**CS 1150 Design Notebook Example**

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**Design Notebook**

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**Assignment #6**

**Due Oct 10**

**Step 1: Problem Statement**

Write a program that determines the strength of a password. For this assignment, password strength will be based on password *entropy,* which is a measurement of how predictable a password is.

**Step 2: Understandings**

**What I Do Know**

* I know the nature of Boolean variables when set to true or false and how to work with them

**What I Don’t Know – What I’m struggling with – Questions I have**

* I struggles the true false Boolean variables.

**Step 3: Pseudocode for Main**

* Initial Variables with constant integer datatypes from very weak to very strong bounds, a variable with an integer datatype for counting each character the user types, and a variable with a Boolean datatype set to true for testing the password.
* Display a welcome screen to the user that displays only once.
* Create the main loop that allows the user to test passwords as many times as they want.
* Display an option menu within the while loop
* Within this while loop, create another while loop that validates the user’s choice.
* After the second while loop, create an if/else condition along with a for condition within the else condition to acquired the user’s choice password.
* Calculate the entropy of the password with this formula example:

Math.*log10*(Math.*pow*(uniqueCharacters, length)) / Math.*log10*(2)

* Determine strength based of entropy
* Display the password, password length, entropy, and password strength
* Display the final message for the number of passwords tested and another final message saying “Thank you for using the password tester.

**Step 4: Lessons Learned**

* I Googled and learned that the hasNextInt() method can be used to check if the next token in the input stream can me interpreted as an integer.