Creating automated tests that survive even continuous change

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Description:
While it may be more obvious during development than in the maintenance phase, software evolves all the time. Automated system and acceptance tests often respond to these changes by refusing to run any longer. Because of the maintenance effort, many projects abandon automated testing after a while or do not even attempt it, and miss out on its many benefits. Which is even more unfortunate considering that the more changes affect the software, the more important the automated test is to make sure the software still works as before.

This presentation discusses practical techniques that have reduced maintenance effort significantly, using real examples from their application to two systems: A web application and an embedded system. These techniques are:
 - Moving interface details out of test cases,
- Moving execution details out of test cases,
- Moving tooling details out of test cases,
- Moving environmental / configuration data out of test cases,
- Moving test data out of test cases,
- And (test) specification techniques from (Agile) approaches like BDD (Behavior Driven Development).

Applying these techniques has resulted in automated testing solutions that can deal with the evolution of the software. And while they are not new, they are rarely discussed, so many organisations are not familiar with them or are not yet applying them to their testware.

Lessons:

The main lessons from this presentation are:
- That certain techniques reduce maintenance to the testware for a system, regardless of its kind of interface or what tooling is used,
- That these techniques boil down to moving maintenance sensitive details elsewhere using abstractions, and
- How to apply the techniques.

Author profile:

Martin Gijsen is an independent test automation architect. He designs and implements low maintenance solutions for automated testing that suit an organisation in terms of policies, people, processes and technology, for any kind of system. Martin is also a trainer and coach, a frequent presenter at conferences and the author of the PowerTools, an open source framework for automated testing.