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Hashing is a useful function that is used outside hash tables. Passwords for applications are typically hashed, meaning that there is no way to decrypt and retrieve the password. Have you ever noticed that most companies will allow you to reset your password, but they won't display your password to you? That is primarily based on security settings, but this may also be because the company is unable to get your password. Instead, to authenticate a user, the company will take the password that was typed, hash it using the same hash algorithm, then compare the two hashed values to see if they match.

Required Resources

Textbook: *Data Structures and Algorithms*, Chapter 5 (/d2l/common/dialogs/quickLink/quickLink.d2l?ou=1860222&type=lti&rcode=snhu-2534448&srcou=1040994)
This zyBooks reading will provide you with information on the following topics:

- Hash tables, chaining, linear probing, quadratic probing, double hashing, resizing a hash table, common hash functions, and direct hashing

Additional Support (Optional)

Video: Hashing Set 1 (Introduction) - GeeksforGeeks (https://www.youtube.com/watch?v=wWgIAphfn2U) (6:54)
This video introduces the concept of hashing framed around a problem.

Video: CS 260 Lesson 5 Hash Tables with Chaining (https://youtu.be/9IXCdJA8O3c) (1:01:18)
This is a video walkthrough of implementing a hash table using a chaining algorithm to handle collisions.