



*EASI: A Text Simplification Mobile App
using Natural Language Processing*

User Manual



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Disclaimer

The Easi app is a tool for text simplification that uses natural language processing to generate simplified text for students in Grades 4-6. The app is designed to make English learning materials easier to understand, but it may not always provide a perfect or accurate simplification. The accuracy of the simplification can vary depending on the complexity of the original text, and the app may not always capture the nuances or context of the original text.

The Easi app is not intended to replace the guidance and support of teachers or parents, and students should always use their own discretion when interpreting simplified text generated by the app. The app is provided on an "as is" basis, and the developers of the app do not make any representations or warranties about its accuracy, reliability, or suitability for any particular purpose.

Students using the Easi app should always double-check the simplified text generated by the app against the original text to ensure that the meaning has not been distorted or lost. The app should not be used as a substitute for classroom instruction or homework assistance, and students should always seek the guidance of their teachers or parents before making any decisions based on the simplified text generated by the app.

The developers of the Easi app are not responsible for any errors, omissions, or inaccuracies in the simplified text generated by the app or for any damages or losses that may arise from the use of the app. By using the Easi app, students agree to release the developers from any liability or claims that may arise from the use of the app.

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Getting Started

Introduction

Text can often be difficult to read and understand, especially for people with functional illiteracy, cognitive impairment, or poor language skills. Based on the Trends in International Mathematics and Science Study 2019 (TIMSS), Filipino students were significantly behind other countries in the international assessment for mathematics and science for grade 4.

To address this, the study aimed to develop Easi - a mobile application that translates complex text into clear and effective writing according to Plain language standards through text input or pictures.

This User Manual contains all essential information for the user to make full use of the application as well as instructions on how to run it on their own.

System Requirements

Android

Minimum requirements

OS: Android 5.0 (Lollipop) or later

Memory: 1GB of RAM or more

Processor: Qualcomm Snapdragon 410, Samsung Exynos 5 Octa 5420, MediaTek MT6582 or later

Recommended specs:

OS: Android 8.0 (Oreo) or later

Memory: 4GB RAM

Processor: Qualcomm Snapdragon 670 or higher

Flutter (Frontend)

Flutter SDK Version: 3.7.8

Dart SDK Version: 2.19.5

Visual Studio Code Version: 1.78.2

Android SDK Version: 33

Python (Backend)

Python Version: 3.10.4

Installation

Make sure you are connected to the internet before starting up the application; otherwise, it won't work as intended.

Mobile Application

1. Download the .apk file from Play Store or, if you have requested a link to download it elsewhere. If you did not download it from Play Store, enable installation from Unknown Sources by going into your phone's Settings and searching "Installation Sources," and ticking the checkbox of where you're trying to install from, for example, "My Files."
2. After installation, open the application and create an account by clicking "Sign up here". Enter your full name, email address, and password before clicking on Register.
 - Please note your password must be at least six characters for increased security.

Frontend

Link to the frontend source code: <https://github.com/keiruu/easi/tree/main/src/frontend>

1. Navigate to the frontend folder.
2. Type `flutter pub get` on the terminal to install the necessary dependencies.
3. Once all the dependencies have been installed, you can now run the application by typing `flutter run --no-sound-null-safety`.
 - Make sure you have an Android emulator installed or an Android phone connected with USB Debugging turned on (go to your phone's settings, search USB Debugging, and then enable it).
4. To create the APK, simply run `flutter build apk --no-sound-null-safety` on the terminal. The apk is then located at `build\app\outputs\flutter-apk\app-release.apk`.

If you plan on using the backend of our application, do so with the instructions below.

OpenAI

1. In order to use our backend, you must have an API Key from OpenAi. First, follow this link to create an account <https://platform.openai.com/signup>.
2. Click "Continue with Google" and register using your Gmail account. After which, you verify your phone number.

3. Once registered, click "Personal" on the top right corner of the screen, then "View API keys".
4. Click "Create new secret key" and copy the key provided. Store this key somewhere safe or in a notes app because we will be needing it later.

Backend

Link to the backend source code: <https://github.com/keiruu/easi/tree/main/src/backend>

1. Open the command prompt or a terminal of your choice and navigate to where you placed the backend folder.
2. Create a virtual environment by entering `python -m venv env`. "env" being the name of your virtual environment.
3. Activate the virtual environment by running this command
`.\env\Scripts\activate`
4. Type `pip install -r requirements.txt` and press enter.
5. Create a new file in the root directory named ".env"
6. Inside the file, type OPENAI_KEY and assign it the API Key you retrieved from OpenAI. Example:
`OPENAI_KEY=sk-L9zGoCmtYEpB86JwpicST3B1bkFJ7EebHK7R0J6678yDAKoH`
7. You can now run the backend by entering `flask run`.
8. You can now make a POST request using the `/translate` endpoint with a JSON body of

```
{  
  "prompt": "The prompt"  
}
```

Example using Insomnia:

POST http://127.0.0.1:5000/translate

Send

JSON

Auth

Query

Headers1

Docs

1 {

2 "prompt": "Politics refers to activities through which

3 people preserve, and amend the general rules under which they

4 live."

5 }

Beautify JSON

200 OK

853 ms

108 B

13 Minutes Ago

Source

Headers4

Cookies

Timeline

1 Politics is the way that people in a community work together

2 to make and change the rules that they live by.

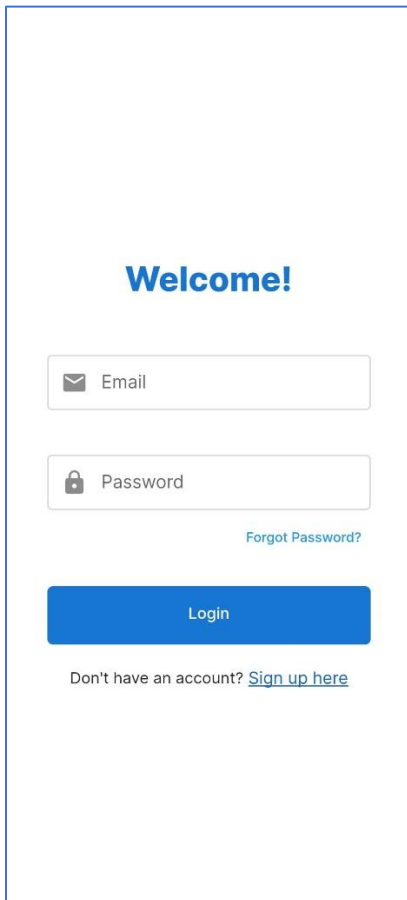
Usage

Download the mobile apk and install it. You can find the link to download the apk here

<https://github.com/keiruu/easi/tree/main/dist>

a. Login Page

1. When you click on the application, you are greeted with the login screen. Click "Sign up here" if you don't have an account yet; otherwise login with the appropriate credentials.

A screenshot of a mobile application's login page. At the top, the word "Welcome!" is displayed in a bold, blue font. Below this, there are two input fields: the first is labeled "Email" with an envelope icon, and the second is labeled "Password" with a lock icon. To the right of the password field is a link that says "Forgot Password?". Below these fields is a solid blue button with the word "Login" in white text. At the bottom of the page, there is a text prompt "Don't have an account?" followed by a blue underlined link that says "Sign up here".

Welcome!

Email

Password

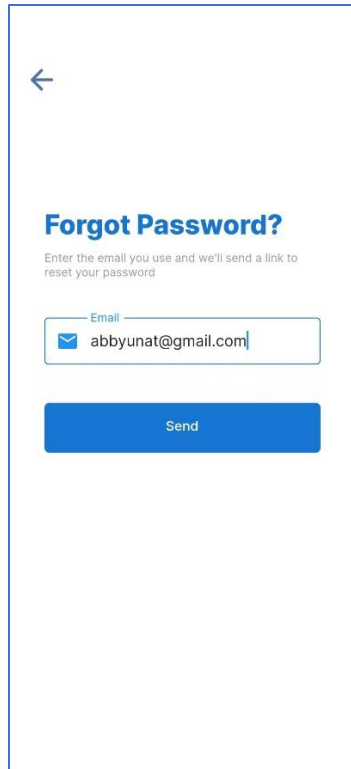
[Forgot Password?](#)

Login

Don't have an account? [Sign up here](#)

b. Forgot Password

1. If you have forgotten your password, simply click "Forgot Password?" and then enter the email associated with your account. An email will be sent to your account with a link to reset your password.



