Lab Tasks 1

Submission: Provide the following classes, transfer them to `sunfire` and call `/home/course/cs1102s/bin/submit` as in Assignment 3.

```
CheckBalanced.java
MyArrayQueue.java
MyArrayListWithReverse.java
MyTwoStacksArray.java
```

During testing, do not modify the interfaces provided in the given Eclipse project!

1. Exercise 3.16, page 97: Download the assignment project from `http://www.comp.nus.edu.sg/~cs1102s/java/labtasks_01.zip`.

   Complete the class reverseIterator .MyArrayListWithReverse.java.

   The given program MyArrayList.java is taken from the textbook.

   The iterator function of MyArrayListWithReverse should handle the following exceptions:

   - next() throws the exception java. util .NoSuchElementException,
   - remove() throws the exception IllegalStateException if remove() is called without an immediately preceding next().

   (You may ignore exceptions arising from concurrent modification java. util .ConcurrentModificationException.)

2. Exercise 3.21 (b), page 98: Implement class balancing.CheckBalanced.java. Note the following facts about Java comments:

   - When the compiler reads /∗, it skips any text until the next character sequence ∗/ (ignore all brackets between these two "tokens").
   - When the compiler reads //, it skips any text until the next newline character (ignore all brackets in between).

   You may assume that the given Java program has no strings.

3. Exercise 3.24, page 98: Implement the class twoStacks.MyTwoStacksArray.java.

4. Implement a queue data structure as described in the textbook, using arrays, where the front and back pointers wrap around. When enqueue(..) is attempted on a queue whose array is full with queue elements, resize the array as with ArrayList.

   Implement the class queues.MyArrayQueue.java.