challenging for English-as-a-second-language (ESL) students, especially those whose mother tongue is Chinese, due to differences between Chinese and English grammar. Concepts such as verb tenses, noun and adjective transformations can be particularly difficult to understand.

Our app provides a solution to these grammar issues by offering a comparison of sentence structures across tenses and contextualized images, instead of relying on rote memorization. This app is beneficial for all English learners, as it enables them to quickly and easily master English grammar and improve their language skills.

INSTRUCTIONS

Screen 1: Welcome Page

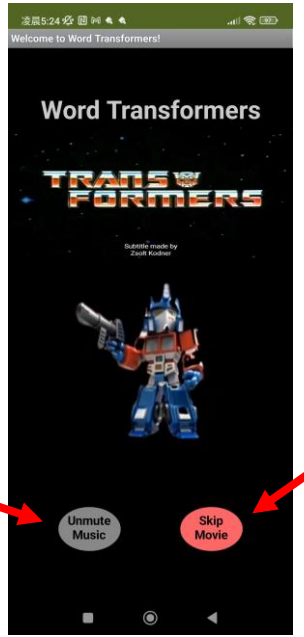


2. Click the "Mute Music" button to mute the animation sound.

1. First, click the "Get Started" button to play the welcome animation.

Step 1

3. After clicking, the button color will darken, and the text will be changed to "Unmute Music." Click the button again to restore the animation sound, the previous button color, and text.



4. After clicking the button, the color will darken, and the text will be changed to "Skip Movie“. Click it again will allow users to skip the animation and open next page.

Step 2

INSTRUCTIONS

Screen 2: Home Page

1. On this page, to click the "Noun“, "Verb“, "Adjective" and "Reference" buttons will take users to the corresponding pages.

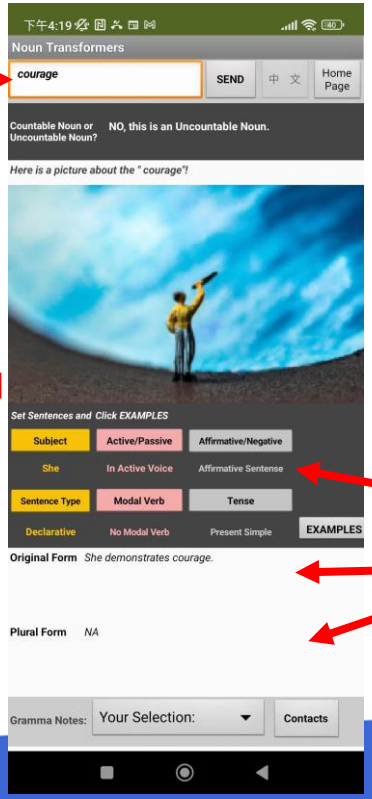
2. In this area, the ImageBot would automatically create a picture of a Transformer. The Transformer will be different each time, adding novelty and fun for the user. The image area is designed as vertical scrollable, making it convenient to display larger images.

INSTRUCTIONS

Screen 3: Noun Page

1. Users could input a noun in the textbox and then click the "SEND" button. The ChatBot will immediately determine whether the noun is countable or not and display the result in the area below.

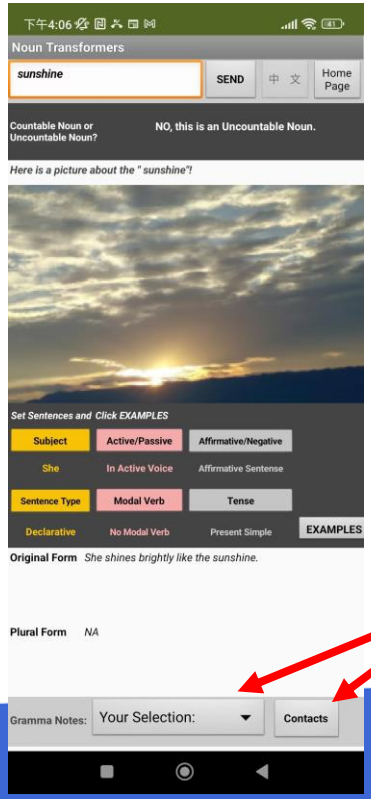
2. At the same time, the ImageBot will create a new image related to the noun. (***e.g. The ImageBot created a picture of "courage" here***.)



Step 4

3. To click the buttons below the image will allow you to set the key requirements for example sentences.

4. To Click "EXAMPLES" button will display the example sentences based on user's settings. This area is designed as horizontal scrollable, making it convenient for display on different devices. If the noun is countable, a plural example sentence will also be displayed here.



