Questions

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throw all the things!

1/1 point (graded)

Examine this code for analyzing some `Thing` objects:

```
static void analyzeEverything() {
    analyzeThingsInOrder();
}

static void analyzeThingsInOrder() {
    try {
        for (Thing t : ALL_THE_THINGS) {
            analyzeOneThing(t);
        }
    } catch (AnalysisException e) {
        return;
    }
}

static void analyzeOneThing(Thing t) throws AnalysisException {
    // ...
    // ... maybe go off the end of an array
    // ...
}
```

`AnalysisException` is an unchecked exception.

Which exceptions could be thrown by a call to `analyzeEverything`? Check all that apply.

- [x] ArrayIndexOutOfBoundsException
- [ ] IOException
- [x] NullPointerException
- [ ] AnalysisException
- [x] OutOfMemoryError

✔

Explanation

`ArrayIndexOutOfBoundsException`, `NullPointerException`, and `OutOfMemoryError` are unchecked exceptions; they could be thrown by `analyzeOneThing`, propagate up through `analyzeThingsInOrder`, and be thrown by `analyzeEverything`.
`AnalysisException` is unchecked, but there is no code in `analyzeThingsInOrder` to throw it, and any of them thrown by `analyzeOneThing` will be caught by the try-catch.
`IOException` is a checked exception, so these methods would be required by the compiler to declare it if it could be thrown.

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a terrible thing

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What might happen if `analyzeOneThing` throws an `AnalysisException` in this code? Check all that apply.

- [ ] The program might crash
- [x] We might fail to call analyzeOneThing on all of the Things in ALL_THE_THINGS
- [ ] We might call analyzeOneThing multiple times on some Thing(s)

✔

Explanation

Notice how the try-catch is outside the for loop in the code.
If we are only partially through our iteration over `ALL_THE_THINGS`, the exception will bubble up out of the loop and prematurely end our iteration.
If we wanted to continue iterating past `Thing`s that cause `AnalysisException`s, we would need to put the try-catch inside the loop.
The program will not crash, because we do catch the `AnalysisException` before it can propagate further up the call stack.

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