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Subject	Software verification & validation
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- A. Chose any testing tool from the list ,
and write down itsb
- a) pros/ cons
 - b) Functionality
 - c) Supporting Languages
 - d) Supporting Tests
 - e) Write a short (faulty) code. Test using
this tool, and show the bugs in the code

Selenium

a) Pros:-

It is open source tool , anyone can download & use

It support various operating environments

(Windows , Linux , Mac etc....)

It support various programing languages to create and execute Tests

It support all popular web browsers

It support parallel test execution

It uses less hardware resources as compare to other popular tools likeQTP/UFT

a) Cons:-

Since it is open source tool , No reliable technical support
(Official Users Group, Chat room in selenium.org)

It doesn't support Desktop

Application/Windows bases application

No other tools integration for test management

Difficult to use as compare to others tools like QTP/UFT

It is a set of tools

New features may not work properly

Development of selenium is manual and thus more
difficult than the UI of tools like UFT/RFT

b) Functionality:-

selenium can be used to almost everything that you can do manually on a web application including:

1. Navigating through a website /app
2. Checking the site/app flow by performing actions such as clicking buttons, interacting with pop-ups, sending/receiving/storing data, uploading/downloading files
3. Comparing images/graphs (never done it myself. It's probably got more to with java then selenium)
4. Browser compatibility testing(FF is default. You have to download and pass th drivers for other browsers)
5. Parallel testing either by launching multiple classes simultaneously (more than one way to do this) or by using selenium Grid.
6. Making your automated scripts a part of the continuous integration process .

c) Supporting languages:-

The below are the different programming languages that are supported by selenium

- Java
- C++
- Python
- Ruby
- PHP
- Perl
- JavaScript
- R programming
- Objective-C
- Haskell

d) Supporting test:-

Different kind of testing that we can achieved through selenium are :

- **Functional testing**
- **Regression testing**
- **Sanity testing**
- **Load testing**
- **Smoke testing**
- **Responsive testing**
- **Cross browser testing**
- **UI testing (black box)**
- **Integration testing**

some of them discuss as under :

1. functional Test.

Any functionality from simple login to making payment anything that we can automate on web apps. We do UI testing majorly by locating elements from the webpage.

2. Regression Test.

Those areas which we don't want to do manually test regularly , we automate them through selenium and perform regression testing with.

3.Load Test.

Selenium is a very powerful open source testing tool.it can be very useful even for load testing as it allows users to re-use existing functional tests and run them with virtual concurrent users.

e) Code in python to detect bugs :-

- 1) `from selenium.webdriver.common.keys import keys`
- 2) `driver = webdriver.Firefox()`
- 3) `driver.get(http://www.python.org)`
- 4) `assert "python" in driver.title`
- 5) `elem = driver.find_element_by_name("q")`
- 6) `elem.clear()`
- 7) `elem.send_keys("pycon")`
- 8) `elem.send_keys(keys)`
- 9) `assert "No results found , "not in driver.page_source`

BUG 1:- First we need to import web driver module from selenium library.

BUG 2:- At line No.3 you need to code the website URL in quotes.

BUG 3:- At line No.8 you need to use return statement.

BUG 4:- At last we need to use close statement.

Debugged code

1) from selenium import webdriver

2) from selenium.webdriver.common.keys import keys

3) driver =webdriver.Firefox()

4) driver.get(<http://www.python.org>)

5) assert "python" in driver.title

6) elem = driver.find_element_by_name("q")

7) elem.clear()

8) elem.send_keys("pycon")

9) elem.send_keys(keys.RETURN)

10) assert "No results found," not in driver.page_source

11) driver.close()