Step 5

5. Clicking on the "List Picker" at the bottom will allow users to select the display of grammar explanations.

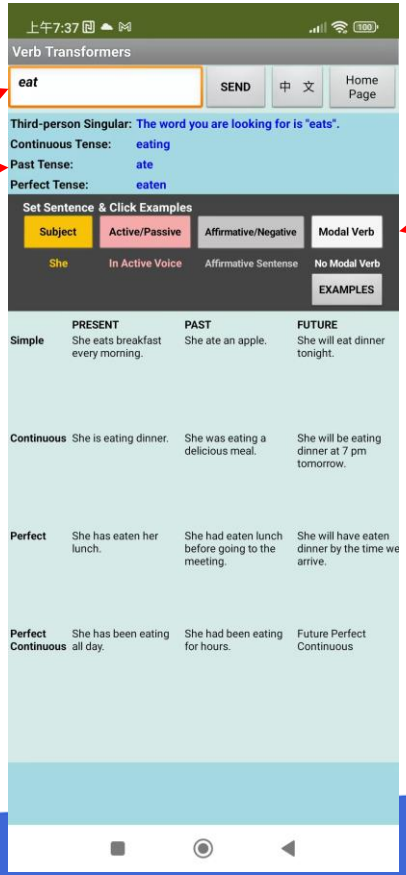
6. Clicking the "Contacts" button will display the contact information.

INSTRUCTIONS

Screen 4: Verb Page

1. Enter a verb in the textbox and click the "SEND" button. The ChatBot will then provide different forms of the verb, including the third-person singular, progressive, past tense, and past participle.

3. Click the “SEND” button. The ChatBot will then generate example sentences based on the sentence settings, including three time frames (“Present,” “Past,” Future”) and four sentence forms (“Simple,” “Progressive,” “Perfect,” “Perfect Progressive"), resulting in a total of 12 possible combinations. If you modify the settings, such as changing an active sentence to a passive sentence, changing the subject from "You" to "She," or changing an affirmative sentence to a negative sentence, new example sentences for all 12 combinations will be displayed immediately.



Step 6

2. Clicking on the buttons here allows users to set the key elements of the example sentences, which will all affect the verb's variations. These elements include the subject, active/passive voice, affirmative/negative sentence, and the use of modal verbs.

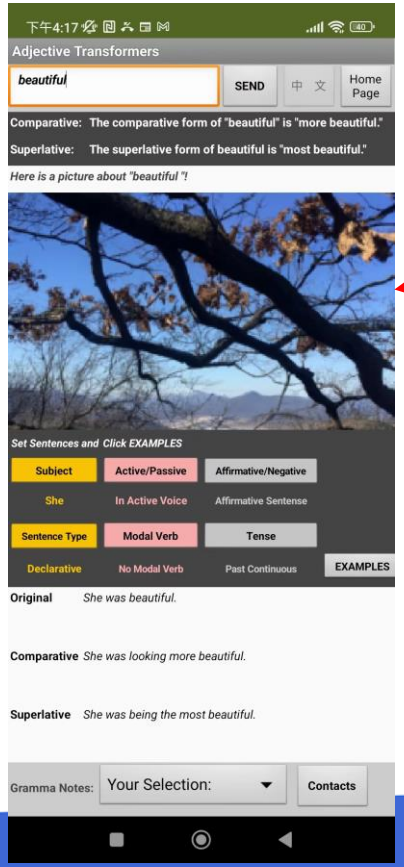
With the help of Word Transformers app, by setting sentence requirements, users can instantly get different forms of the same verb through a comparison of tables and examples.

This is very helpful in assisting students to understand the grammar rules of verb conjugation!

instructions

Screen 5: Adjective Page

1. Enter an adjective in the textbox and click the "SEND" button. The ChatBot will then provide the comparative and superlative forms of that adjective.



