Selenium Java

Monday, April 5, 2021   1:59 PM

Domain :BA

Programming:
  Knowledge :
    1) Data type
    2) Variables
    3) Arrays
    4) Conditions
    5) Loops
    6) Data Structures
    7) Class
    8) Object
    9) OOPS

Start: 2 PM
Break: 4 PM : 15 mins
End : 6 PM

Theoretical+ Practical + Practice

15 Days

JavaScript
Java
Selenium
POM/POF
Junit
GIT/Maven/Jenkins
Github/BitBucket

Apply on Project

1) Web Applications
    a. Server
    b. Client (Browser)
        i. JavaScript : Logic
        ii. Html : UI
        iii. CSS : Styling
2) Windows Applications
    a. Executables
3) Desktop Applications
    a. Require additional software
    b. Java, .Net…etc
    c. Power Builder
4) Mobile
    a. Web
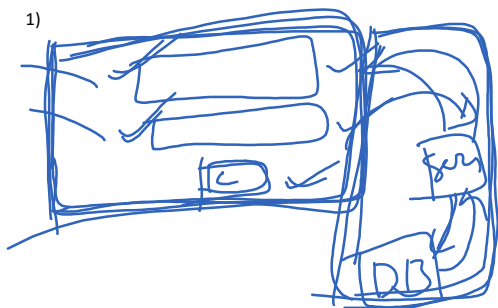   b. Native Applications (More Secured)
    c. Hybrid (Native + web)

V8
SpiderMonkey
WebKit
Chakra

JavaScript

1)

2009 : NodeJS

Install NodeJS to execute JS outside of browser

JavaScript can used in server side using NodeJS

Install NodeJS
Vscode : IDE

1) Register and login to https://github.com/
2) Click on New to Create Repository
3) Give Repository Name
4) Finish
5) Repository Created
6) Click on Creating a new file
7) Give file name as Demo.js
8) Click on Commit new file

https://github.com/qtpsudhakar/SynchronyJS

http://gitpod.io/#https://github.com/qtpsudhakar/SynchronyJS

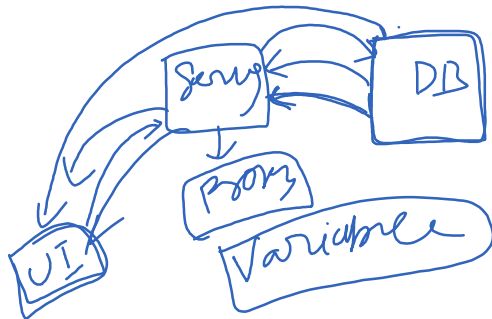http://gitpod.io/#https://github.com/UserName/RepositoryName

Datatypes:

Alpha Numeric Special

Numbers
Strings
Boolean

Variable: Which can stores data in run time

Datatype : Type of data

Variable : stores data :
We can store any type of data in a variable
We can use let to declare a variable
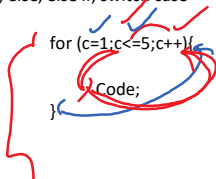Declaration is optional
"use strict" will forces declaring variable

Arrays:

Storing multiple values in a single variable using an index number

Condition: Used to execute block of code based on given condition
If, else, else if, switch case


```
for (c=1;c<=5;c++){
    Code;
}
```

Loop: Used to execute block of code again and again based on a condition or number of times
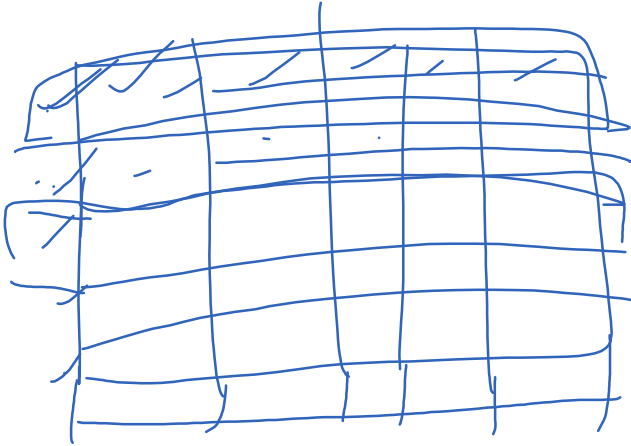
For Loop:
    i=1 : initialization
    i<=10 : condition
    i++ : incrimination

```
for(let i=1;i<=10;i++){
        Log(i)
    }
```

Loops : Execute a block of code again and again base on condition or number of times

Functions: Reuse a block of code

Eclipse
IntelliJ

Java Development

Visual Studio : .net Development

Functions

1) Creating and reusing functions
2) Creating Parameters
3) Returning value
4) Returning multiple value
5) Passing multiple values

