Dynamic Automation Execution Engine

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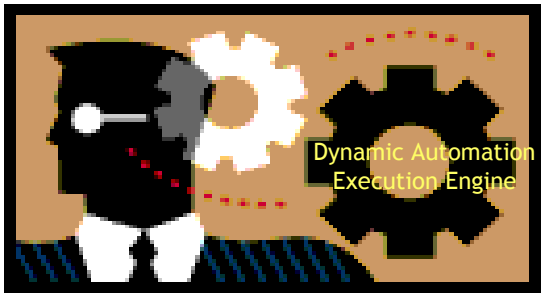
Introduction

"What to Test" and " How to Test" is as important as "Why Test"

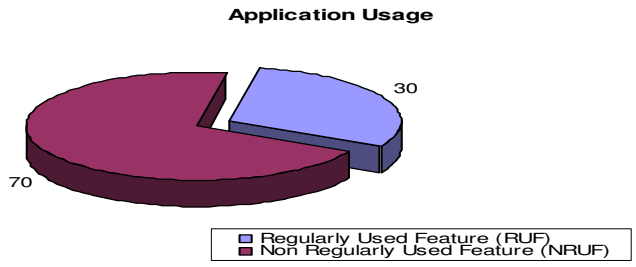
First Generation – Record Playback
Second Generation – Data Driven
Third Generation – Keyword Driven

Next Generation - Dynamic Automation Execution Engine



Dynamic Automation Execution Engine helps in Regularly Used Feature testing

Problem Definition / The Challenge



In the sample application,

- Only 30% of the application was frequently used by end users
- Its critical to test this 30% very thoroughly in less period of time

Problem Definition / The Challenge…

Challenges faced by organization in the new millennium

- Defining the scope of testing is becoming complicated
- Increase in the cost of testing because of frequency of releases
- Less time to Market
- How much testing is enough?
- When to end testing?

Issues

- Coverage of testing of modules of applications which are used less frequently
- Quality of testing vs. coverage
- Increase in cost
- Application knowledge is a must for the tester
- Impact on time to Market

Solution

MphasiS has developed Dynamic Automation Execution Engine which tests the application by mimicking the user behavior (RUF) in the production environment.

This unique engine helps the user organization to test only the modules of the application which are used frequently.

- No recording/learning of the objects of the web page before hand
- The engine reads the data dynamically from XML
- Use of dynamic instantiation to identify objects on the web page
- XML files can be used as input to automation
- The XML files contain the test scenario to be executed

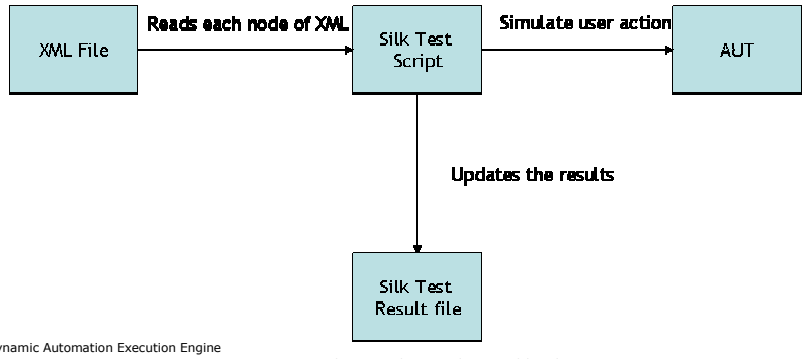
Solution…

Features of Dynamic Automation Execution Engine - Business Process Validation

- Read the user behavior (Navigation and Data)
- Simulate the same set of user actions by reading from an XML file dynamically at run time

Dynamic Automation Execution Engine Implementation

A generic SilkTest script was created which dynamically reads each node from the input XML file and executes the actions on the application at runtime. This process would continue till the end of the XML is reached. The SilkTest script also updates the results to the SilkTest results file.



Benefits & Conclusions

The benefits of Dynamic Automation Execution engine:

- No recording/learning of the objects of the web page is required
- No Application/Product knowledge required
- Scope is defined based on the user behavior
- Test Coverage was defined based on the RUF in real world
- Decrease in the cost of testing
- Low Investment on Automation
- Quicker delivery of the scripts
- Maintenance is easy

Benefits & Conclusions – Cont'd

Application Y			Application X		
Data Driven Approach			XML Approach		
Phases	Effort (PD)	Resources (Avg)	Phases	Effort (PD)	Resources (Avg)
Development	378	3	Designing of the engine	126	2
Maintenance*	116	2	Development	NA	0
*From June 2007 to Oct 2007			Maintenance	Ongoing for only engine	1

Comparison table		
Parameters for Evaluation	Data Driven Approach	XML approach
Inputs	Manual test case excel	XML
Resources	2 resources on an avg	1
Scripting effort	378 PD	126 PD (Savings of 252 PD of effort)
Ongoing activities	Maintenance of automation scripts	Maintenance of engine
Design Factor	Re-usability needs to be considered	Engine is generic piece of code that needs only fine tuning

Q & A

Q & A ....