

Abstract Data Types: Maps

A6

The Map ADT

A Map interface and its implementation

ADT Recap

ADT Recap

First-principles implementation of three Java container types:

- List
 - ArrayList, LinkedList implementations (A1, A2)
- Set
 - HashSet, BSTSet implementations (A3, A4, A5)
- Map
 - HashMap, BSTMap implementations (A6)

Introduced hash tables, trees (A4, A5)

The Map ADT (A.K.A. Associative Array)

A map consists of (key, value) pairs

- Each key may occur only once in the map
- Values are retrieved from the map via the key
- Values may be modified
- Key, value pairs may be removed

Our Map Interface

We will explore maps using an interface with the following methods:

```
public interface Map<K, V> {  
    V put(K key, V value);  
    V get(K key);  
    boolean remove(K key);  
    void clear();  
    int size();  
}
```

fruit.get("grape", 73000)

grape

fruit



