CIS 129 Final Project: Password Security

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Problem: Password Security

- Leaked passwords can happen to anyone
- Great need for internet security in the future
- My mother was personally affected by a data breach

Current Solutions

- Password managers
- Passkeys
- Written passwords
- Two factor authentication
- Automatically-stored passwords

Applications

- Passwords that continuously change would be much more secure
- Real password managers could adapt my proposed solution
- The principle of continuously changing passwords is applicable in things like banking, military, and other areas where strong security is required

Design Approach

Must:

- Be very reliable and able to keep passwords secure
- Be easy-to-use and user-friendly
- Include a free and paid version for funding
- Have a failsafe in case the password manager and website aren't in sync
- Be cheap to maintain

Design

Pseudocode:

- Declare password variable
- Use a function to set the password variable equal to a random string generated by an encryption algorithm
- Declare timer variable
- Set the timer variable equal to the current time
- Use a timing function to keep track of when an hour has passed. Once it has, re-call the password function to generate a new password and assign it to the password variable

Open Questions

- How easy would it be to implement this type of password manager?
- What communication systems would have to be implemented so that the password manager and website could both have the updated password?
- What would be the cost to maintain such a complex system?
- I was surprised that current password managers don’t already use such a system. It makes me wonder if it’s feasible to implement.
- I would want to learn more about how current password managers protect passwords so that I could see if this would actually be doable.

References

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Thank You!