

Modeling a Stack of Integers

Homework On JML

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You shall carry out the specification of the standard class `Stack` in JML. In writing your specifications you will go through the following steps :

1. Write a `Stack` class that implements a stack of integers in Java. The class must include standard stack operations such as `pop()`, `push(int)`, `top()`, and `size()`, and a method `toString()` that returns a `String` representing the internal state of the stack. Additionally, write a method `pop_push(int)` that carries out a `pop()` then a `push(int)` on the stack.
2. Specify `normal_behavior` preconditions for all methods so as to ensure that all methods are called in expected states.
3. Specify `normal_behavior` postconditions for all methods.
4. Define a class invariant so as to define class objects legal states.
5. Specify the `exceptional_behavior` for methods throwing exceptions.
6. Improve your specifications by using `model`, `represents`, and `in` specifications.

Send me a copy of the Java class and your specifications to my electronic mail address.