PROJECT SCOPE DOCUMENT

Bilingual Grammar Error Correction Tool Using Deep Learning

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1 Introduction

Hindi is the primary language of 43.63% of Indians. Over 42% of children in the nation attend schools where Hindi is the dominant language. Most of the government's official websites are bilingual (Hindi and English), and the government is always encouraging people to use Hindi for official work in banks, PSUs, embassies, and other government agencies both inside and outside of India. Although there are many English ML grammar error correction tools, there is hardly any free and efficient Hindi ML grammar error correction tool that will help both native and non-native Hindi speakers.

This project's objective is to develop an efficient ML Grammar Error Correction (GEC) tool for Hindi and English that will solve the aforementioned issue and be primarily used by students and teachers in schools, colleges, and institutions. This instrument will change the field of education and be a blessing for academics, especially those who speak Hindi. The users will be able to summarise texts and check spelling as well as grammar for the input provided. There are numerous input alternatives available, including speech-to-text, file upload, and text entry. The "Expert Review" option, which has extra features including cross-checking the rectified content and chatting with a verified language expert, is available to premium users. In addition to using the tool as a regular user, the user can register as an expert by uploading documentation of their language qualification, which will be verified before the expert's acceptance. Additionally, this application has templating features that enable users to swiftly edit papers or files that have a pre-designed format, which speeds up user writing.

The scope of this project is explained further in terms of functional and non-functional requirements.

2 Functional requirements

The functional requirements of the product are discussed below:

1. *User Registration and login:*
   This allows the user to create a new account and get registered into the system. There will be 2 types of users: normal user and expert user. The system shall perform validation checks on the inputs and ask the user to enter correct information in case of an error. Using the same credentials, the user can login into their account and start using the software.

2. *Bilingual:*
   The system will have the features for both Hindi and English languages.

3. *Bulk upload:*
   The user can provide input in the system by various document types such as word document, PDF, text file, etc.

4. *Speech to Text:*
   Input to the system can be in the form of speech to text which will be proved beneficial for users who aren't fluent in writing the language.

5. *Spelling check:*
   The user can do spelling checks on their textual data and the output will be in the form of a spell check report or text output on the screen.

6. *Grammar check:*
   The user can do grammar checks on their textual data and the output will be in the form of a grammar check report or text output on the screen.

7. *Text summarizer:*
   The user can do text summarizations of their textual data and the output will be in the form of a summarized report or text output on the screen.

8. *Chat with expert:*
   This feature is available to premium users only. The user can upload their desired material to seek expert evaluation and can communicate with the expert in an anonymous chat room about the necessary alterations to obtain the desired results.

9. *Rate expert:*
   The premium users who have utilised the expert review feature can assign a rating to the expert based on the quality of their work.

3 Non-functional requirements

The non-functional requirements of the product are discussed below:

1. *Performance:*
   The application's mean time to respond to user requests will be 5 seconds with a good internet connection.

2. *Cross-browser compatibility:*
   This application can run on browsers like Edge, Chrome, Firefox and Brave.

3. *Capacity:*
   The application is expected to handle multiple users at the same time.

4. *Reliability:*
   The system will ensure the integrity and consistency of all its transactions.

5. *Availability:*
   The system is expected to run 24 hours a day, through all 365 days of the year.