Functions: A reusable code block
Named Functions
Anonymous Functions : Assign as value to a variable, pass to parameter while calling function
        Call back
Parameters: normal, rest parameter (accepts any number of values)

Arrow Functions: short form for anonymous function (lambda expression)

We can return values using return keyword

How many return statements can be there in a function?

```
function isOdd(n){

    if(n%2==1){
            return true;
    }else{
            return false;
    }
}
```

Functional Programming

Write reusable code in functions
Call them where ever you want for creating test flow

Class
Object

Encapsulation
inheritance
Polymorphism

Developer develops
Developer tests

Improving quality

1995 : winrunner
Xrunner
Mercury interactive
QTP : 2002
6.5
2008 : res

2007 : iphone
2009 : android

Selenium 2006
WebDriver 2007

Selenium + WebDriver 2010
2011 : smart phones

Selenium for WebAutomation
World moves towards web

2014 : selenium crossed QTP

2018 : default for every tester

Java

Typed language
int x=10;

Datatype variable = value;

Data types and Variables

int x = 10;

Primitive Data types

$$\left(2^7\right) \quad 2^7 - 1$$

int x = 10;

Primitive Data types
byte : 8bit :
short: 16 bit
int : 32 bit
long : 64 bit

Reference Types

-2^7 $2^7 - 1$

-128 127

15

-2^{15} $-2^{15} - 1$

Class

Static
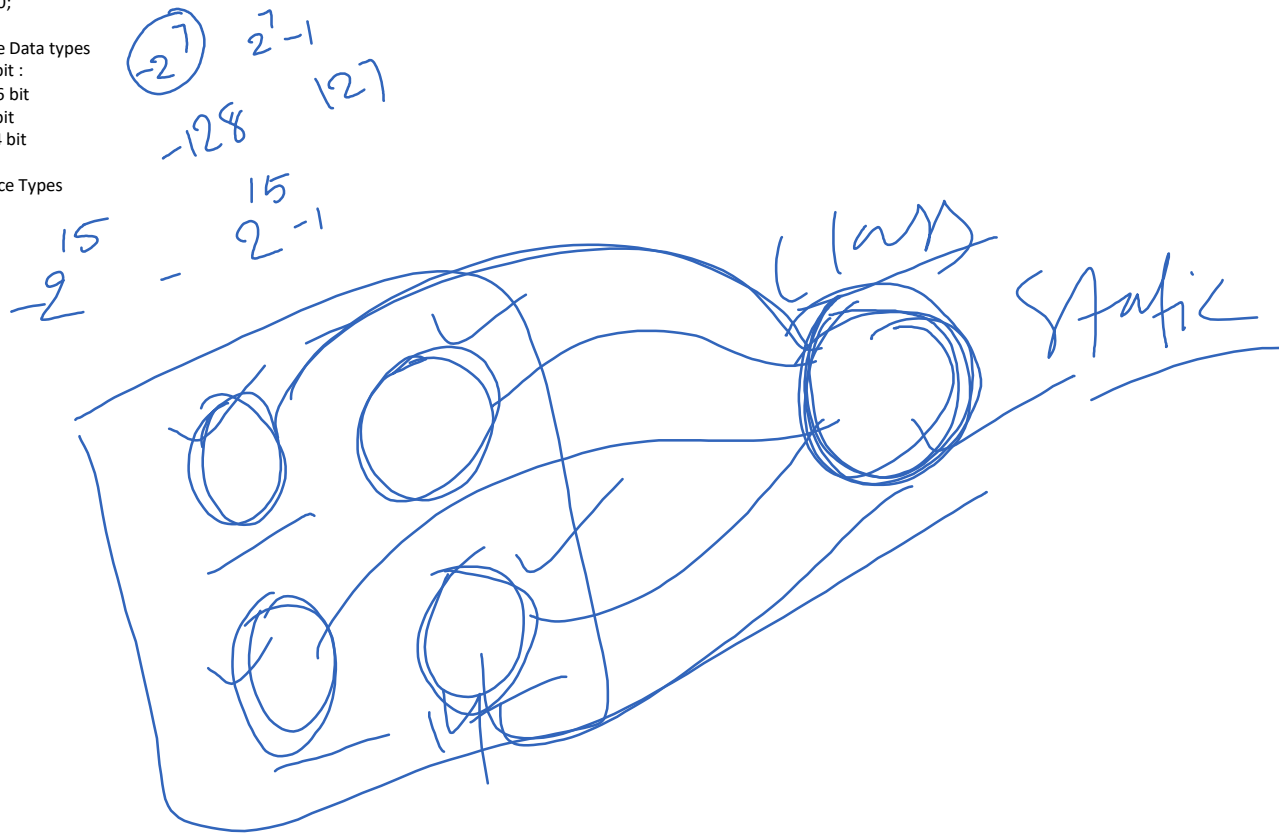
Advantage of List over an array

Array is fixed length
Array can have primitive

List is dynamic
List can have Reference

Dynamic Data: Data generated in run time

Set : It can store only unique data
Map : It can store data as key and value pair
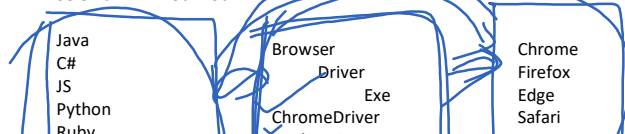
Configure Selenium:

1) Goto https://github.com/qtpsudhakar/SeleniumJavaTraining
2) Download selenium-java-3.141.59.zip
3) Download chromedriver_win32 (2).zip
4) Create a folder in any drive
5) Copy these 2 files to that folder
6) Extract these files
7) One will have chromedriver.exe file
8) Selenium-Java-3.141.59 will have jar file and lib folder
9) In IntelliJ IDE -> File -> Project Structure-> Modules -> Dependencies
10) Click on + button and select jars
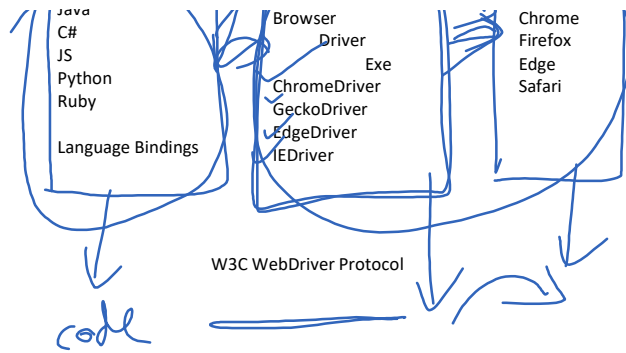11) Add all jar from that extracted selenium folder

