



# CALIFORNIA STATE SCIENCE FAIR 2013 PROJECT SUMMARY

<b>Name(s)</b> <b>Sonia S. Sachar</b>	<b>Project Number</b> <b>S1420</b>
<b>Project Title</b> <b>MASS: Memorizing Assistant for Social Software</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The best way to memorize information is by using a learning method called space repetition. This method is implemented via flashcard-based systems. The most popular algorithm that is used to implement space repetition learning is the Super Memo 2 (SM2) algorithm. I enhanced this algorithm with modifications such as using multiple repetitions in learning phase, using response time to deduce quality of retention, and using most effective repeat interval data from participants to set initial interval value for each word. The purpose of my project is to use my enhanced algorithm to build a Facebook application, SAT Memory Master, which helps users memorize vocabulary more effectively in a social setting.</p> <p><b>Methods/Materials</b> 1) Researched learning techniques 2) Proposed a new algorithm (MASS) to aid in memorization process by modifying and adding to SM2 algorithm. 3) Built a Facebook application to help users memorize SAT vocabulary by using MASS algorithm. Designed the software such that different version of algorithm can be used by different users and performance data can be collected. 4) Conducted two experiments to compare new enhancements to the regular algorithm Experiment 1: Compared two different learning techniques found in the different algorithms Experiment 2: Compared changed initial intervals based on difficulty of words to set initial interval 5) Collected and compared data To build the Facebook application, the software tools used were PHP, HTML, MySQL, Facebook Plug-in, and Photoshop</p> <p><b>Results</b> Experiment 1 showed that the MASS algorithm is 18% more efficient than the SM2 Algorithm. Experiment 2 showed that the MASS algorithm can be made 11-13% more efficient by customizing initial intervals for easier and harder words.</p> <p><b>Conclusions/Discussion</b> Since SAT Memory Master has been live on Facebook, it has attracted more than 1000 users in roughly five months. I have quantitatively shown that my MASS algorithm is 29% to 31% more efficient than SM2.</p>	
<b>Summary Statement</b> This project introduces and implements a new algorithm as a Facebook application to help students memorize SAT vocabulary more efficiently in a social setting.	
<b>Help Received</b> Online Information such as user guides, articles, forums, etc.	