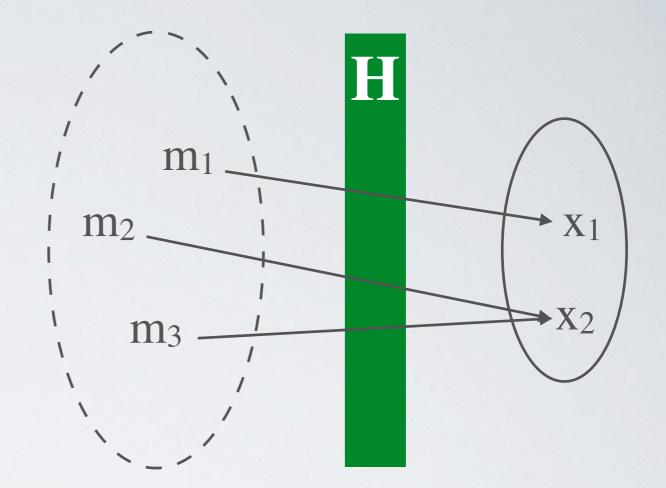
## Cryptographic Hash Functions and Message Authentication Code

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## Cryptographic hashing



H(m) = x is a hash function if

- H is one-way function
- m is a message of any length
- x is a message digest of a fixed length
- $\rightarrow$  H is a lossy compression function necessarily there exists x, m<sub>1</sub> and m<sub>2</sub> | H(m<sub>1</sub>) = H(m<sub>2</sub>) = x