CmpE 352/451 Project: Language Learning Platform

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The main objective of this project is providing an environment for language learners and experts to collaborate in a single platform. The platform serves learning materials and exercises for many languages including Turkish, English, Chinese and so on. The users that want to experience the progress of learning a new language may register to this platform and access materials at any time, from anywhere.

A simple scenario for illustrating the functionalities of the platform may be as follows: After registering to the application, the user may start learning any language he/she desires to learn. The materials of a specific language are composed of exercises and examples about listening, reading, grammar, vocabulary and writing. After applying to learn a language, the user is provided a simple exam in order to assess the starting level such as A1 or B2. Then, the materials to be accessed by the user are customized accordingly. Nevertheless, the user is still able to retrieve the lower level contents.

The listening, reading, grammar and vocabulary materials are already available within the system, and it is graded automatically. The application should be capable of grading a question (true or false) and presenting the correct answer if the provided one is wrong. Additionally, the user may consult to a language expert for writing exercises. The writing exercises may be evaluated and graded by the experts for improving the skills further. As a key functionality, this project also specifies a recommendation mechanism. The platform may recommend experts based on the level of the learner and scope of the specific writing content. The learner may choose one of the experts by inspecting the rate of the expert and comments about him/her. Then, the writing exercise can be uploaded to that expert for evaluating and receiving a feedback. The platform should support the W3C Web Annotation Data Model [1] so that the writing exercise can be annotated by both the learner and the experts. In fact, the application should also support a messaging mechanism for establishing a conversation between learners and experts. The writing exercises is not be restricted by the typical essay format, the skill of colloquial language usage may be enhanced through having daily conversations with the users whose native language is practiced by the learner.

At any time, the learner may monitor the status of learning progress including statistics about the ratio of completed exercises, average grade and achievements. This is helpful for keeping the track of a particular language if multiple languages are being actively learned. The application should implement a user-friendly interface for the users in order to achieve the aforementioned objectives.

This platform also creates the opportunity of adding new learning materials suggested by the users. Any experienced user may upload fresh exercises or materials for keeping the quality of the learning materials continuously improving. The data provided by the users is then reviewed by the experts of the corresponding language and integrated into the system if and approved.

In order to create a trustful environment, the users have ratings and comments on their profile with respect to their behavior and experiences. This feature helps learners to have detailed information about the experts and browse their past experiences. Through such information, the learner may analyze possible experts and select the most feasible one to collaborate. For instance, nice comments about a user may be indicators of the expertise in a specific area.

The users may search the available content within the platform, if they are looking for something specific. In addition to the basic search through keywords, this system should support an advanced search mechanism that enables a further functionality. The learner may utilize the advanced search facility to search a content with respect to the type, topic, difficulty and scope. The tags of the contents can be helpful to extend the scope of the search mechanism by enabling the semantic search.

The main design of this project is composed of a web application with necessary API implementations for the front-ends. In addition to the web platform, this project requires a native Android application that supports the same functionalities that are defined through API calls. The native Android application should be implemented in a user-friendly manner so that the user can be active even when the public transportation is used or during a boring activity.

The implementation of this system should follow the standards introduced by the World Wide Web Consortium (W3C) [2]. In addition to the rules defined by the standards body of W3C, any related software standards should be followed. Besides, ethics is an important issue of this project. There may be personal contents within the system. The personal information, contact information, copyrighted contents, license issues and everything related to these paradigms should be respected and considered. Open source software with appropriate use permissions may be used, as long as it is properly attributed and documented. The application should be deployable on a remote and manually configurable remote server. We strongly recommend you to use Amazon EC2 or DigitalOcean.

References

[1] *The World Wide Web Consortium – Web Annotation Data Model*, Accessed: February 2019.

[2] *The World Wide Web Consortium – Standards*, Accessed: February 2019.