Case Study

To succeed in business it is necessary to make others see things as you see them.

Test Automation of Web based Reporting & Analytics Product

Abstract

The project is a comprehensive web-based solution for enterprise-wide reporting, information delivery, analysis and decision-making. It can be integrated within a web-based application as a core reporting, information delivery back-end system and information analysis front-end system. The project connects to any data source (any RDBMS) and can be integrated into Java and .Net applications. It provides secure and scalable distribution of analytical reports via Internet, Intranet, Extranet and Corporate Portals. It's developed using J2EE, web services and XML. Each screen of the application contains objects that are dynamically created and hence requires an in-depth study of application source code while testing the product. The client was able to deliver customized versions faster to its end-customers.

Case Study

Client Profile

The client is a software product vendor in the information management space, headquartered in USA with over 2000 customers and 170,000 licensed users spread across 40 countries. It helps businesses generate 'actionable information' from silos of data, through its award winning easy to use reporting technology in an uncomplicated and user-friendly manner.

Business Need

Client's application was used by various customer groups and on going changes and customizations were expected over couple of years. Client needed to automate their core sanity testing framework to ensure that future testing was done on timely basis along with reduced efforts.

They wanted a one stop vendor who can suffice their need of creating Automation framework within their budget along with carry out end to end testing of all the releases for next couple of years.

With reference from one of the client's management team member, with whom Gateway had worked satisfactory in the past, Gateway was selected for initial discussion. The promptness in responding and right suggestion at right time assured client towards professionalism of Gateway team.

Client also wanted that the offshore team works with overlapping time zone along with tight schedules to be observed.

Challenges

- Knowledge transfers of the application as no such requirements documents were available.

- Communication and close track of all communication between the Client and their Development team.

- Selection of the module(s) to be included for automation testing.

- Handling Dynamics Objects:- Certain web objects had unique IDs, as they were created during run time. The IDs assigned to such objects were random & no specific pattern was followed. Due to this, at Runtime, new elements were added to a tree structure, which caused dynamic addition/deletion of elements. Gateway used available data from source code to identify commonality among the objects and developed powerful user defined functions to overcome this limitation.

- Parameterizing the scripts: Automated scripts were required to read input values from some parameter file(s). As a result the testing team had to write more scripts to read value- Gateway's team inserted XML files instead of text/inf file, and parameters were read using VbScript and XML DOM. With the help of MS SQL Server Reporting services, one can extract the data or perform detailed analysis on financial performance and manufacturing operations.

- Customized report development for decision makers and government authorities.

Case Study

Gateway's Solution

The success of any test automation project greatly lies in the expertise and quality of automation team. Gateway setup a 6-member team comprising of 1 project manager, 3 manual test engineers and 2 automation test engineers.

Tools Selection

The client was bound by some budgetary limitations especially in acquiring tool licenses as their confidence on Automation was too low. Gateway's automation experts quickly studied the product and the functional specifications and narrowed down to three automation tools.

These three tools were further compared using broad criteria such as the compatibility of the automation tool against the product under test, highly important test cases and critical flow paths of the product for automation. A summary of the research was presented to the client with a recommendation to use QTP (Quick Test Professional).

Approach followed for the test automation after tool selection

A key word driven and framework based approach was adopted for automation. Gateway's framework provides a well-defined platform to design and develop the automation scripts and minimize the chances of occurrence of coding and logical errors. It provided a structure of all defined standards to be followed by each member of automation team.

Technology

- J2EE
- XML
- QTP8.2
- SQL Server

Industry

Information Sharing portal, Business to Business Portal

Benefits

Gateway brought to table the following business benefits for the client

- The client was able to deliver customized versions faster to its end-customers
- Use of effective automation techniques resulted in a good saving to the client.
- More than 80% of the test cases automated, bringing down the time required to do build verification & basic testing from 3 days to 8 hours.
- Modular and reusable scripting in VB script reduced the initiation time by 20%.

Approach followed for the test automation after tool selection

A key word driven and framework based approach was adopted for automation. Gateway's framework provides a well-defined platform to design and develop the automation scripts and minimize the chances of occurrence of coding and logical errors. It provided a structure of all defined standards to be followed by each member of automation team.

Framework based approach also gave the preliminary idea of what to automate and what not to. Essentially automation was done only on tests that would be repeated in every test cycle. An Actual Test Case Document was developed using spreadsheet containing special keywords. This approach ensured that the entire process was data-driven, including the functionality.

Java edition of the product was first automated and then the script was used for .net version. VbScript was used for scripting. Few OCX controls were written for adding custom functions to the scripts all parts of the scripts were programmed instead of using the conventional record and playback approach. Scripts were written in such a way that any number of test cases could be added without making modification to it.

Gateway TestLabs defines test designs and delivers business enabled Testing solutions that help Global 2000 companies win in a flat world. These solutions focus on providing strategic differentiation and operational superiority to clients. Gateway creates these solutions for its clients by leveraging its domain and business expertise along with a complete range of testing services

With Gateway, clients are assured of a transparent business partner, world-class processes, speed of execution and the power to stretch their IT budget by leveraging the Global Delivery Model.