

HOMEWORK ASSIGNMENT: CHAPTER 17

Question 17.1:

Suggest more efficient approaches to implementing comparison-based test oracles when it is not possible to store the whole output.

In class, alternatives to storing detailed execution logs for versions of a program we discussed as possibly consisting of using assertions to check for program values at a given time within the program. Instead of recording the steps as executed in a program (by examining, say core dumps or stack traces), it should be possible to use Oracle's asserted inside the program, updating the oracle in each version of the modified files, on an ongoing basis instead.

Question: 17.2:

To what extent does the "test first" goal of XP achieve the goal of using test oracles derived automatically from a spec statement to record & communicate intended behavior of a program?

The "test first" goal of XP is designed to ensure mainly that functional goals for a program tie into the specification for a program at the outset of a system's design and implementation. Test oracles designed in the "test first" oriented approach assume the intended results at each phase in a program's development are known in advance. Assuming this is the case, the specification statement has been very clear about the intent of the program. Using test cases as a specification statement implies that we are documenting the nature and expected behavior at a given time in terms of results that can be verified. This corresponds to oracles being derived from specification statements because test cases can be verified to ensure a program meets expected output/behaviors at a given point during execution, but it may be more-so a means of describing USING test cases AS the specification, if one is not yet available.