

Düzelt Beni

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Project Description / Objectives

- The "Düzelt Beni" project is aimed at addressing the scarcity of error detection and correction tools for Turkish.
- The project intends to develop a web-based interface utilizing the rules of Türk Dil Kurumu (TDK) to identify and rectify errors in Turkish language text.
- The project targets users including Turkish language learners, native speakers, professionals, academics, and children seeking to improve their writing skills.
- The system incorporates a feedback mechanism to enable continuous improvement over time by collecting those feedbacks.
- The "Düzelt Beni" web interface is designed to be scalable and support multiple users simultaneously.

System Design

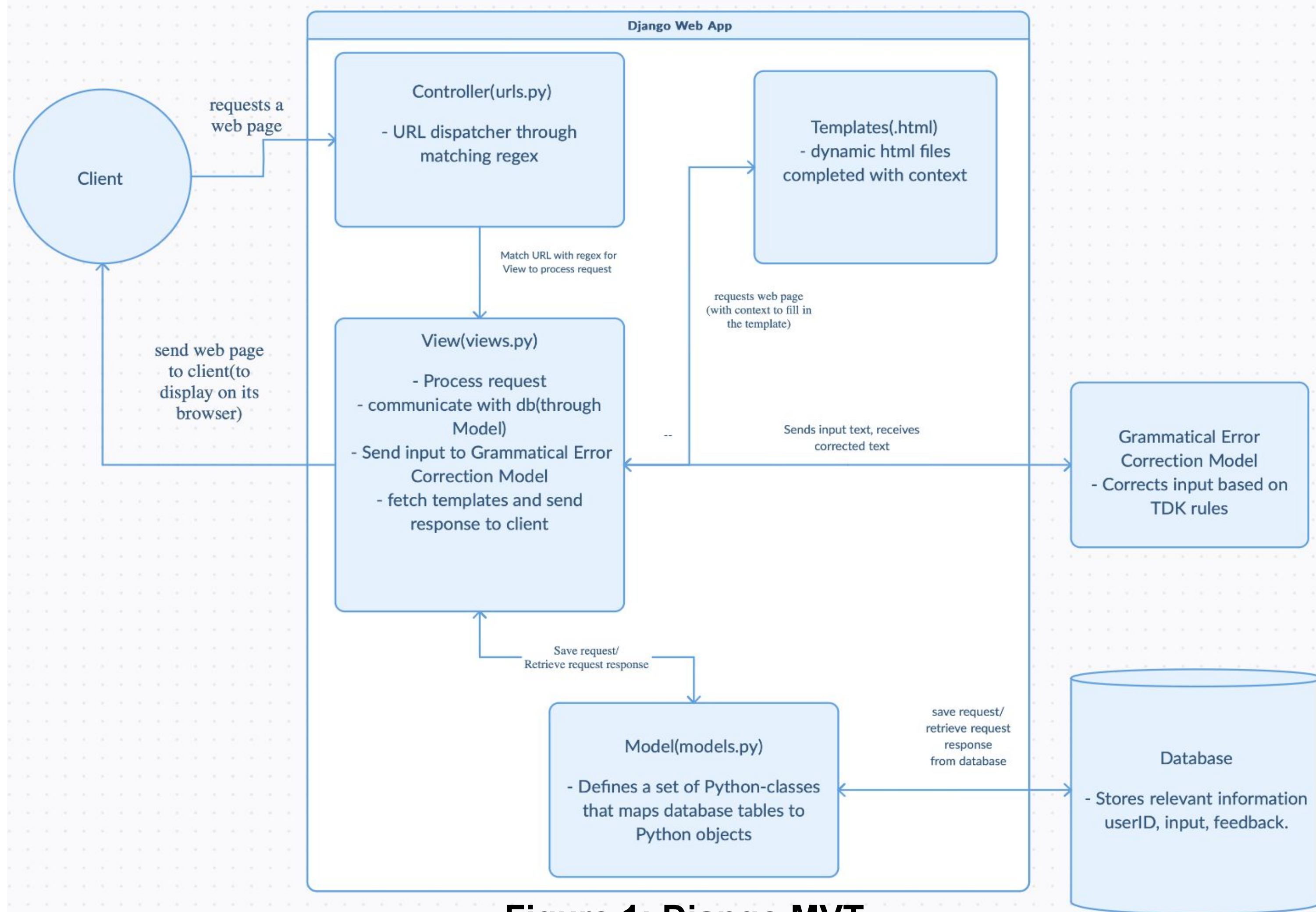


Figure 1: Django MVT

System Usage:

Users can access the website duzeltbeni.com for utilizing its functionalities. Within the web page, users are able to input text in the designated "Girdi" field in order to make corrections using the model. After submitting the input, the model will process the text and display the resulting output in the "Çıktı" area. Additionally, users have the option to provide feedback regarding the results and the overall website experience.

