With this background work in mind, our lab began to build a Chrome extension and a data-mining software to monitor and analyze how the user employs passwords. In attempting to make the users passwords more secure, we developed the following goals:

1. To begin with a summary of all the passwords the user has previously used and their habits.
2. To build a Chrome extension that monitors the password use of the user.
3. To give the user a detailed report of their password usage and suggestions on how to improve.

Our goal was to help decrease the risk of cyber attack in all users of the Safe Passtracker 10000Tm.

Recommendation to other SHINE students in the future:

- Make the most of your time in the lab, it goes by very quickly
- Don’t be afraid to ask for help from anyone in the lab
- Interact as much as possible with other SHINE students, it’s not too common to be surrounded by people who love science as much as you do.
- Do not tunnel-vision on one objective, absorb and learn as much as you can about as many different things as you can.

My own future:

- As for me, I plan to continue programming and working in STEM fields as I transition into college.

Acquired Skills:
I have improved my knowledge of Java
I have learned the following programming languages:
Minor Objective C
Javascript
Python
JSON
I further learned using
Matlab
GitHub
And the open source program Hindsight

A small code sample from the Safe PassTracker 10000Tm:

How this relates to course work:
Whether or not we accept it, computer science is becoming an instrumental part of each and every one of our lives. From running complex physics calculations to simulating the tiniest of chemical reactions, computer science and programming is a part of every stem field. Further, programming embeds critical thinking skills, objective based thinking, and the ability to think of creative solutions that many would miss.

Skills Gained/ How This Relates to Your STEM Coursework

Results/Conclusion

<table>
<thead>
<tr>
<th>Subject</th>
<th>Open Accounts</th>
<th># of Unique Passwords</th>
<th># of password repeats</th>
<th>Percentage of accounts with same password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject 1</td>
<td>92</td>
<td>17</td>
<td>49</td>
<td>53%</td>
</tr>
<tr>
<td>Subject 2</td>
<td>267</td>
<td>43</td>
<td>150</td>
<td>56%</td>
</tr>
<tr>
<td>Subject 3</td>
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<tr>
<td>Subject 4</td>
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Conclusions: Our hypotheses proved true. We found that:

1. All users surveyed had far more accounts than they use on a regular basis.
2. A staggering amount of these accounts use the same passwords.
3. Using the same password throughout many accounts increases risk of attack. This risk could be reduced if we could identify non-essential reuse.

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