

# Hash Tables: Use



**By the end of this video you will be able to...**

- Explain the difference between a Hash Set and a Hash Map

# Hash Set

| index | data |
|-------|------|
|       |      |
|       |      |
|       | a    |
|       | car  |
|       | boat |
|       |      |
|       |      |

**Tells you if an item is  
in the set or not.**

# Hash Set

| index | data |
|-------|------|
|       |      |
|       |      |
|       | a    |
|       | car  |
|       | boat |
|       |      |
|       |      |

**A Dictionary is perfect  
as a Hash Set**

java.util

## Class HashSet<E>

### Methods

| Modifier and Type | Method and Description  |
|-------------------|---|
| boolean           | <b>add(E e)</b><br>Adds the specified element to this set if it is not already present. |
| boolean           | <b>contains(Object o)</b><br>Returns true if this set contains the specified element.   |

# Hash Map

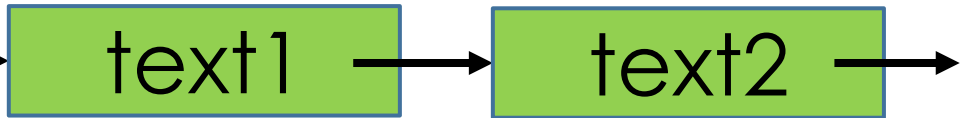
| index | data | data  |
|-------|------|-------|
|       |      |       |
|       |      |       |
|       | key  | value |
|       |      |       |
|       |      |       |
|       |      |       |
|       |      |       |

**Stores both a key and some data associated with the key**

# Hash Map

| index | data | data |
|-------|------|------|
|       |      |      |
|       |      |      |
|       | Ivan |      |
|       |      |      |
|       |      |      |
|       |      |      |
|       |      |      |

Store friends with  
**recent texts**



java.util

## Class HashMap<K,V>

### Methods

| Modifier and Type | Method and Description  |
|-------------------|---|
| V                 | <b>get</b> (Object key)<br>Returns the value to which the specified key is mapped, or null if this map contains no mapping for the key. |
| V                 | <b>put</b> (K key, V value)<br>Associates the specified value with the specified key in this map.                                       |



# Hash Table Key Points



**Average:  $O(1)$  lookup,  
insert, and remove**



**Resizing costs  
No data ordering**