

3.5

ZAFAR      Plaintext  
A B G B S      Cipher text



Data exchange over Internet.

Plain text → Cipher text  
Encryption (Public key)

Cipher text → Plain text  
Decryption (Private key)

### key terms:

**Plaintext:** The original text, document or message before it is put through an encryption algorithm.

**Ciphertext:** The product when plaintext is put through an encryption algo.

**Encryption:** It is encoding of plaintext into ciphertext.

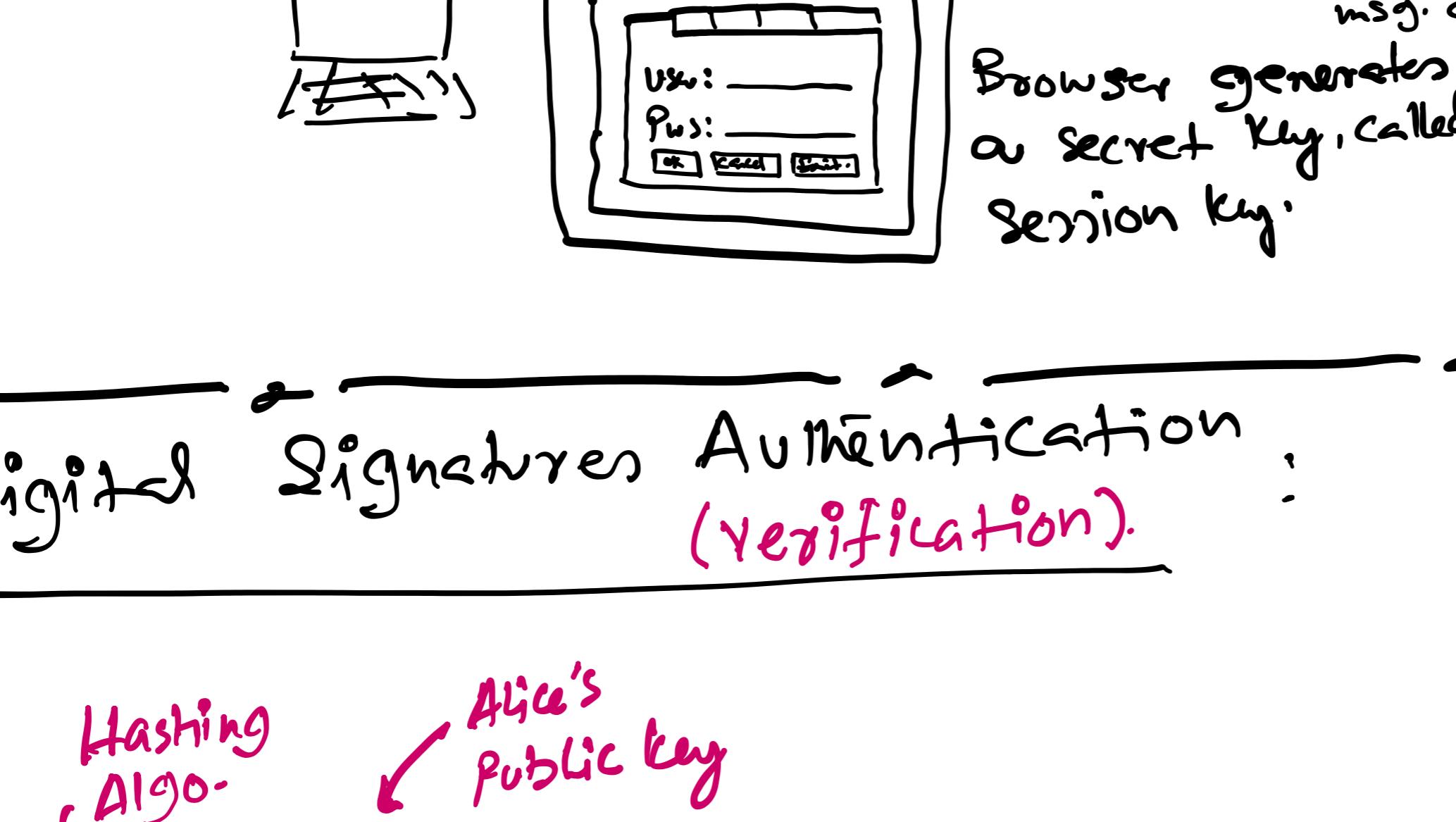
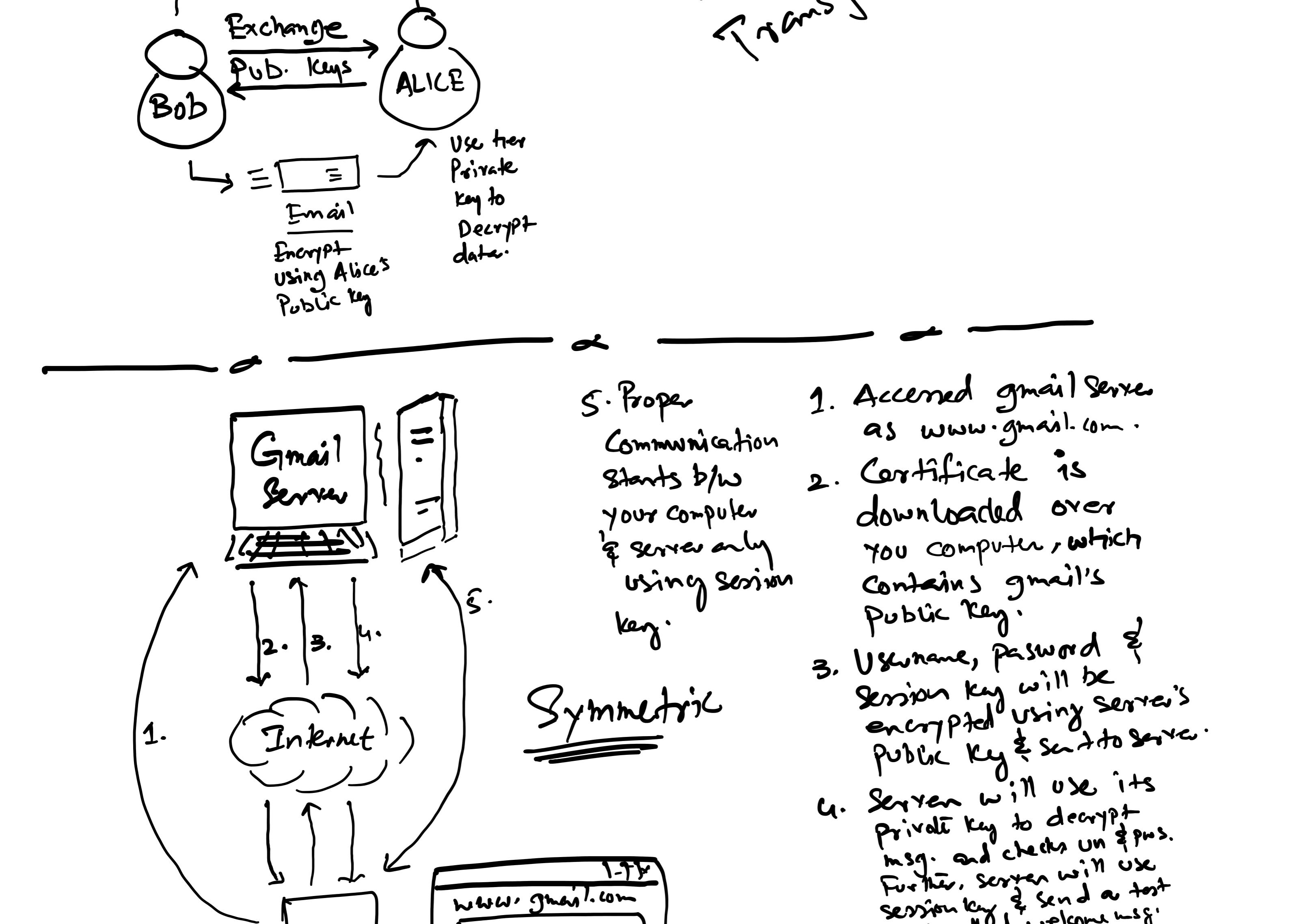
There are two types:

