Activities

1 Review Wikipedia: Password strength. Create a program that asks the user for an input password. If your programming language or library supports it, get the input without echoing the characters as they are entered. Determine the entropy of the input password based on length of password and the number of different character sets used in the password (e.g. Entropy/Strength Test). Use a separate function to determine password entropy. Avoid using global variables by passing parameters and returning results. Include appropriate data validation and parameter validation. Add program and function documentation, consistent with the documentation standards for your selected programming language.

2 Review Wikipedia: Dictionary attack. Enhance the program above by downloading a dictionary of English words as a text file: (i.e. GitHub) Use a separate function to check the password and see if it matches one of the dictionary words. Inform the user if their password is susceptible to a dictionary attack. Use exception handling for all file operations. Validate parameters and update program and function documentation, consistent with the documentation standards for your selected programming language.

3 Enhance the program above by downloading a text file of common passwords: (i.e. GitHub) Use the function above to check the password and see if it matches a common password. Inform the user if their password susceptible to a common password attack. Validate parameters and update program and function documentation, consistent with the documentation standards for your selected programming language.

4 Enhance the program above by saving all passwords entered by the user in a text file. Use the function above to check the password and see if it matches a previously entered password. Validate parameters and update program and function documentation, consistent with the documentation standards for your selected programming language. The final program will check password strength and validate passwords against an English dictionary, a common password list, and a recently-used password list.