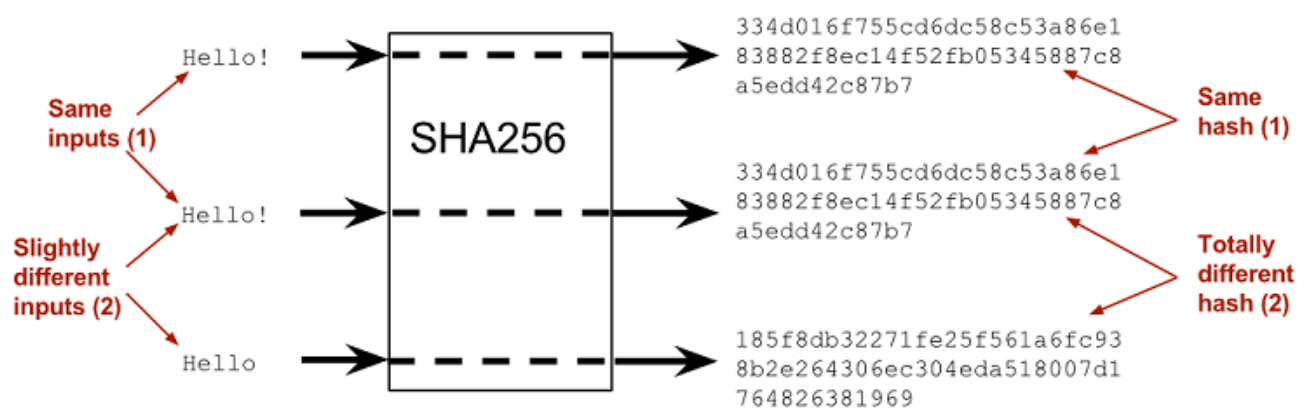# Hashing

A hash function is a function that takes input and create output with following property:

- Input could be any length but out put is fixed length of string
- It is easy to compute output from input but it is impossible to compute input if know output
- 2 difference input will create 2 difference output hash string

Hash string of data like finger print of that data and present for that data, because any change in data will make hash string change in random fashion.

Now, let see how we compute hash with python.

```
# import hashlib, this is standard lib use for calculate hash string
```

Block structure

Blockchain structure

How blocks are chain together

Proof of work

Transaction and block creation

Blockchain as service

Transaction and mining service

Consensus algorithm