**DIGITAL CLOCK LAB INSTRUCTIONS**

**Write it on paper first.**

In addition on parts a, b, and c fill in the highlighted portions of the DigitalClock class.

The following class, DigitalClock is designed to display and manipulate a digital clock. The incomplete class declaration is shown below.

public class DigitalClock

{

//private instance variables to represent hours and minutes are not shown.

/\*\*

\* Constructs a DigitalClock set at 12:00.

\*/

public DigitalClock()

{ /\* implementation not shown \*/ }

/\*\*

\* Constructs a DigitalClock set at the specified hour and minute.

\* @param hour the specified hour

\* @param minute the specified minute

\*/

public DigitalClock(int hour, int minute)

{ /\* implementation not shown \*/ }

/\*\*

\* Advances the time on the DigitalClock by one minute.

\*/

public void advanceTime()

{ /\* implementation not shown \*/ }

/\*\*

\* @return true if this DigitalClock is defective, false otherwise

\*/

public boolean isDefective()

{ /\* implementation not shown \*/ }

//other methods not shown

}

Consider the following class, AllClocks, which stores and manipulates a list of DigitalClock objects.

public class AllClocks

{

private List<DigitalClock> clocks;

/\*\*

\* Constructor creates an empty list of DigitalClock objects.

\*/

public AllClocks()

{ clocks = new ArrayList<DigitalClock>(); }

/\*\*

\* Add a new DigitalClock, set at 12:00, to clocks.

\*/

public void add()

{ clocks.add(new DigitalClock()); }

/\*\*

\* Advance the time by one minute on all the clocks.

\*/

public void advanceTimeOnAll()

{ /\* to be implemented in part (a) \*/ }

/\*\*

\* Remove all defective clocks from the list.

\*/

public void removeDefective()

{ /\* to be implemented in part (b) \*/ }

/\*\*

\* Replace all defective clocks with a new clock set at 12:30,

\* that is, hours 12 and minutes 30.

\*/

public void replaceDefective()

{ /\* to be implemented in part (c) \*/ }

}

1. Write the AllClocks method advanceTimeOnAll, which advances the time by one minute on all the clocks in the ArrayList clocks.

Complete method advanceTimeOnAll below.

/\*\*

\* Advance the time by one minute on all the clocks.

\*/

public void advanceTimeOnAll()

1. Write the AllClocks method removeDefective, which removes all defective clocks from the ArrayList clocks.

Complete method removeDefective below.

/\*\*

\* Remove all defective clocks from the list.

\*/

public void removeDefective()

1. Write the AllClocks method replaceDefective, which replaces each defective clock with a new clock set at 12:30.

Complete method replaceDefective below.

/\*\*

\* Replace all defective clocks with a new clock set at 12:30,

\* that is, hours 12 and minutes 30.

\*/

public void replaceDefective()