![MIT Open Learning Library]

My Courses   All Courses   About   Contact   ♥ Give   Help   **vitorpbarbosa7**

Course   Progress

Course > Readings > Reading 6: Thread Safety > Questions

‹ Previous   📄 📄 ✎ 📄 ✎ 📄 ✎ 📄 ✎ 📄 ✎ 📄   Next ›

Questions
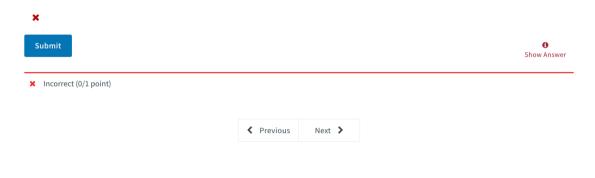
🔖 Bookmark this page

Safety arguments

0/1 point (graded)

Consider the following ADT with a **bad** safety argument, which appeared in the reading:

```
/** MyStringBuffer is a threadsafe mutable string of characters. */
public class MyStringBuffer {
    private String text;
    // Rep invariant:
    //   none
    // Abstraction function:
    //   represents the sequence text[0],...,text[text.length()-1]
    // Thread safety argument:
    //   text is an immutable (and hence threadsafe) String,
    //   so this object is also threadsafe

    /** @return the string represented by this buffer, with all letters converted to uppercase */
    public String toUpperCase() {
        return text.toUpperCase();
    }

    /** @param pos  position to insert text into the buffer.  Requires 0 <= pos <= text.length().
        @param s text to insert
        Mutates this buffer to insert s as a substring at position pos. */
    public void insert(int pos, String s) {
        text = text.substring(0, pos) + s + text.substring(pos);
    }

    /** @return the string represented by this buffer */
    public String toString() {
        return text;
    }

    /** Resets this buffer to the empty string */
    public void clear() {
        text = "";
    }

    /** @return the first character of this buffer, or "" if this buffer is empty */
    public String first() {
        if (text.length() > 0) {
            return String.valueOf(text.charAt(0));
        } else {
            return "";
        }
    }
}
```

Which of these methods are counterexamples to this buggy safety argument, because they have a race condition? In particular, you should mark some method A as a counterexample if it's possible for one thread running method A at the same time as another thread is running some other method, some particular interleaving would violate A's postcondition?

☐ toUpperCase

☑ insert

☐ toString

☑ clear

☑ first

✖

Submit

ⓘ
Show Answer

✖ Incorrect (0/1 point)

‹ Previous   Next ›

⚲ 🕐   Some Rights Reserved

Open Learning Library

About

Accessibility

All Courses

Why Support MIT Open Learning?

Help

Connect

Contact

Twitter

Facebook