Introduction

Good afternoon everyone

My name is Bill Liu and I am the Software IT intern. I am a masters student at NJIT studying computer science

Project

My project this summer is building a test automation system

The general purpose is to create a system that constantly checks our website 911memorial.org to make sure that all of the critical web pages are functional and that basically nothing is broken.

What is test automation

Test Automation is a system of software that control and execute test suites then report on the outcome

Many of these tests as we will see later are very repetitive but necessary tasks

They are necessary because testing if something still works is a critical part of continuous integration, in that because our website and applications are constantly changing and being made better

Why Test Automation

Provide real-time and scheduled (every day) reassurances that our web pages and functions are working properly

For example: Our donation page and members join page are important parts of our website and always need to be sure they are doing what its suppose to

Significantly reduce the amount of time the developer team spends on testing functionalities

Since our mission as a memorial and museum is so important to so many, we must always make sure our websites are always professional and proper and no accidental formatting bugs mess up our look

And you know how advertisements say “with one click of a button?”

Well our system does all the above with NO click of a button!

Contractors sending in their bids

There were Many possible directions to take to achieve test automation goal because Numerous similar technologies and services available.

The task was to test and select the best available tools that fitted our needs the most

2 approaches: User Aceptance Tests and Visual Regression Tests

And out of many there were two.

Two that fitted our needs perfectly and handles with just enough agility to evolve with the department and our tasks.

User Aceptance Tests: Catching Errors

Codeception is a full stack testing framework written in PHP

Can control your web browser to perform certain tasks on websites then check if the tasks were completed. Such as signing up for membership as a family or stuff

Generates reports that report any errors in the execution and provides snapshots of where the error occurred

User Acceptance Tests Report

This picture shows the report where everything passes and all of these functionalities work as they should

Codeception Video

This is a video shows what it looks like when the system is controlling the browser while performing these tasks

These tests are being performed on a consistent basis in the background

//cut to 30 seconds

Visual Regression Tests Report

The second half of our test suite is the visual regression tests report

There the purpose is for the program to visually inspect a webpage pixel by pixel for any differences when compared to a reference snapshot

This is our calendar and events page and you can see that the testing system picked up changes to the page as new articles or events are added.

Visual Regression Tests Scrubber

We had an update on the website in july where there were some slight changes to some forms like here with the addition of an email address line on the donation page

This is a fun tool called the scrubber. It lets you drag your mouse back and forth and see the difference between the old page and new page like flipping an animation book

Visual regression TESts video

Here is a brief video of that fun scrubber tool

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Finally this website on our server shows both the reports we saw earlier and keeps a log of all the times we ran the test so we can keep track of everything at all times with once again, NO CLICK OF A BUTTON

What I learned this summer/ summar

Special thanks to Radha, Rui, Malavika, and Kenny