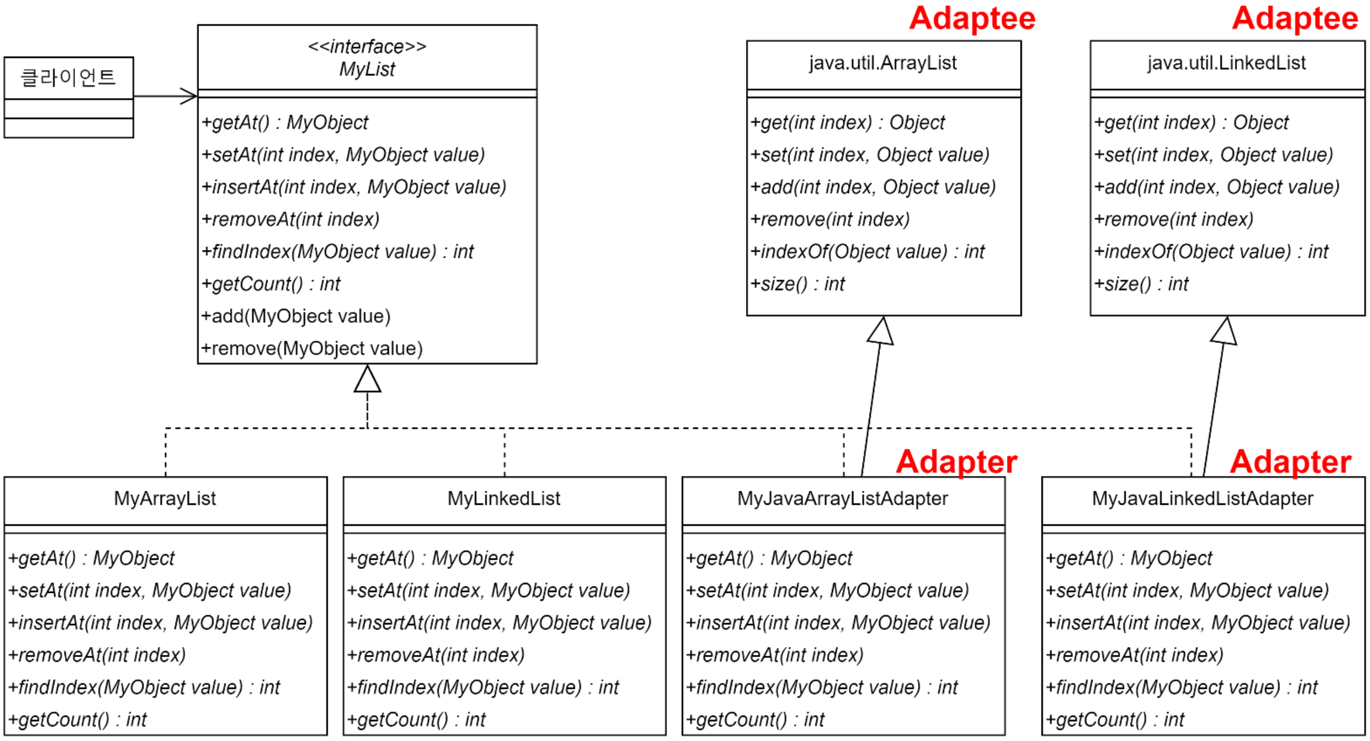
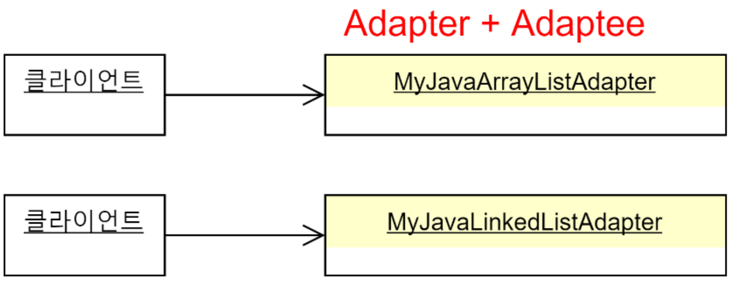
1) 개요



클라이언트
<<interface>>
MyList
+getAt() : MyObject
+setAt(int index, MyObject value)
+insertAt(int index, MyObject value)
+removeAt(int index)
+findIndex(MyObject value) : int
+getCount() : int
+add(MyObject value)
+remove(MyObject value)
Adaptee
java.util.ArrayList
+get(int index) : Object
+set(int index, Object value)
+add(int index, Object value)
+remove(int index)
+indexOf(Object value) : int
+size() : int
Adaptee
java.util.LinkedList
+get(int index) : Object
+set(int index, Object value)
+add(int index, Object value)
+remove(int index)
+indexOf(Object value) : int
+size() : int
MyArrayList
+getAt() : MyObject
+setAt(int index, MyObject value)
+insertAt(int index, MyObject value)
+removeAt(int index)
+findIndex(MyObject value) : int
+getCount() : int
MyLinkedList
+getAt() : MyObject
+setAt(int index, MyObject value)
+insertAt(int index, MyObject value)
+removeAt(int index)
+findIndex(MyObject value) : int
+getCount() : int
Adapter
MyJavaArrayListAdapter
+getAt() : MyObject
+setAt(int index, MyObject value)
+insertAt(int index, MyObject value)
+removeAt(int index)
+findIndex(MyObject value) : int
+getCount() : int
Adapter
MyJavaLinkedListAdapter
+getAt() : MyObject
+setAt(int index, MyObject value)
+insertAt(int index, MyObject value)
+removeAt(int index)
+findIndex(MyObject value) : int
+getCount() : int