System Architecture

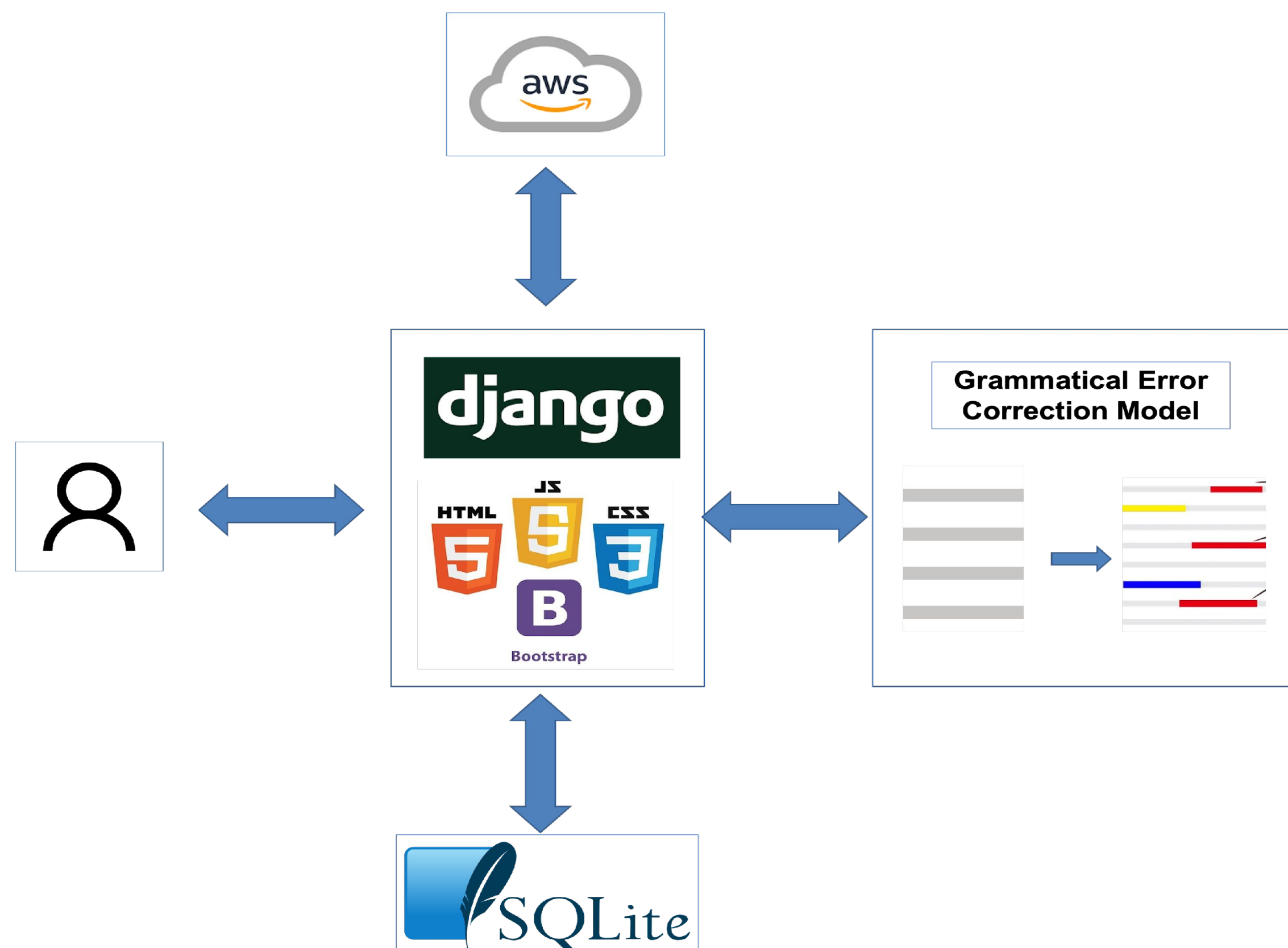


Figure 2: System Architecture

Django Web Application: Handles requests from users, stores the data to database, corrects errors using Sequence Tagger Model, and sends it back to the web server to be displayed on the webpage.

Server: Hosts and serves the webpage to users when they access the URL.

Database: Stores information about user input, corrected texts and feedbacks

Client: User's web browser to access the webpage and application. Sends request to server; server responds by serving the webpage and app and their content.



Methods

Used Methods

1.Django & Rest Framework: These Python-based tools were used to design the web application and provide a robust, scalable backend with a focus on ease of use and security.

2.HTML, CSS, JS, Bootstrap: These were used for developing the user- friendly and responsive front-end of the web interface.

3.SQLite: Used as the database management system.

4.AWS: Used to host the web interface and handle data storage, providing scalability and reliability.

5.ZemberekNLP: Identifying typo and correcting typos [1].

6. TrNLP: Correcting proper names (big letters) in Turkish. [2].

Encountered Problems:

1. Response Time: One significant problem we encountered was the longer response time for processing requests, especially when run on CPUs rather than GPUs.

2. Pop-Up: Another issue we faced was in implementing pop-ups for corrected words with their explanations. Designing a responsive and intuitive interface that seamlessly shows pop-ups without disrupting the user's engagement was challenging.

Results

Deliverables and Achievements

- Successful development of the "Düzelt Beni" web interface for detecting and correcting Turkish language text based on the rules of Türk Dil Kurumu (TDK).
- Fully functional, user-friendly web-based interface for Turkish language error detection and correction.
- Effective feedback system that collects and stores feedback data for continuous improvement of the model.

Future Work

- Incorporate more advanced language processing techniques to better handle complex language errors.
- Develop mobile applications to increase accessibility.

Düzelt Beni

The screenshot shows the website interface with two main sections: "Girdi" (Input) and "Çıktı" (Output). The "Girdi" section contains a text area with sample Turkish text and a "Yanılış Bul" button. The "Çıktı" section shows the corrected text with highlighted errors and a "Metni Kopyala" button. Below these sections are buttons for "Geni Bildirim Vermek İster Misin?" and "Bu Hala Hatalı!". At the bottom, there is a login form with a text input for "Lütfen Yanlış Olan Cümlelerin Doğrusunu Girin" and buttons for "Kaydet" and "Çıkış".

Figure 3: Screenshot of website

Acknowledgement

We would like to thank Asst. Prof. Gözde Gül Şahin for her guidance and support through this project.

References

- [1] <https://github.com/ahmetaa/zemberek-nlp>
 [2] <https://github.com/brolin59/trnlp>