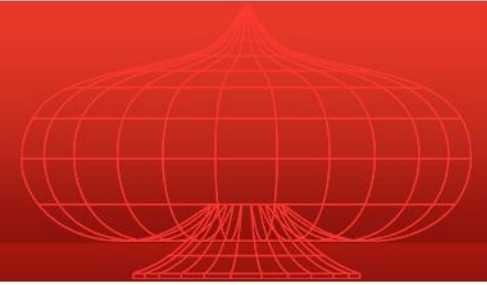




Test Automation Frameworks

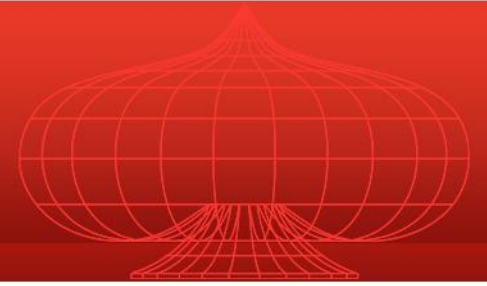
Agenda



- Format / Expectations
- Getting Started - Test Automation Best Practices
- What is an Automation Framework?
- Framework Types & Implementations
- Framework Demo
- Frameworks in an Agile Environment
- Case Study



Test Automation Best Practices



(At least, Top 10 based on our experience 😊)

10. Set goals up front
9. Select an approach
8. Decide what to automate
7. Be present, from the beginning
6. Choose the right tool(s)



Test Automation Best Practices (cont'd)

5. Use PoCs to prove effectiveness
4. Get Management Buy-In
3. Automate the ***Right*** Tests
2. Inspect, Reflect, & Adapt
1. The Right People + The Right Tools = Success



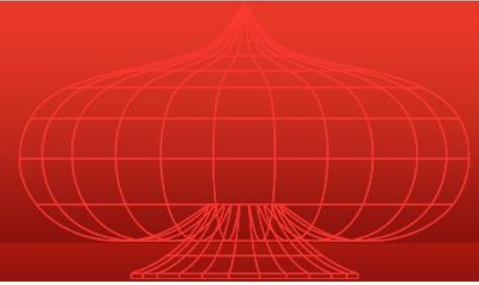
What is an Automation Framework?



- An automation framework defines a set of guidelines for all phases of test automation
- It includes Requirements Analysis, Script Design, Execution, & Reporting and Maintenance
- The framework (approach) should be application independent
- Can lower test script maintenance costs due to modularity



Automation Framework Types



- Modular > Consists of small independent scripts
- Data Driven > Used when flow of the application remains constant and only the data changes
- Keyword Driven > Provides generic keywords that can be used with any type of application
- Hybrid > Combines Data Driven and Keyword Driven



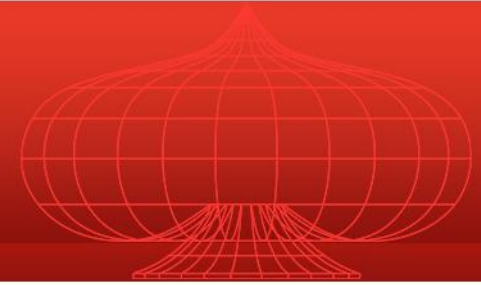
Automation Framework Implementation



- Considerations for Data Driven Execution
 - Separation of data from the automation scripts by moving the data to an input file called the data set.
 - Scripts can be run using different data sets.
 - A central data repository is required for this approach
 - Repository types include .csv, spreadsheets, databases, etc
 - This framework is supported by most test automation tools



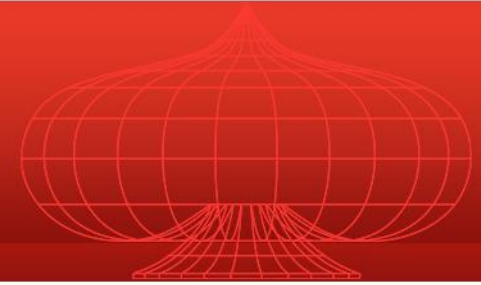
...more Implementation!



