Report Outline

1. Introduction
   1. Proof of concept and educational value
2. Problem
   1. Lack of security in a variety of apps
   2. In this day and age, security is more important than ever
   3. Easy ways for a common person to strengthen security
3. Solution
   1. Device that receives an encrypted randomly generated password
   2. Adds another factor of authentication
   3. Easy to use
4. Implementation
   1. Two devices, server and display device
      1. Server any computer running the code, we used a department device
      2. Display device, use monitor as a proof of concept and raspberry pi
   2. Process
      1. Server randomly generates a password from a word bank and encrypts it
      2. Server then sends the encrypted password to the generator device
      3. Device decrypts the password and displays it for the user to gain access into the system
   3. Algorithm
      1. Stream or block cipher
      2. XOR on each bit using a preset key that each device holds a copy of
   4. Key Details
      1. Server also asks the user for a password to gain access in the login system for another level of security
      2. Any algorithm can be used for the encryption
      3. Proof of concepts and education because we are bad at hardware, not real product
5. Security Flaws
   1. Though the stream is protected, server and device are still vulnerable to attacks
   2. If attacker were able to again access into either of these devices than it would be a major breach
   3. Reveals how there are many different areas of security and why it can be so difficult
   4. Files are unprotected and not encrypted
6. Conclusions
7. Bibliography