A mobile app screen for the 'Forgot Password?' feature. At the top left is a back arrow. The title 'Forgot Password?' is in bold blue. Below it, a subtitle reads 'Enter the email you use and we'll send a link to reset your password'. There is a text input field with an email icon and the text 'abbyunat@gmail.com'. Below the input is a blue 'Send' button.

←

Forgot Password?

Enter the email you use and we'll send a link to reset your password

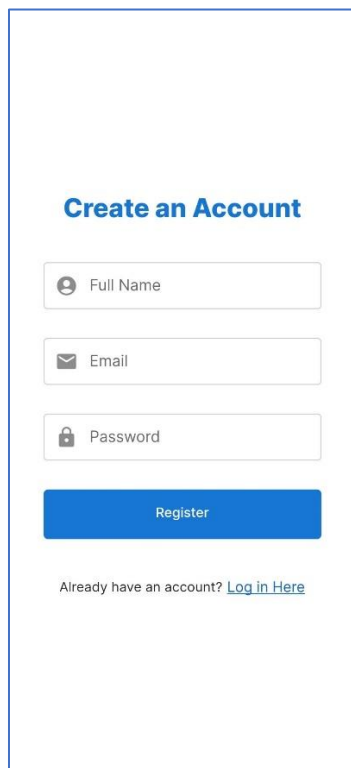
Email

abbyunat@gmail.com

Send

c. Sign Up

1. If you don't have an account, create one by providing your Full Name, Email, and Password before clicking 'Register.'



A mobile app screen for the 'Create an Account' feature. The title 'Create an Account' is in bold blue. Below it are three text input fields: 'Full Name' with a person icon, 'Email' with an envelope icon, and 'Password' with a lock icon. Below these is a blue 'Register' button. At the bottom, there is a link: 'Already have an account? [Log in Here](#)'.

Create an Account

Full Name

Email

Password

Register

Already have an account? [Log in Here](#)

d. Home Page

Once on the home page, you can start simplifying text through two input methods; Typing or Picture.



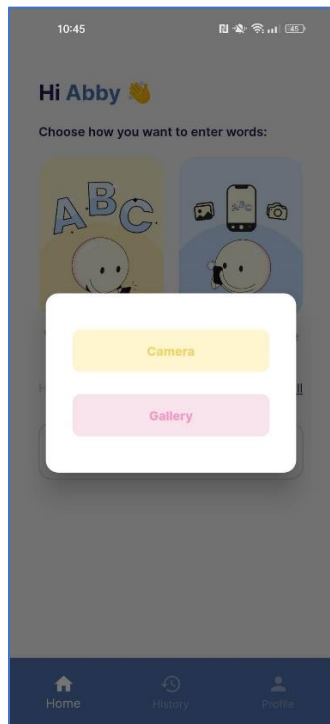
a.) Words by Typing

For Typing, enter or paste text that you would want to simplify and then click the button that says 'Simplify.' Wait for it to finish, and then you get the results.

