

Bruegge 99, Testing, Chapter 9**Bernd Bruegge****Quiz No. 12****November 18, 1999****1. Why is white box testing not recommended for object-oriented systems?**

Polymorphism enables messages to be bound to different methods based on the class of the target. This introduces more cases to test, since white box testing requires all possible bindings to be identified and tested.

Also, since methods in object-oriented languages are shorter, there is not much control flow inside them, but instead algorithms are implemented using several methods, which complicates getting all the methods together to be tested as a whole.

2. What are test stubs and test drivers used for?

Test drivers and test stubs are used to substitute for missing parts of the system while it is being tested. A test driver simulates the part of the system calling the component under test, and the test stub simulates components that are called by the component under test.

3. What is the advantage of using the sandwich testing strategy in integration testing? What are the disadvantages?

The advantage of sandwich testing is that it attempts to combine the best of the top-down and bottom-up strategies. That way, both the bottom layer, that contains the functioning of the system and where interface faults can be found, can be tested in parallel with the upper layer, that contains the user interface. The disadvantage of this though is that the individual components of the middle layer are not tested until integration.

There is a modified sandwich testing strategy that tests the three layers individually before combining them in incremental tests with one another, which corrects the above problem, but introduces need for additional test stubs and drivers. But overall, testing time is shorter compared to top-down and bottom-up testing.