Software development

Testing



Software systems

Everyone aware of software systems
In our homes, at work, while shopping
Day-to-day business applications, e.g. Banking, cars, washing machines
Software did not work as expected: an error on a bill, website did not load correctly
Different levels of issues: spelling mistages vs. system is down
Mistakes during the design and build
Called as defects or sometimes bugs or faults



Software code ready -> executed -> failure Sometimes failures are not never noticed

Testing and quality

Testing helps us to measure the quality
Numbers of defects found, the test run, the system coverage
Poor test may uncover few defects
A well-designed test will uncover defects if they are present
Project aim to deliver software to specification
Project to deliver what the customer needs requires
Delivered system must meet the specification
Customer wants the project to be within budject and timescale
Should arrive when they need it and not cost too much
Need to understant customer expectations
If customer need to spent more money than they want -> they won't be impressed
Cheap to fix defects during development process



Testing process

- Design testcases based on requirements
- ☐ TestSet design -> collecting testcases per new application version
- ☐ Running testSet (manual or automatic)
- ☐ Tester to detect defects
- ☐ Test & defects reporting
- ☐ Testing & defects review
- Defects fixing -> assigning to developers
- ☐ Retest fixed defects



Fixing process

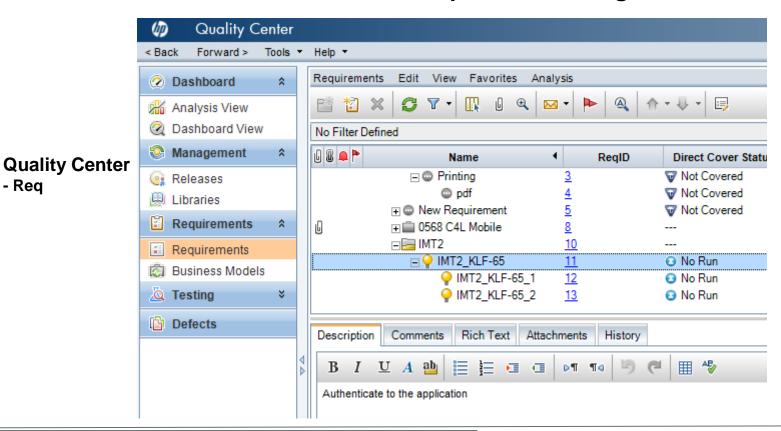
- Developer starts to work with assigned defect -> debugging
- ☐ Repair the code and check that the code now executes as expected
- ☐ Developer tries to fix&test in own environment(pc)
- Sometimes simulators or real devices need to be used
- ☐ The fix is often tested separately (tester) to confirm the fix



Test environment

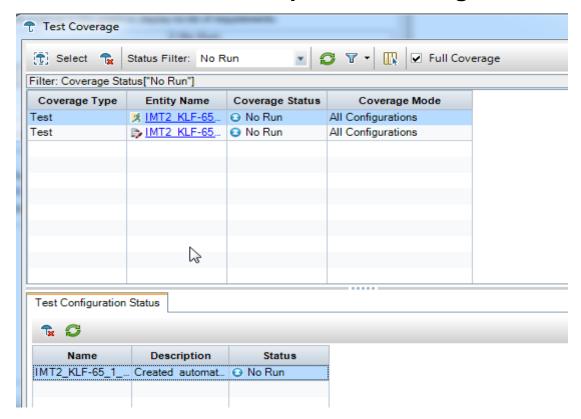
- ☐ Continues Integration(CI), Development, Acceptance and Production
- System testing requires controlled test environment
- ☐ Control of the software versions (e.g. SVN)
- ☐ Test environment should correspond to the final target or production environment
- Minimize the risk of environment specific failures not being found by testing





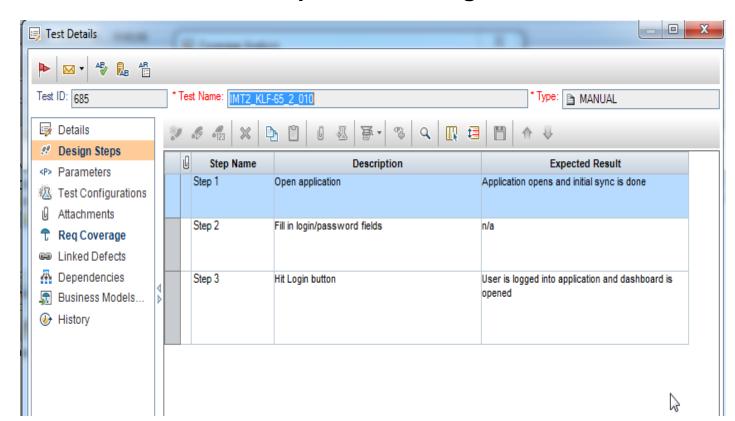


- Req



Quality Center - Test Coverage





Quality Center - Design steps



Quality Center - Test Lab