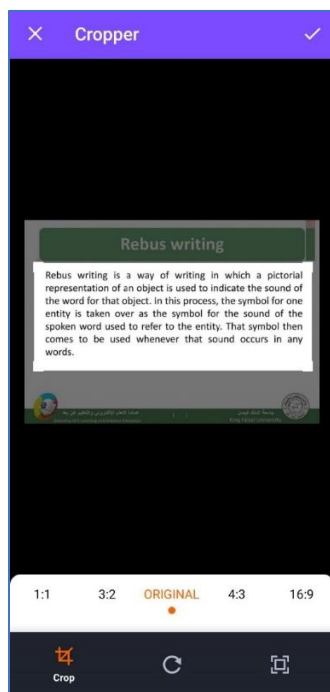


b.) Words by Picture

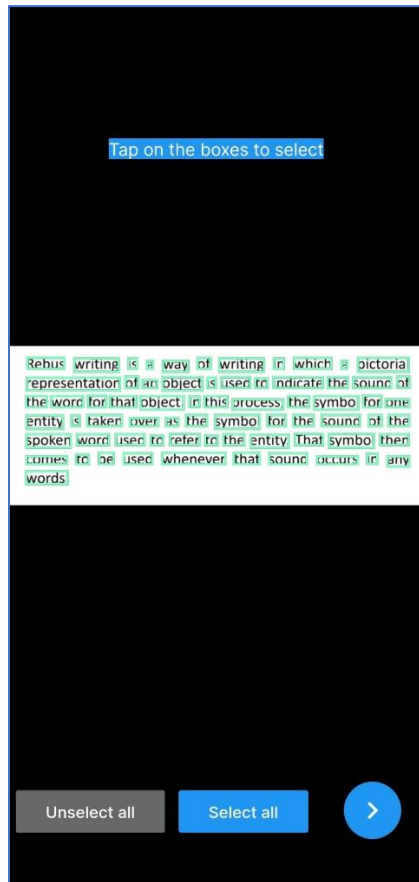
For **Picture**, select whether you want to take a picture of the text you want to simplify or if you already have it in your gallery.



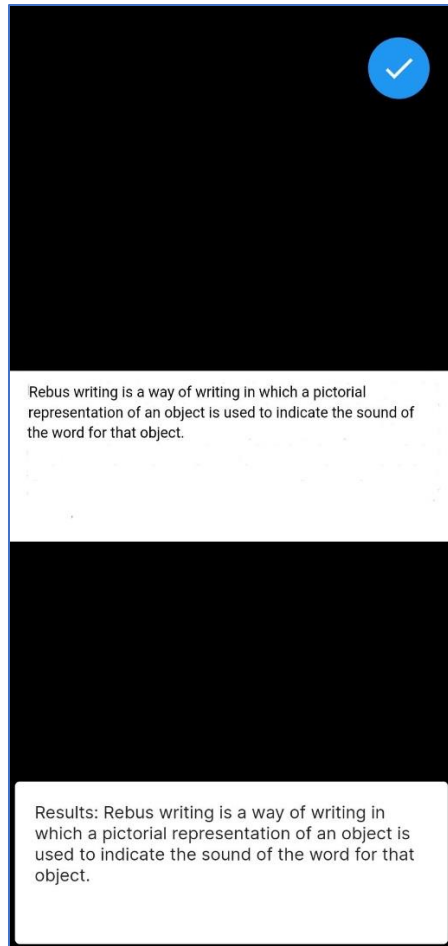
Once selected, you will be redirected to a Cropper where you can crop the section or part you want to simplify.



Click the check mark once you are done, and you will be then redirected to a page where you can select the specific part you only want to select.



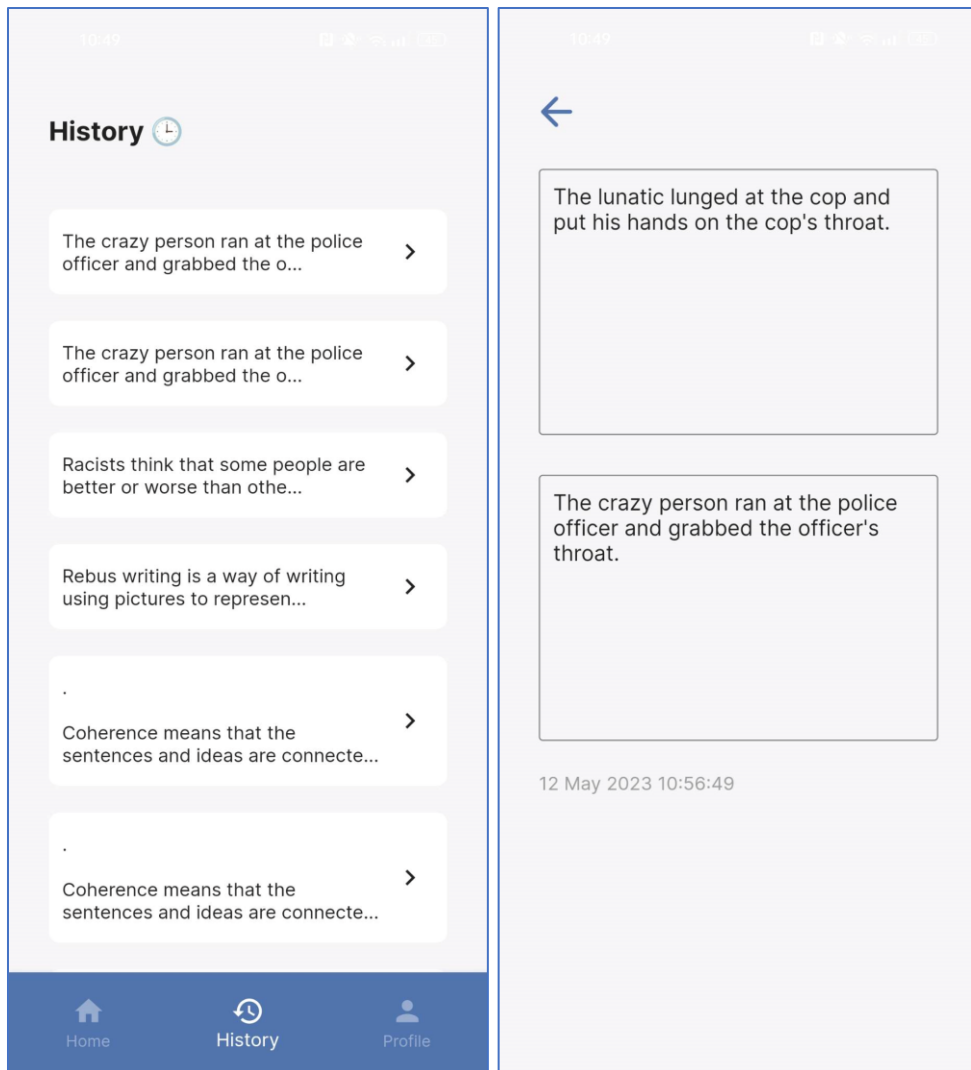
Click the right arrow once done and wait for the AR-generated results.