Selenium 1 : Selenium RC : Remote Control
Selenium 2 : Selenium RC + WebDriver : Selenium WebDriver
Selenium 3 : Selenium 2 - Selenium 1
Selenium 4 : W3c WebDriver

Java
C#
JS
Python
Ruby

Browser
Driver
Exe

ChromeDriver

Chrome
Firefox
Edge
Safari

Java
C#
JS
Python
Ruby

Browser
Driver
Exe
ChromeDriver
GeckoDriver
EdgeDriver
IEDriver

Chrome
Firefox
Edge
Safari

Language Bindings

W3C WebDriver Protocol

code

Name
ID

HTML + CSS + JS

Textbox	Input type="text"
Checkbox	Input type="checkbox"
Radio	Input type="radio" Radio buttons must groups with a name
Links	A href
Image	img
Lists/Dropdown	Select option
Para/header/display text	p, h1, span, li, label
File input	Input type="file"
Forms	We can submit
Button	Input type="button" Input type="submit" button
Calendar	Created using table or div
Table	Table, tr, td, th, tbody
Frame	iframe
Alerts	Created by javascript

Style attribute: to style a single element
Style tag:
1) Access all elements of specific type and assign a style
2) Store style with class names and assign that style to any element

Jquery
Angular
React
ExtJS
VueJS
……

Attributes:
1) Id
2) Name
3) Value
4) Type
5) Style
6) Class
7) Innertext

Enter Text	sendkeys
Click	click
Select	select
Mouse Actions	Actions class

Locators:

Id	<input type="text" id="fname" />	unique
Name	<input type="text" name="fname" />	Unique For radio buttons it's not unique
Class Name	<input type="text" class="demo" />	May not create uniqueness Use it with combination
Tagname	Html Tagname of that element Input, a, table, tr, td…etc	For finding elements of same type Find how many links
Link Text	 selenium Inner text of a link	For find links

Partial link text	Partial innertext of a link Ex: Sele, nium, leni	For find links
Css selector	The css path of an element	To find unique element It is faster than xpath
Xpath	The xpath of an element	To unique element It has more navigation features than css

CSS, Xpath : We can use any attribute of an element

CSS Selector:

Absolute Path:

html>body>table>tbody>tr:nth-of-type(1)>td:nth-of-type(2)>input
> : refers first level child of current element

Relative path:
input[id='fname']
Tagname[attribute='value']

