

**Software Verification And Validation**

**Mid-Term Assignment**

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**Question: Choose any Testing tool from the list and write down its**

1. **Pros/Cons**
2. **Functionality**
3. **Supporting Languages**
4. **Supporting Tests**
5. **Write a short faulty code, test using the tool, and show the bugs in the code.**

**Answer: SELENIUM**

1. PROS/CONS

(PROS)

* Selenium is open-source, so anyone can download and start using it.
* It is platform independents means it supports various operating system like Windows, Mac, Linux and Unix.
* It is used for cross-browser testing like Chrome, Firefox, IE and opera browser.
* BDD Framework – Cucumber Jbehave Serenity)
* Its very lightweight, it uses fewer hardware resources as compared to other testing tools like UFT/QTP.
* Available in the form of API.
* Easily integrated with the CI-CD process (Jenkins)
* We can customize the web driver codebase because the source code is shared.
* It Supports Parallel test execution using selenium grid.
* By using selenium, we can perform functional, regression, usability and UAT Testing.

(CONS)

* It requires experienced test automation engineer.
* Test maintenance is difficult, say due to the element waits in applications using AJAX.
* Users need to learn and use different frameworks to standardize the testing process.
* Proper implementation methods, if not followed, will slow down the testing.

1. FUNCTIONALITY

Following is a list of some of Bugzilla’s most significant functionalities.

* Selenium is an open source and portable Web testing Framework.
* Selenium IDE provides a playback and record feature for authoring tests without the need to learn a test scripting language.
* It can be considered as the leading cloud-based testing platform which helps testers to record their actions and export them as a reusable script with a simple-to-understand and easy-to-use interface.
* Selenium supports various operating systems, browsers and programming languages. Following is the list:
* Programming Languages: C#, Java, Python, PHP, Ruby, Perl, and JavaScript
* Operating Systems: Android, iOS, Windows, Linux, Mac, Solaris.
* Browsers: Google Chrome, Mozilla Firefox, Internet Explorer, Edge, Opera, Safari, etc.
* It also supports parallel test execution which reduces time and increases the efficiency of tests.
* Selenium can be integrated with frameworks like Ant and Maven for source code compilation.
* Selenium can also be integrated with testing frameworks like Testing for application testing and generating reports.
* Selenium requires fewer resources as compared to other automation test tools.
* WebDriver API has been indulged in selenium which is one of the most important modifications done to selenium.
* Selenium web driver does not require server installation, test scripts interact directly with the browser.
* Selenium commands are categorized in terms of different classes which make it easier to understand and implement.

1. SUPPORTING LANGUAGES
2. Java
3. Roby
4. JavaScript
5. C#
6. Perl
7. Python
8. PHP
9. SUPPORTING TESTS

* Functionality Testing which includes Smoke Testing, Regression Testing, and Sanity Testing
* Database Testing using drivers like JDBC can also be performed as it is a part of Functional Testing
* Browser Compatibility Testing
* UI Testing
* Cross Browser Testing
* Little bit of Security Testing and security testing can also be performed
* You can automate: WAB, WAP, APP (Mobile App) applications using selenium.

1. TEST USING TOOL

package mypackage;

import org.openqa.selenium.\*;

import org.openqa.selenium.firefox.FirefoxDriver;

The line caused an error because the ‘contains’ keyword is not supported by.cssSelector() in WebDriver

public class myclass {

public static void main (string [] args) {

WebDriver driver = new FirefoxDriver();

string baseUrl = "http://newtours.demount.com";

string var = ""

driver.get(baseUrl);

var = driver.findElement(By.cssSelector("front:contains('passward:')")).getText();