- Library of common functions:
 - Must be built.
 - Helps to avoid rework and improves re-usability
 - Examples: verifications, error handling, data handling, recovery, reporting, etc.
 - Must be well documented, maintained for reuse
 - Must be tested thoroughly before using them in test scripts



...even more Implementation!



- Reusable Actions:
 - Actions that can be automated once and will be re-used by multiple scripts (Ex: Login, Logoff, Registration, etc.)
 - Should be leveraged to the fullest extent
- Coding Standards:
 - Need to be defined and documented
 - Naming conventions should be defined
 - Commenting procedure must be standardized



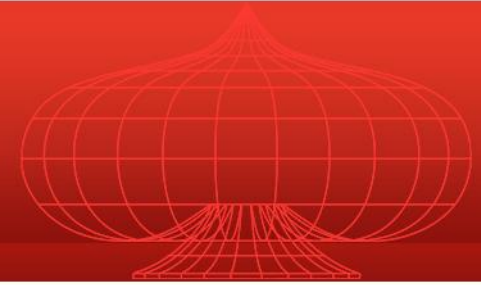
The Implementation Last Word ... really!



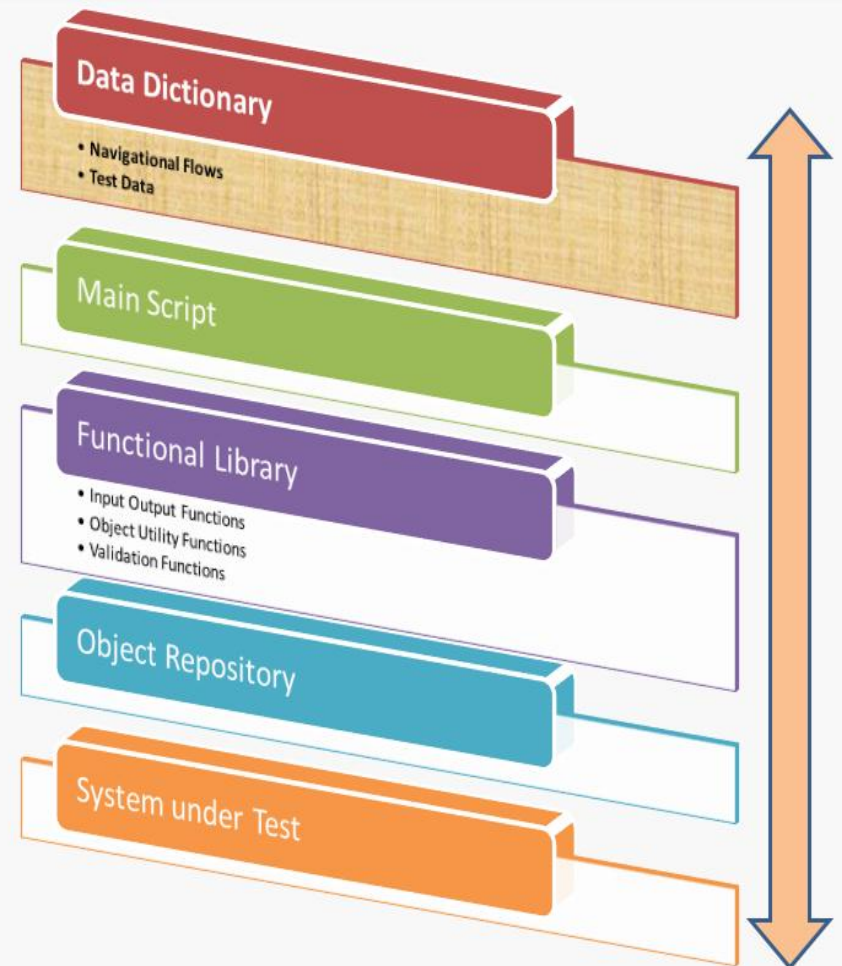
- Externally Configurable:
 - Able to run sets of scripts against different environments
 - Configurable items of a script will be centralized
- Documentation:
 - Test coverage, function lists, execution instructions, test data requirements, script details, etc. must be developed
 - Simplifies maintenance



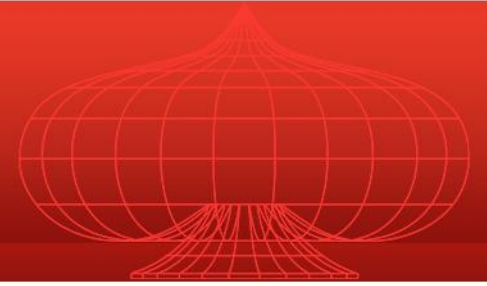
How it works...