Adapter + Adaptee
클라이언트
MyJavaArrayListAdapter
클라이언트
MyJavaLinkedListAdapter

2) MyList.java

```java
package adapter.e3;

interface MyList {

    MyObject getAt(int index);
    void setAt(int index, MyObject value);
    void insertAt(int index, MyObject value);
    void removeAt(int index);
    int findIndex(MyObject value);
    int getCount();

    default boolean add(MyObject value) {
        insertAt(getCount(), value);
        return true;
    }

    default void remove(MyObject value) {
        int index = findIndex(value);
        if (index == -1)
            return;
        removeAt(index);
    }
}
```

3) MyJavaArrayListAdapter.java

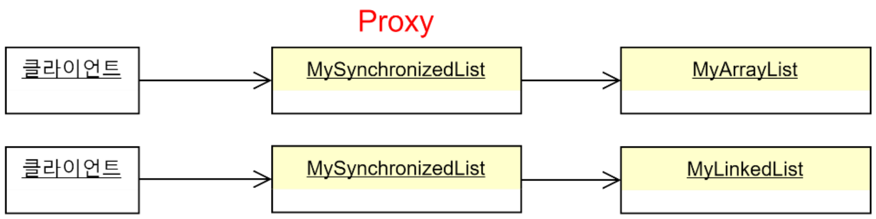
```
package adapter.e3;

import java.util.ArrayList;

public class MyJavaArrayListAdapter extends ArrayList<MyObject> implements MyList {

    @Override
    public MyObject getAt(int index) {
        return super.get(index);
    }

    @Override
    public void setAt(int index, MyObject value) {
        super.set(index, value);
    }

    @Override
    public void insertAt(int index, MyObject value) {
        super.add(index, value);
    }

    @Override
    public void removeAt(int index) {
        super.remove(index);
    }

    @Override
    public int findIndex(MyObject value) {
        return super.indexOf(value);
    }

    @Override
    public int getCount() {
        return super.size();
    }
}
```

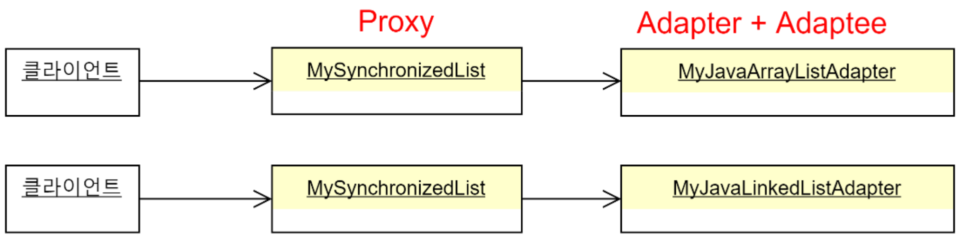
4) MyJavaLinkListAdapter.java

```java
package adapter.e3;

import java.util.LinkedList;

public class MyJavaLinkedListAdapter extends LinkedList<MyObject> implements MyList {

    @Override
    public MyObject getAt(int index) {
        return super.get(index);
    }

    @Override
    public void setAt(int index, MyObject value) {
        super.set(index, value);
    }

    @Override
    public void insertAt(int index, MyObject value) {
        super.add(index, value);
    }

    @Override
    public void removeAt(int index) {
        super.remove(index);
    }

    @Override
    public int findIndex(MyObject value) {
        return super.indexOf(value);
    }

    @Override
    public int getCount() {
        return super.size();
    }
}
```

5) Example3.java

```java
package adapter.e3;

import java.util.ArrayList;
import java.util.List;

public class Example3 {

    static void work(MyList list) {
        for (int i=0; i < 1000; ++i) {
            list.insertAt(0, new MyInt(999));
            list.removeAt(0);
        }
    }

    static void add(MyList list, int count) {
        for (int i = 0; i < count; ++i)
            list.add(new MyInt(i));
    }

    static void print(MyList list) {
        System.out.printf("Count: %d₩n", list.getCount());
        for (int i = 0; i < list.getCount(); ++i)
            System.out.printf("%s ", list.getAt(i));
        System.out.println();
    }

    static void doSomething(MyList list) throws Exception {
        List<Thread> threads = new ArrayList<>();
        add(list, 100);
        for (int i = 0; i < 100; ++i) {
            Thread t = new Thread(() -> work(list));
            t.start();
            threads.add(t);
        }
        for (Thread t: threads)
            t.join();
        print(list);
    }

    public static void main(String[] args) throws Exception {
        doSomething(new MySynchronizedList(new MyArrayList()));
        doSomething(new MySynchronizedList(new MyLinkedList()));
        doSomething(new MySynchronizedList(new MyJavaArrayListAdapter()));
        doSomething(new MySynchronizedList(new MyJavaLinkedListAdapter()));
    }
}
```


Proxy
클라이언트
MySynchronizedList
MyArrayList
클라이언트
MySynchronizedList
MyLinkedList


Proxy
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