

15-637 Project Proposal

Title: Memcpy()

Team members: Hao Gu (hg1), Yi Bian (ybian1), Yu-Heng Lei (yuhengl1)

We plan to build a website that helps users memorize vocabulary or learn other knowledge they wish online with user-contributed content. We'll maintain databases and provide "book" options for users to learn and memorize "entries" (e.g. English words, pictures of fruits, U.S. states on a map). During learning and memorization, any user can contribute by uploading text, pictures, or audio files as "flashcards" (hints) to help people better remember the entry. During timed quizzes, users can ask for such flashcards.

We'll also provide social interactions among users. Users can "like" the flashcards uploaded by others. They can also add comments on specific entries to have a discussion. Moreover, users can add friends to see their friends' learning achievements and which books they are currently learning. They can even start a competition against their friends. Also, there will be various scoreboards that display the user rankings of different tasks.

Some possible highlights of this project include:

- Achievement system
 - Users can "unlock" achievements by completing learning missions of various levels. The website will rank users' achievements globally or among a user's friends.
- Learning statistics (visualization and recommendations)
 - Record learning statistics to display graphical visualization to the user.
 - Provide recommendations based on learning statistics. For example, entries that a user does not learn well will appear more frequently in the quiz, which help other users memorize knowledge.
 - Users can also choose to practice the "difficult" or "easy" questions selected based on database statistics.
- Mini games:
 - Endless mode: see how many question one can answer before the timer stops. Correctly answered question will add bonus time.
 - Racing mode: Compete against one's friend to see who can answer more questions correctly and faster than the other. This mode can be either real-time or based on the exact recording of previous games.

Technologies we plan to use:

- Django, Bootstrap, jQuery (taught in class, standard technologies)
- Visualization libraries (such as D3.js, to be surveyed)
- Facebook/WeChat/Twitter APIs for sharing achievements/books/flashcards
- (Optional) socket libraries for real-time mini games