

## **HASHING:**

Producing *hash values* for accessing [data](#) or for [security](#). A hash value (or simply *hash*), also called a *message digest*, is a number generated from a [string](#) of text. The hash is substantially smaller than the text itself, and is generated by a formula in such a way that it is extremely unlikely that some other text will produce the same hash value.

Hashes play a role in security systems where they're used to ensure that transmitted messages have not been tampered with. The sender generates a hash of the message, [encrypts](#) it, and sends it with the message itself. The recipient then decrypts both the message and the hash, produces another hash from the received message, and compares the two hashes. If they're the same, there is a very high probability that the message was transmitted intact.

Hashing is also a common method of accessing data [records](#). Consider, for example, a list of names: