Hash Tables

banana

apple

kiwi

mango

pear

cantaloupe

Hash Function

0	apple
1	banana
2	cantaloupe
...	
10	kiwi
...	
12	mango
...	
15	pear

Hash Function

banana

Hash
Function
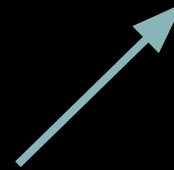
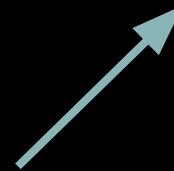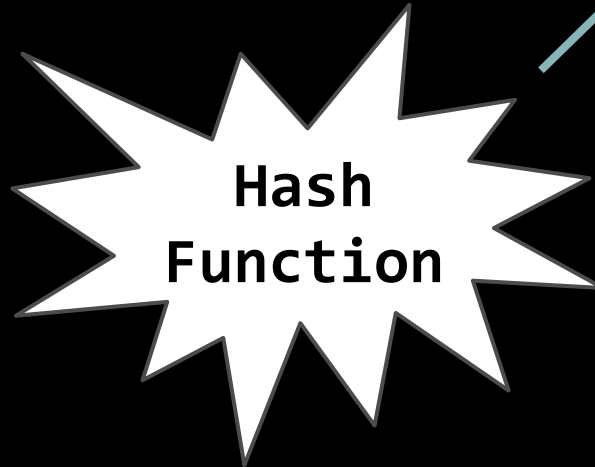| 0	apple
1	
2	cantaloupe
...	
10	kiwi
...	
12	mango
...	
15	pear

Hash Function Example

```c
int hash_function(char* key)
{
    // hash on first letter of string
    int hash = toupper(key[0]) - 'A';

    return hash % SIZE;
}
```
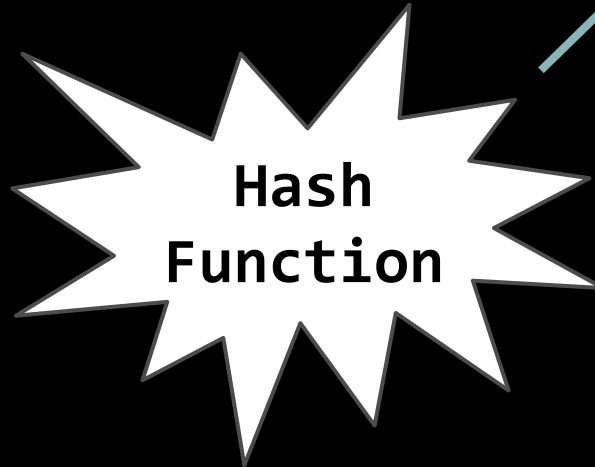
Collisions

Linear Probing

berry →

Hash
Function

0	apple
1	banana
2	cantaloupe
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…	
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…	
15	pear

Separate Chaining