



HASHSET

Team 4

HASH SET

- ❖ Find and add elements very quickly.
 - ❖ uses hashing implementation in HashMap
 - The keys are a set - unique, unordered
 - Fast
- ❖ Hashing uses an array of linked lists.
 - The **hashCode()** is used to index into the array
 - Then **equals()** is used to determine if element is in the (short) list of elements at that index
- ❖ The **hashCode()** method and the **equals()** method must be compatible
 - if two objects are equal, they must have the same **hashCode()** value

CONSTRUCTORS

HashSet() Constructs a new, empty set; the backing HashMap instance has default initial capacity (16) and load factor (0.75).

HashSet(Collection<? extends **E**> **c**) Constructs a new set containing the elements in the specified collection.

HashSet(int initialCapacity) Constructs a new, empty set; the backing HashMap instance has the specified initial capacity and default load factor (0.75).

HashSet(int initialCapacity, float loadFactor) Constructs a new, empty set; the backing HashMap instance has the specified initial capacity and the specified load factor.

HOW TO USE HASHSET:

A HashSet is a collection of items where every item is unique, and it is found in the java.util package:

- **Create a HashSet object called cars that will store strings:**

```
import java.util.HashSet; // Import the HashSet class
HashSet<String> cars = new HashSet<String>();
```

- **Add Items**

The HashSet class has many useful methods. For example, to add items to it, use the add() method:

```
// Import the HashSet class
import java.util.HashSet;
public class Main {
    public static void main(String[] args) {
        HashSet<String> cars = new HashSet<String>();
        cars.add("Ford");
        cars.add("BMW");
        cars.add("Mazda");
        cars.add("Volvo");

        System.out.println(cars);
    }
}
```

- **Check If an Item Exists**

To check whether an item exists in a HashSet, use the contains() method:

Example:

```
cars.contains("Ford");
```

- **Remove an Item**

To remove an item, use the remove() method:

Example:

```
cars.remove("Ford");
```

- **Remove all items, use the clear() method:**

Example:

```
cars.clear();
```