

NeverFail

Automated System Testing

A Project by:

Anthony Ofili, Aziz Alibrahim and Paloma Samaniego

Problem Diagnosis



The Problem

- Systems don't run at optimum efficiency simply because they are not tested efficiently.
 - Doesn't scale and requires one or more full-time technicians
 - Doesn't record past history of results since everything is communicated via email
 - Can only run tests when the technician is in the office

Proposed Solution



NeverFail Solution

- Automated test system that utilizes a java controller, mySQL database, client tests written in python and php to run a web based GUI.
- System admin that can log in, add/edit/remove python tests, view test logs, create and run a test suite which can be saved for future use.
- By allowing the creation of Test Suites it is easy for the admin to incorporate the use of our scheduling feature to run the desired test suite on the desired client at any given time increments, without any need for business process changes.



Building Blocks

- Inputs
 - Java controller
 - mySQL database
 - Python tests
 - PHP Command In Control
- Outputs
 - Web based GUI
- Workflow: Java controller requests tests from Command Control, tests will run, and ultimately test results will be posted to a web UI for the administrator to view.



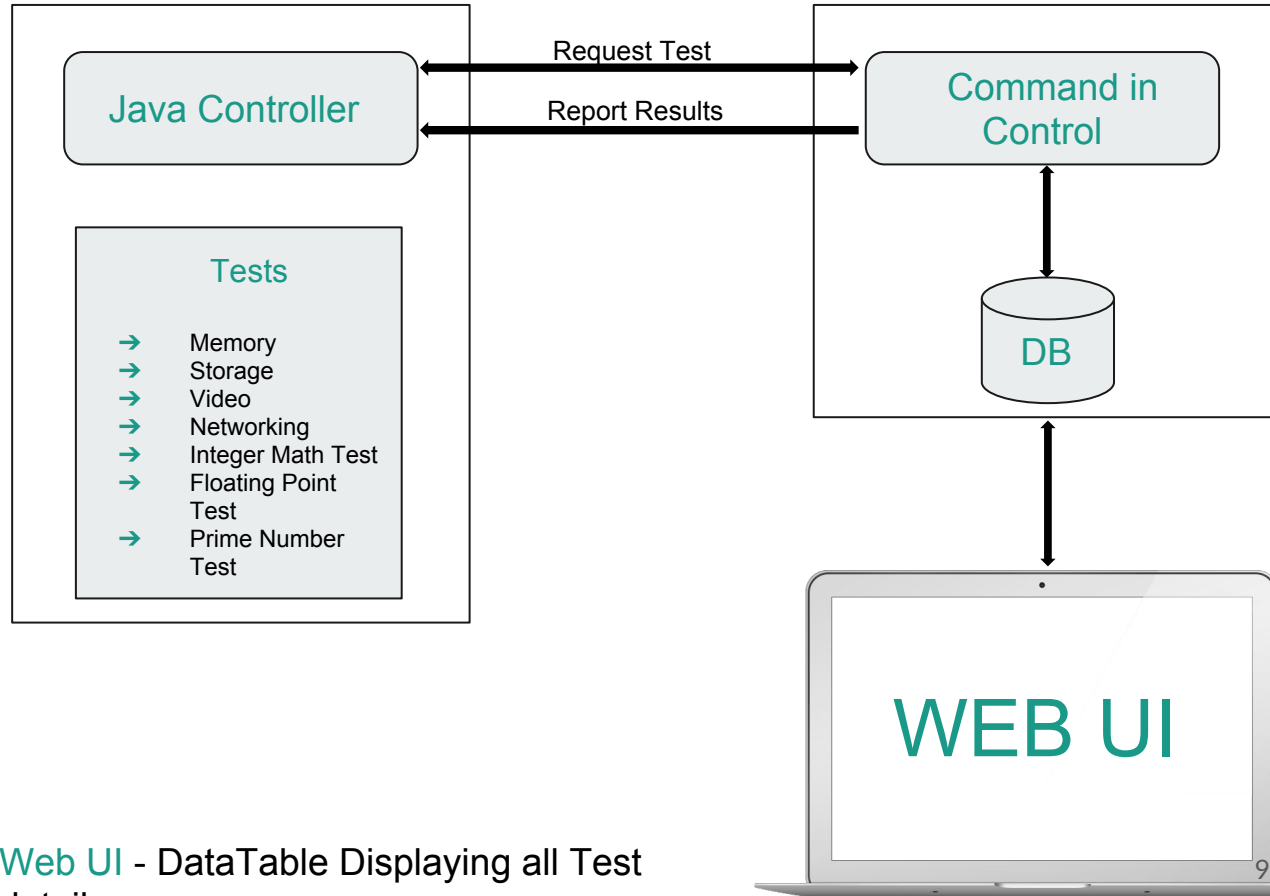
Benefits

1. Reduces Manpower
2. Ensures the systems in a company/institution are running efficiently.
3. Allows tests to be run 24/7 not just when Technician is in the office