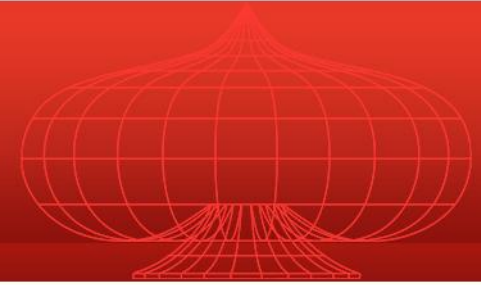
- Data is entered for work flows and validations
- Main script reads it and calls the functions in the functional library
- Translated to actions, and applied to the system under test



Framework Demo



Framework Benefits



- Saves license costs
- More SME's contributing
- Expedited script development
- Codeless automation of test scenarios
- Automate before the application is “automation-ready”
- Quick results analysis using html report
- Automatic integration to test management tools (Eg:QC)



Challenges in an Agile Environment



- Overhead associated with ‘getting started’
- When do we have time to automate?
- Feeling the ‘QA Squeeze’
- Keeping up with the developers
- There’s only one of me...



Automation & Agile : Best Friends 😊



- Automation can begin as soon as the stories and work flows are available
- Test early, test often = Automate early, automate often
- Test automation level sets the skills on the team
- You can teach developers to contribute to the framework 😊



Case Study - No Methodology: Challenge

- Company “LOST” expects to automate all tests and save money by reducing test cycle time.
- All application testing will be automated at once to produce big savings across the board ASAP.
- Time has not been set aside evaluate automation tools or to create a PoC based on the chosen tool.
- Management expects testers to stay productive while learning the new tool.



Case Study - No Methodology: Solution

- LOST has purchased a record and playback tool to automate all tests.
- This tool will be used exclusively by the existing QA team which has no programming experience.
- The QA team will use the provided online help to learn the new automation tool.
- Script design will be left up to the individual tester for each script.



Case Study - No Methodology: Outcome

- Testers are “lost” from the start.
- Since no framework is in place each tester follows a different methodology.
- Scripts are recorded and can be played back at first but as the AUT changes the majority of the scripts become brittle and must be re-recorded from scratch.
- Test automation fails and no ROI is achieved.

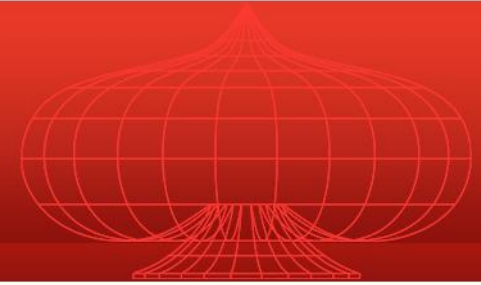


Case Study - What they should have done

- Follow test automation best practices
- Develop an automation framework by following a standard methodology.
- Train resources as needed.
- Evaluate ROI



Thank You!

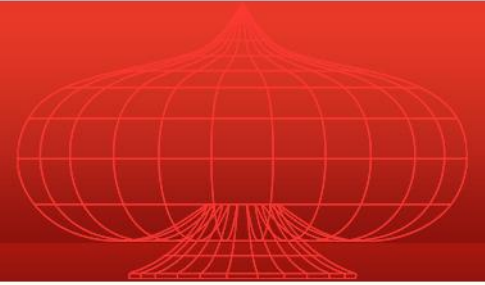


Expectations?

Questions?

Chocolate?

Recruitment Contact



Brad Szallar

- Bradley.Szallar@us.sogeti.com