**Symmetric encryption:** It is encryption that uses same secret key to encrypt & decrypt.

**Asymmetric encryption:** It uses public keys and private keys.

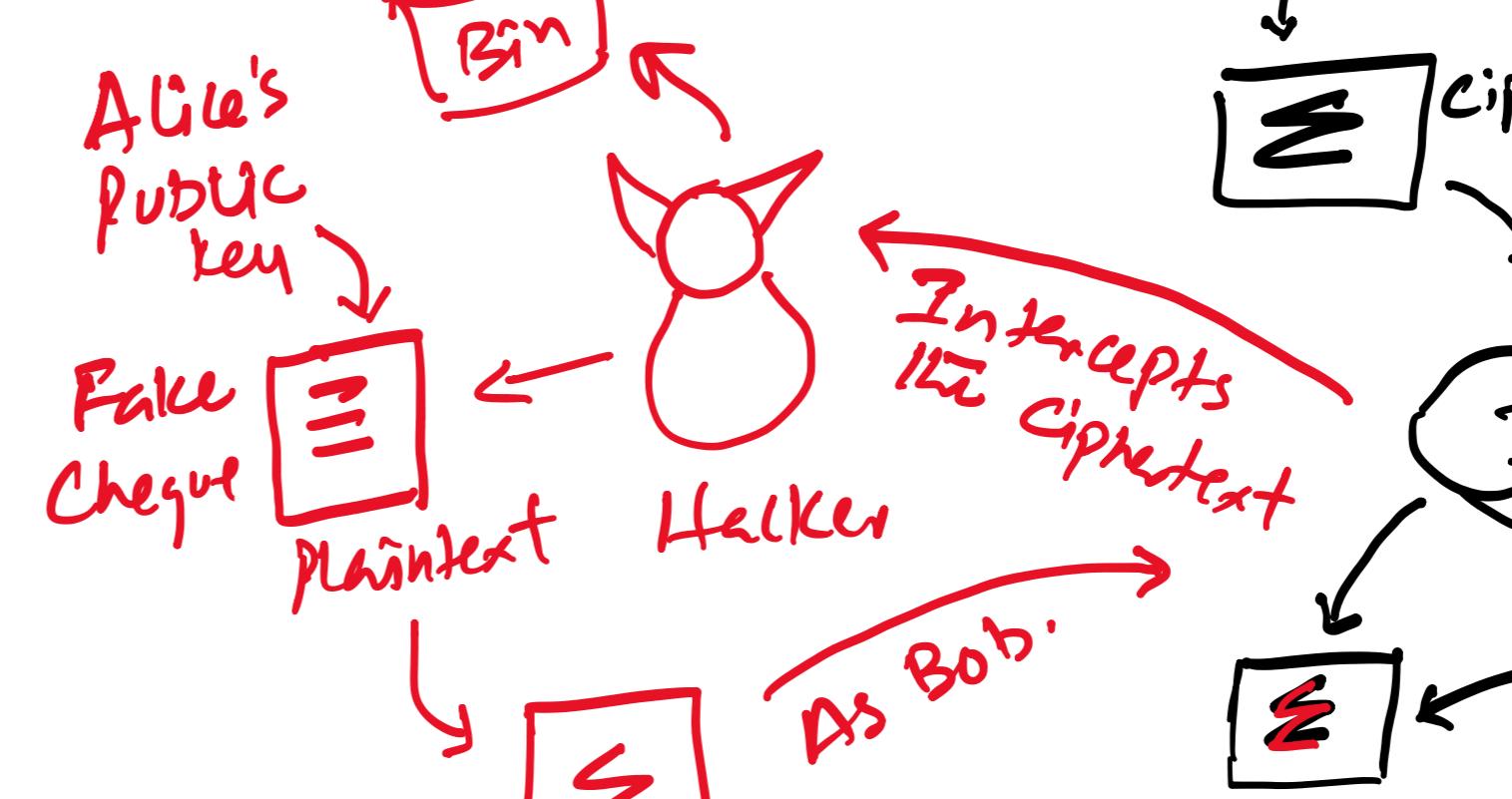
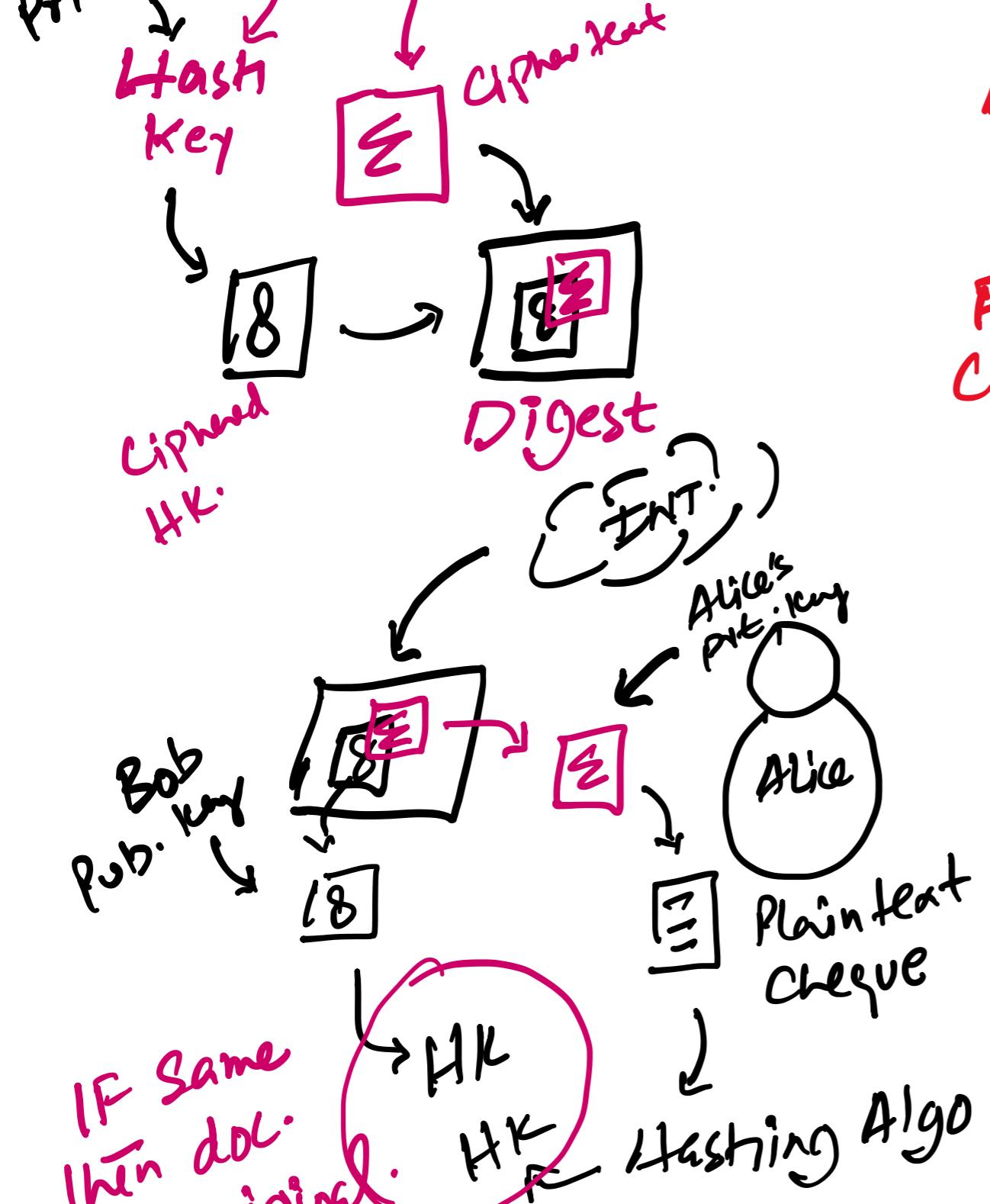
**Public key:** Encryption/Decryption key known to all users.

**Private key:** Encryption/Decryption key known to a single user/computer that is owner.



1. Accessed gmail server as www.gmail.com.
2. Certificate is downloaded over your computer, which contains gmail's public key.
3. Username, password & session key will be encrypted using server's public key & sent to server.
4. Server will use its private key to decrypt msg. and checks user & pass. Further, server will use session key & send a test msg. called welcome msg.

### Digital Signatures Authentication (Verification).



### Solution

Problem