COSC 4345 Project Scenario

Project Business Scenario

You are working for a computer manufacturer called Widget Computers Inc. The company has a product group organization that comprises of a group of hardware engineers responsible for designing new computers.

Widget Computers Inc. has designed a new server and has ten new prototype systems. The prototype systems are simply proof of concept computers that have yet to be put into production. The prototype systems will not go into production until they have been completely tested.

Software tests will be developed to exercise and test all of the subsystems of the new prototype computers. Subsystems include storage (e.g., reading and writing to disk), memory, networking, CPU utilization, etc. etc…

The wrong approach is to simply write a suite of software tests that exercise the computers and have a technician manually run the tests. For example, assume there is a test to read and write data from a file to test the storage system. A technician can run the test on the prototype computer and then manually record whether the test passed or failed.

The problem with this approach is that the tests need to run over-and-over again during the course of many days. The hardware engineers say that certain design defects will only show up after hundreds of hours of up time. Manually executing tests over-and-over requires too much human interaction. An automated test system is required.

The Old System

The old system of testing new systems was for a technician to write python scripts to test computer subsystems and them manually run the tests. Results (i.e., pass or fail) were emailed to the hardware engineers.

The Old System Problems

- Doesn't scale and requires one or more full-time technicians
- Doesn't record past history of results since everything is communicated via email
- Doesn't run 24X7. Can only run tests when the technician is in the office

The New System

Your team has been assigned the task of developing a new automated test framework for the company. At the highest level, the automated test system will periodically execute tests on the prototype computers and record the results in a central database.

In addition to the automated test system, you will also develop a suite of software tests to run on the new server prototypes. The tests will test the important computer sub-systems.