Tagname#idvalue
Input#fname

Tagname.classname

Xpath

/ : refers first level child of current element
// : refers any level

html/body/table/tbody/tr[1]/td[2]/input

Relative Xpath: //tagname[@attribute='value']
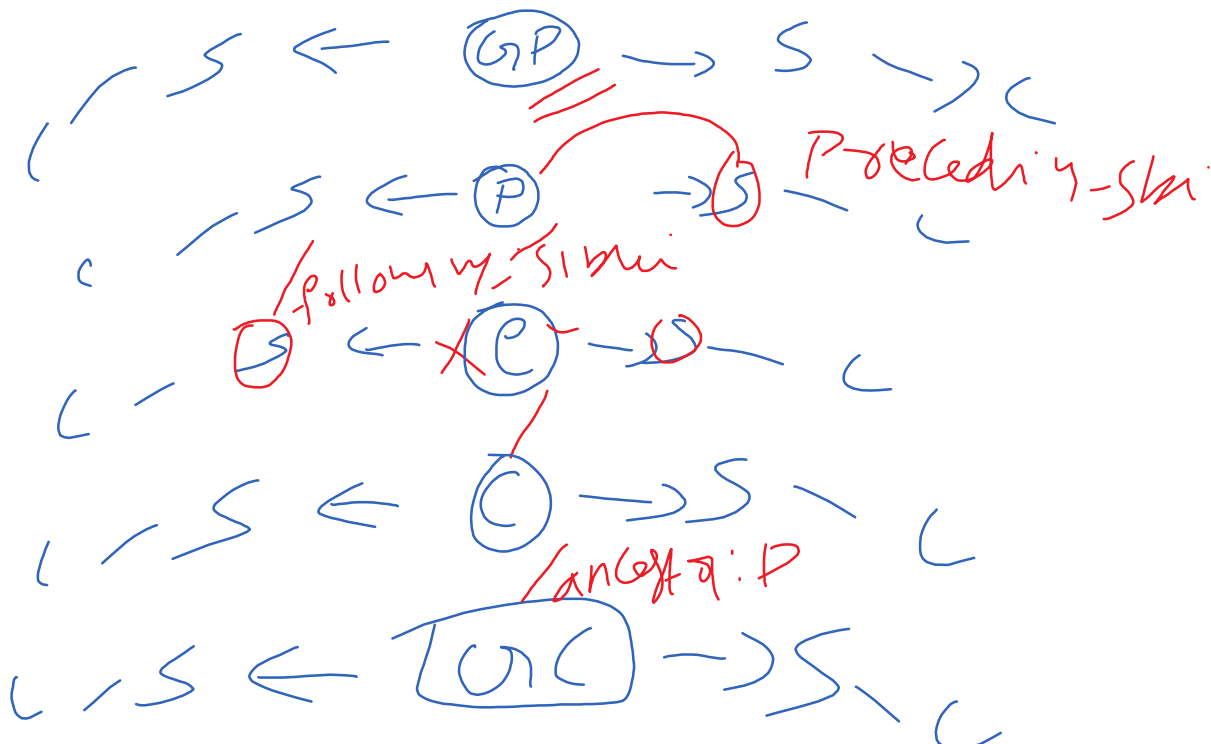
//tagname[function()='value']

//a[text()='value']
//a[text()='selenium']

//tagname[normalize-space()='text']

Try CSS
If not able to create uniqueness
Go for XPATH

1) Parent to Child
    a. / : first level child
    b. // : any level child
2) Child to parent
    a. /..
    b. /ancestor::tagname[attributes]
3) First to last sibling
    a. /following-sibling::tagname[attributes]
4) Last to first
        /preceding-sibling::tagname[attributes]

//td[text()='LastName:']/following-sibling::td/input
//td[text()='LastName:']/..//input
//tr[contains(normalize-space(),'LastName:')]//input

1) Write xpath for related element
2) Write navigation from related element to common parent/common related element
3) Write navigation from common parent to actual element

//tagname[contains(@attribute,'value')]
//tagname[contains(function(),'value')]

1) Ways to write relative xpath
    a. Using self attributes
    b. Using parent/grand parent
    c. Using child /descendants
    d. Using siblings
    e. Using index
//a[text()='0016']/../preceding-sibling::td/input
//a[text()='0016']/../..//input
//tr[contains(normalize-space(),'0016')]//input

Add Employee
Delete Employee

//img[@class='ui-datepicker-trigger']

//div[contains(@class,'srvceNO') and contains(normalize-space(),'1067')]/../../following-sibling::div[contains(@class,'col5')]/input
//div[@class='srvceNO' and normalize-space()='7143']/../..//input[@value='Select Seats']
//div[@class='srvceNO' and not(ancestor::div[@style='display: none;'])]

Mouse Actions : Actions class

Click	click
Hover	movetoelement
Scroll	movetoelement
Drag and Drop	draganddrop
Double click	doubleclick
Right Click	contextclick