Construction Details

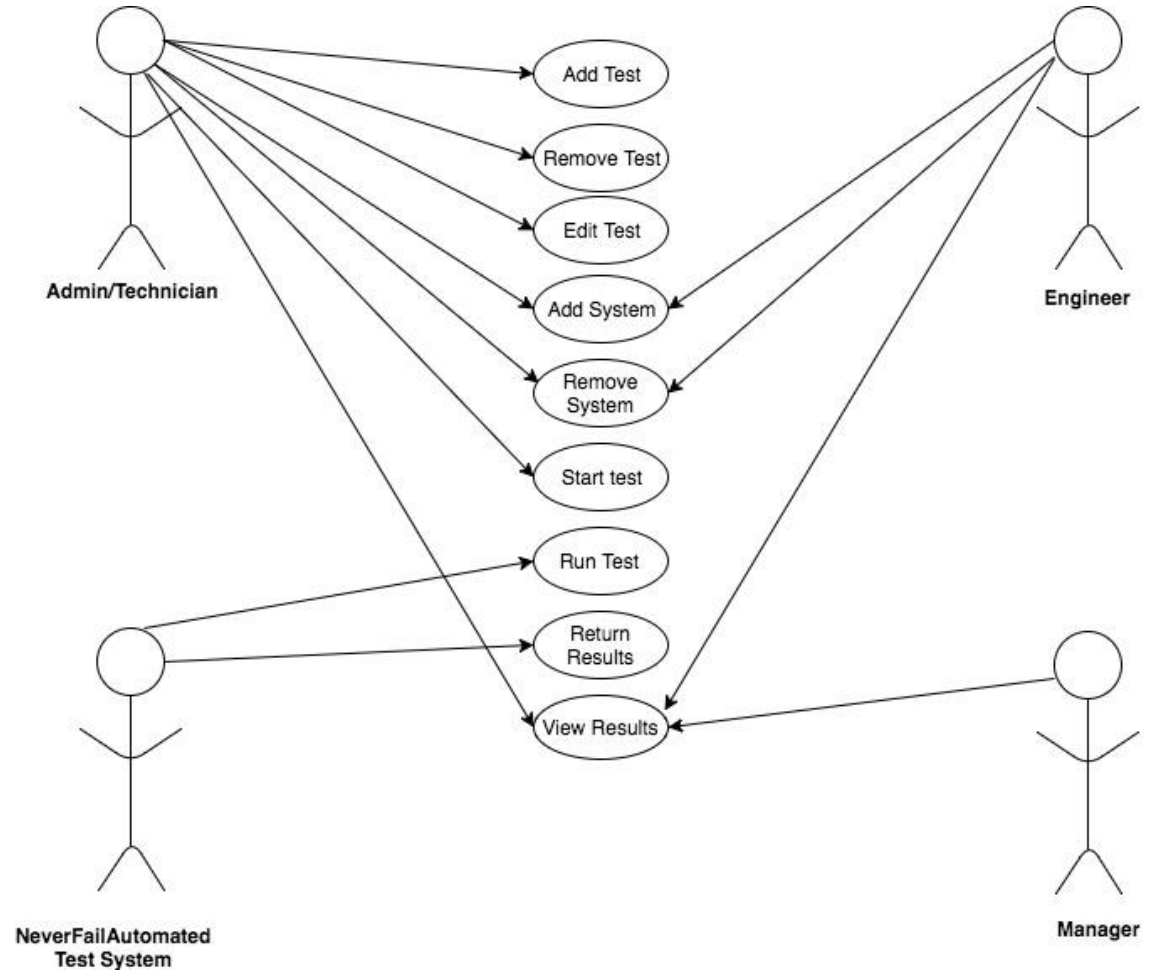


System Diagram



Web UI - DataTable Displaying all Test details

Use Cases





Initial Requirements

1. SUT requests tests from server
2. Tests will test major subsystems of a computer such as storage, networking and memory
3. SUT runs the tests and returns SUCCESS/FAIL
4. Test results stored in database
5. A web UI to display test results history
6. Persistent storage to store tests, results, and test client information
7. Automate the running of tests on multiple SUTs



Technologies and Tools

- Python for writing tests to be implemented
- PHP to serve as Command and Control for the web interface:
- MYSQL to build the database where tests will be recorded
- Java to manage the interaction between the system and the client
- HTML & Bootstrap for the Web Front-End
- JavaScript plugins such as JQuery for DataTables



Approach

Test-driven development

- All test cases will be written before the component the test is intended for is written.
- This methodology encourages a complete understanding of the inner workings of the NeverFail system, including corner cases.
- After the test case is written, write the code, run the tests, refactor the code and repeat

DEMO

Q&A
