

Capstone Project 1 Proposal

This website is designed to be played as a game or a test of word knowledge. It seeks to do so by offering multiple games that work to test and improve word knowledge. For example one of those games is one where the API generates words at random, and then the website sends a request for one of the words to be used in a sentence, and then the website removes the word from that sentence and replaces it with underscores, and then offers the sentence and 4 words asking the user to correctly guess which word is meant to be used in the sentence. The API that will be used is WordsAPI, and it will be used in conjunction with some algorithms I will develop to sift through the dataset before sending the request to the API to get the chosen word being used in a sentence. These algorithms are unfortunately necessary due to the API not having working options that can easily provide both many words and frequency data in one request but can provide a single random word with frequency data (of which I would need to do multiple in order to get a frequency in the range I'm looking for, compared to the consistent 2 calls when using my own algorithm). This is a concern for me as I am limited to 2500 requests a day and my credit card gets charged when I go over that amount so it is imperative that I don't. I will likely only implement my algorithm after a certain number of requests such as 2000 or 1500 in order to maintain a consistent difficulty scale (although that is not included in my database schema). The database schema that will be used to track user scores in its current state is shown below:

Users			Games		
id	username	password	id	game_type_id	user_id
p_key	string	string	p_key	foreign int	foreign int
Game Types			Rounds		
id	name		id	game_id	score
p_key	string		p_key	foreign int	bool
					hints
					int

Users will be able to sign up, log in, or continue as a guest, and from there they will be able to use the website. Users who were previously logged in or continued as a guest will maintain access even after leaving the site. A game consists of a set number of rounds playing a single game type, where the user makes a guess after up to 2 hints and either gets it right or wrong. Certain statistical measures will be seen on a statistics page which will include stats pages for both the current user and all users.