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Final Assignment

Q: What is the test automation framework? What is selenium? how does it work? and why do you need it?

Ans: Test automation frameworks are a set of rules and corresponding tools that are used for building test cases. It is designed to help engineering functions work more efficiently. The general rules for automation frameworks include coding standards that you can avoid manually entering, test data handling techniques and benefits, accessible storage for the derived test data results, object repositories, and additional information that might be utilized to run the tests in a suitable manner.[1]. **Selenium** is a free (open-source) automated testing framework used to validate web applications across different browsers and platforms. You can use multiple programming languages like Java, C#, Python etc to create Selenium Test Scripts. Testing done using the Selenium testing tool is usually referred to as Selenium Testing. [2]. **How it Works:** The WebDriver protocol has a local end ('client') which sends the commands (test script) to a browser-specific driver. The driver executes these commands on its browser-instance. So, if the test script calls for execution on Chrome and Firefox, the Chrome Driver will execute the test on Chrome; the Gecko Driver will do the same on Firefox. [2]. Imagine that a manual tester has this scenario: Checking whether the web app's signup page (www.example.com/signup) validates input strings and registers a user successfully in latest versions of Chrome and Firefox, on Windows 7.

Assume that the signup page has these input fields—username, email address, and password. The tester will get a Windows 7 desktop and follow these steps, consecutively, on latest versions of Chrome and Firefox:

1. Enter the URL in the address bar (www.example.com/signup)
2. Enter an invalid string in each input field (email, username, and password)
3. Check whether the input strings were validated against corresponding regexes and any pre-existing values in the database
4. Enter 'valid' strings in each input field; click Sign Up
5. Check whether "Welcome, '{'username'}'"page showed up
6. Check whether the system database created a new user ID for '{'username'}'
7. Mark the test 'passed' if it did, 'failed' if the signup feature broke anywhere during the test.

That's a very basic system test. In the real world, testers are more likely to be checking all user workflows on www.example.com for breakage, on as many OS-browser combinations as needed to meet the benchmarked compatibility standards. Depending on the number of manual testers (and thoroughness of test cases), it may take anywhere between hours to weeks to be sure that the web app is fully functional. Modern developers and product teams don't have that kind of time to allot for testing, but they can't set aside exhaustive testing in a hurry to release either. This is why they super-charge their testing with automation, powered by Selenium. [2]

Q: The most common tools that are used for configuration management are packer and ansible. You need to concisely compare both of them?

Ans: Packer is an open-source tool for creating identical machine images for multiple platforms from a single source configuration. We use Packer to take US Government approved Amazon Machine Images (AMIs) running Red Hat 7 and produce new versions of these AMIs that have all the configuration and software we need to run our application securely in AWS. [3]. **Ansible** is an open-source software provisioning, configuration management, and application-deployment tool enabling infrastructure as code. It runs on many Unix-like systems, and can configure both Unix-like systems as well as Microsoft Windows. [4]. Packer supports multiple "provisioners," which handle the actual server configuration. These can be simple shell scripts, or can be a more robust tool like Ansible. Packer handles the creation of the VM and packaging as an AMI, Ansible handles the configuration of the virtual machine. [3].

References

[1]https://www.browserstack.com/guide/best-test-automation frameworks#:~:text=Test%20automation%20frameworks%20are%20a,engineering%20functions%20work%20more%20efficiently.

[2] https://www.guru99.com/introduction-to-selenium.html

[3]https://madeintandem.com/blog/packer-ansible-terraform-devopsimmutable-servers/#:~:text=Packer%20supports%20multiple%20%E2%80%9Cprovisioners%2C%E2%80%9D,configuration%20of%20the%20virtual%20machine.

[4] https://en.wikipedia.org/wiki/Ansible_(software)