2. At the same time, the ImageBot will also generate a picture related to that adjective.

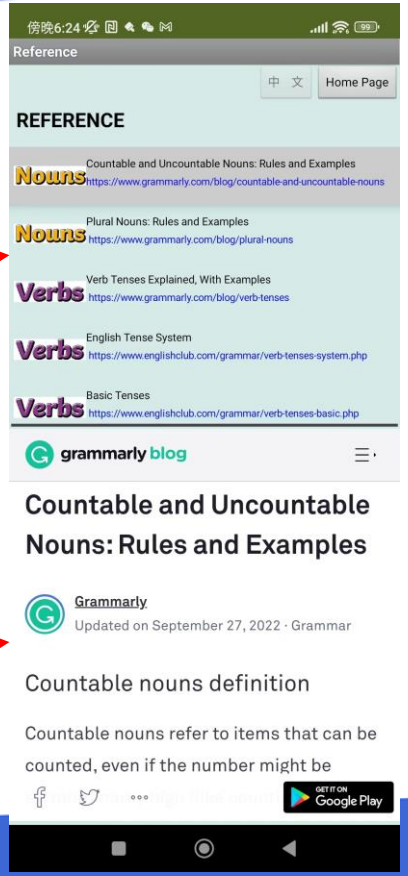
3. Clicking the "Sentence Settings" button, followed by clicking the "EXAMPLES" button, the ChatBot will provide example sentences for the base form, comparative form, and superlative form of the adjective based on the sentence settings. This will help students understand the variation in usage.

INSTRUCTIONS

Screen 6: Reference Page

1. With the help of the data visualization component, the new List View component, users could find the reference information easily, including the category images, related titles as main text and related websites as the detail text. The interface with such design is more user friendly.

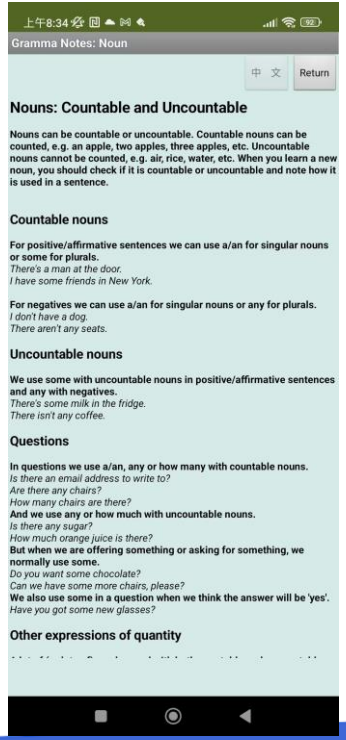
2. After picking a list / reference item above, the webpage related would be displayed here for more details needed.

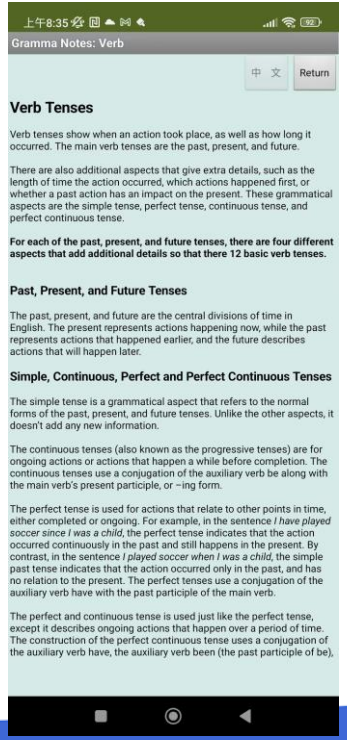


3. Both areas are designed as vertical scrollable, making them convenient for displaying longer content.

INSTRUCTIONS

Screen 7、8、9: Gramma Notes Pages





1. We have added grammar notes mentioned in the app for users to easily reference and learn from. The text areas are designed as vertical scrollable, making it convenient for displaying more content.

LIMITATIONS

In 100 words or less, describe the limitations of your app and what people should carefully consider when using it.

- The accuracy of AI responses needs improvement, as sometimes the answers provided by the ChatBot are inaccurate, particularly when determining noun countability, noun plural forms, and providing example sentences under specific conditions.
- In cases where the AI response is correct, sometimes it fails to adhere to the requested format or content. For example, when asked to provide the plural form of a specified noun or the past tense/past participle of a verb in the form of "a word," the AI may respond with a full sentence, which affects the display and text processing.
- The usage of the AI is limited, and exceeding the quota can happen easily.
- Additionally, the AI response time is relatively long, whether it's providing textual responses or generating images, as it requires some time before they can be displayed.

ACKNOWLEDGEMENTS

Please list the names of anyone who helped you with developing your app, and describe what type of help they provided.

- **Ms. Congjun Jin:** App Inventor instructor, providing assistance in solving programming issues and bugs.
- **Ms. Bo Wu:** Elementary English teacher, offering advice on grammar learning and the patterns of noun, verb, and adjective variations.
- **Ms. Fay Wang:** Elementary teacher, providing improvement suggestions for video content and presentations.
- **Mr. Changjian Li:** Engineer, offering assistance with technical issues related to animation design in the app.

ACKNOWLEDGEMENTS

THANK YOU!