

(C++) Node type and ListType (this is the only part of the code handout with C++ code):

```
struct Node {
    int data;
    Node * next;
    Node() { data = 0; next = NULL; }
    Node(int d) { data = d; next = NULL; }
    Node(int d, Node * n) { data = d; next = n; }
};

typedef Node * ListType;
```

(Java) Map<KeyType, ValueType> Interface:

The classes that implement this interface are: **TreeMap** and **HashMap**.

Selected methods:

```
ValueType put(key, value)
    Associates the specified value with the specified key in this map. If the map previously contained a mapping for this
    key, the old value is replaced by the specified value. Returns the previous value associated with specified key, or
    null if there was no mapping for key.

ValueType get(key)
    Returns the value to which this key is mapped or null if the map contains no mapping for this key.

ValueType remove(key)
    Removes the mapping for this key from this map if it is present, otherwise returns null.

int size()
    Number of key-value mappings in this map.

boolean isEmpty()
    Returns true if this map contains no key-value mappings.

Set<Map.Entry<KeyType,ValueType>> entrySet()
    Returns a set view of the entries contained in this map.

Set<KeyType> keySet()
    Returns a set view of the keys contained in this map.
```

(Java) Map.Entry<KeyType, ValueType> Interface

Selected methods:

```
KeyType getKey()
    Return the key of the entry

ValueType getValue()
    Return the value of the entry

void setValue(newValue)
    Replace the current value with newValue
```

(Java) Set<ElmtType> Interface

Selected methods:

```
Iterator<ElmtType> iterator()
    Returns an iterator over the elements in this collection.
```

(Java) Iterator<ElmtType> Interface

```
boolean hasNext()
    Returns true iff the iteration has more elements.

ElmtType next()
    Returns the next element in the iteration. Each successive call returns a different element in the underlying
    collection.

void remove()
    Removes from the underlying collection the last element returned by the iterator.
```