Thesis Overview:

Test of distributed applications migration to Web environments

María Elena Ciolli
Universidad Nacional de La Plata, Facultad de Informática, Mayo 2008
Software Engineer Magister
Advisor: Juan Giró
mciolli@gmail.com

During the last decades information technology has lead large and complex information systems, many of which reached the evolution limit. Although this problem has been alert for long ago, the exponential Web growth and the necessity to stay competitive in this changing and dynamic world gave an extra importance to the problem. The organizations have to take advantage of the Web potential, but, at the same time, the knowledge, experience and business rules are focused in these information systems which seem to be immune to adaptation.

For this reason, during the last years there has been an increasing number of Web migration experiences on not based Web distributed applications, becoming an important investigation field and professional practice in Software Engineering.

In this sense, some different alternatives have been presented and tested, products have been developed and it is possible to find enough bibliography related to systems migrations on traditional mainframes platforms to open environments. However, there is not much information about test migration and neither characteristic of validations of distributed Web environment applications.

This validation was an incentive to make this essay, which presents the systems migrations to Web focused on testing, with specific user and functional interfaces requirements.

There is a methodology to the logic and physic analysis of distributed applications to migrate to Web environments and can be implemented through a study case. This case belongs to a distributed system developed through an analysis methodology, structure design and the migrated application to Web that was developed through a based UML methodology.

This essay is based on a previous "regression" testing knowledge, black box testing and user graphic interfaces testing. Besides, due to the fact that the testing life cycle is inside the software life cycle, the suggested focus promotes existing test cases rework, as a result of traceability of the use cases to the distributed system, the unique tests automation, integration and "regression".

General Objectives

In this essay we establish the following general objectives:

1. To study the requirements of distributed application reutilization into Web application based on the case study's traceability of both applications.
2. To define testing methodologies for Web migration results in the distributed application not performed in Web environment based on the properties considerations to be preserved on the mentioned Web environment.
3. To register the compiled information based on collected results after done migration test.

Specific Objectives

In order to reach the general objectives proposed, the following specific objectives are established:

1. To build metamodels in order to abstract common properties of Web and traditional application

models, which are used as a baseline for mapping case studies used on distributed non Web applications to case studies of applications based on Web technology.

2. To define an analysis methodology of migration from distributed application to Web environments, focusing on testing with test cases reutilization that can anticipate automatic tools use for the execution and reuse of the test cases generated.

3. To apply the suggested methodology taking as case study the "Management Academy System" of a University in order to evaluate its performance.

María Elena Ciolli
mciolli@gmail.com