1. Please compare hash function and cryptographic hash function and give an example.

   Hash function為雜湊函式，將資料利用函式打亂為雜湊值再重組，利用雜湊函式得到的結果通常格式固定且大小小於輸入。

   而Cryptographic hash function 為雜湊函式的一種，具有以下六種特性：
   1. Deterministic: 同樣輸入會產生相同輸出
   2. Quick:快速由輸入產生雜湊輸出
   3. One-way function:幾乎不可實現的從輸出逆推回輸入
   4. Avalanche effect:雪崩效應，一點改變輸出差異很大
   5. Collision resistant:避免碰撞（不同輸入產生相同輸出）
   6. Pre-image attack resistant:阻擋原像攻擊，通常以雙重hash來防禦

2. Peter is a noob in cryptocurrency and would like to get some Ethers. First step for him is to have an Ethereum account. He decides to generate an account and manages the wallet himself so he can understand the principles behind. From the class, he knows the account is created by the following steps:

   (a).利用toString('hex')將buffer轉換為hex string

   (b).先藉由keccak256建立public_key_hash變數，再用substr修剪接起'0x'

   (c)
{"address":"1f70d12ca1c9bdfa504126c2b98d52792a2ee70b",
"crypto":
{"cipher":"aes-128-ctr",
"ciphertext":"cd083a359635e8528500ed2c18e0055195a714b19
05f6aad6f429c069bd0d64c",
"cipherparams":{"iv":"2a2d0518abd0bf5fc45eacb1c7a634e7"},
"kdf":"scrypt","kdfparams":
{"dklen":32,"n":262144,"p":1,"r":
8,"salt":"adfac65bc75cbfd0ed8a756ae8c55437f8e3d8a2f543a60fc2
57ee4559a8b2a4"},
"mac":"558e056dd5d1df98734845d5464df092c77dbb17985c85
c809c190e2756f858e"},
"id":"08d0c3ba-f8cb-4dff-9ff4-bc1ba8e8ef0d","version":3}