Once you have the results press the check button, and you're done, the results will be recorded in the History tab for your reference.

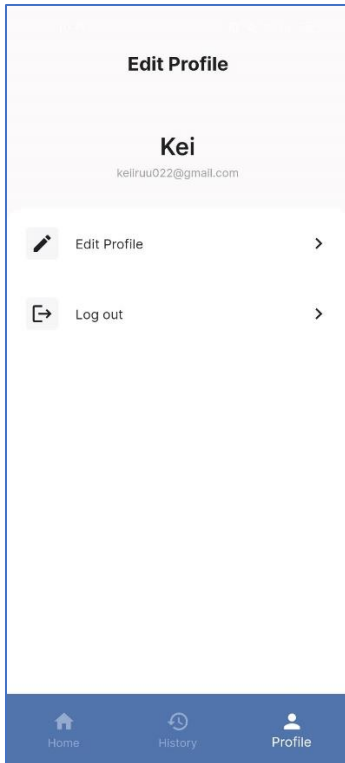
e. History

This is where all your previous text simplifications can be seen. You can then click on each item to expand and get all the details.



f. Profile

The profile section contains a button to edit your current profile and a button to Sign Out (which redirects you to the Login Page).



If you click on 'Edit Profile' you can now change your Full Name, Email, or Password. You can just enter the field you want to change. For example, if you only want to change your Full Name, just fill it up and leave the rest blank.

A mobile app interface for editing a profile. The title is 'Edit Profile' with a back arrow icon. Below the title, there are four input fields: 'Name' with a person icon, 'Email' with an envelope icon, 'Password' with a lock icon, and 'Confirm Password' with a lock icon. At the bottom, there is a blue 'Save' button.

Troubleshooting

Loading takes a long time

- Check your internet connection, a slow internet connection will lead to slower loading times.
- If you have checked that your internet is fine, but the problem still persists, please contact the developers, as this could be a backend issue.

I'm not getting the results I want/The application returns me gibberish or unrelated text.

- Make sure your prompt (the text you entered or captured) is according to the use case the application is for. As for images, make sure that the image is clear and in a well-lit environment.

AR Overlay, when inputting through pictures, overflows or goes out of the image.

- Try to minimize the number of words you select, as the application works better for shorter texts. Also, make sure that the picture has enough white space on the edges and is not too cramped for better results.

Having problems updating my profile, especially the username

- This is due to a slow internet connection. If it doesn't update, please try to edit your profile again.

Frequently Asked Questions

Is this only for elementary students?

The application was created with elementary students of Grades 4 to 6 in mind; however, it can also be used for anyone meaning to simplify text that they find hard to understand.

Can the application replace parents/teachers in guiding students to understand English better?

The application does not intend to replace parents/teachers but is only a tool to assist. We do not recommend the student solely rely on our application with regard to their education.

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