



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> Aadarsh Jha	<b>Project Number</b> 34283
<b>Project Title</b> Evaluation of the Stronger Data Encryption Type for Secured Communication	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of this project is to evaluate the most secure data encryption technique.</p> <p><b>Methods/Materials</b> I developed three separate encryption software programs using the Python programming language. I conducted three separate focus group experiments with the same ten volunteers. Each participant was assigned to make an educational guess of the original message in each of the three encryption programs. It was a timed experiment to measure the time it took to decipher/guess the original encrypted message. My independent variable was the time it took to decipher the encrypted message. My dependent variable was the encryption strength level.</p> <p><b>Results</b> Based on the data collected during the experiment, I found that encryption software using method number two took the most time to decipher/guess. Additionally, it took between one and four minutes for volunteers to decipher the encrypted message. I had expected it to take much longer.</p> <p><b>Conclusions/Discussion</b> One major result from my experiment, that I find surprising, is how encryption software using method number two had taken the longest. Since I had not predicted this, and instead predicted encryption method number three to be the strongest, I disproved my hypothesis. If I were to do this project again, I would make sure to make software using more advanced encryption methods such as using randomization techniques to make it harder to decipher/guess using the past patterns and knowledge. Also, for more complete and reliable data, I would have recruited more volunteers in my focus groups, with a broader age group.</p>	
<b>Summary Statement</b> The goal of this project is to evaluate the most secure data encryption technique.	
<b>Help Received</b> My father had helped me review my documents, and made corrections. I had also received help setting up my board.	