Synchronization- It is a process of Matching Automation script , Execution Speed & Application Loading speed

-WAIT-

-Implicitly wait()

-Explicitly wait()

-Thread.sleep()

-Fluent wait

-Pageload timeout

Q. what is synchronisation

Q. what is implicit wait

Q. what is explicit wait

Q. difference between implicit

-Automation Script Speed Is always faster than Application loading speed.

-Application loading speed is completely depends on Internet Speed.

-To match both Automation script Execution speed and application loading speed we have to use the concepts of Wait.

-As we cannot control Application loading speed we use WAIT concepts to match the Automation script Execution speed to Application loaidng speed.

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1] Implicit wait-

Once we apply Implicit wait it is going to be applied for the whole class.

-c.manage().timeouts().implicitlyWait(Duration.ofSeconds(Duration));(current usage after selenium 4)

-c.manage().timeouts().implicitlyWait(15,TimeUnit.SECONDS);(Old Method ..selenium 3)

- Its is used for find Element & Find Elements

-Exception -

-NoSuchElementException (if application loading speed and Automation Script Execution speed are not matching)

-EmptyListException

-It will check if the desired element is present on the webpage or not.

-the time is given in seconds

-the moment it sees the desired element it will click on it ASAP.

-It is also called Intelligent Wait bcause it checks for the desired elemnt every 500ms.

-the waitnig is called time interval,wait frequency,foli period.

-if we want to change the time interval we have to go with fluent wait.

-It is only applied for findElement or findElements and wont affect other code

-It saves time by using cycles

-Its works on condition

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2]Explicit wait-

-It is compulsary that we use seconds not milli not mintues

-we write 2 lines of code for explicit wait

-we get TimeOutException

-It is used when we are not using findElement or findElements

-ExplicitWait works on Conditions/Predicate

-If conditon is satisfied then only it will leave the control

-if the condition is not satisfied it will give TimeOutException

-works in cycles of waiting time/poll period of 500ms

-it is also known as intelligent wait.

Step1

-we need to create the object of WebDriverWait class

-WebDriverWait w = new WebDriverWait(c,Duration.ofSeconds(10));

We have to provide some parameters- 1)time

2)Object refernece

Step2

-we have to call a method called until().(We create object of WebDriverWait class for the until method )

w.until(ExpectedConditions.titleIs("expectedtitle/vtiger")) //this isss where explict wait applies

Step3

-we have to pass the predicate funcitons

Used for validation of getCurrentUrl() and getTitle().

Example-WebDriverWait waits=new WebDriverWait(c,Duration.ofSeconds(10));

waits.until(ExpectedConditions.urlToBe(expected));

Methods In ExpectedCondition

titleIs

titleContains

urlToBe

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Thread.sleep()

-It is a BLIND WAIT and doesnot check the if an element is present or not.

-the time is given in milliseconds.

-It will wait till the time given.

-It is applied only for a single line.

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ENUMUATION(ENUM)

we are using 3 types of ENUM(it is a java component which holds groups of constants(fixed or cannot be changed))

TimeUnit(Not used since selenium 4. We could apply 7 types of waits before selenium 4)

Duration(ofSecconds,ofMilliSeconds)

Keys (delete,backspace,all the buttons on the keyboard)

Duration is an ENUM in Selenium 4

TimeUnit was the ENUM used in Selenium 3

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Fluent wait- just to change the poling period.. 500milliseconds to 400miliseconds with the help of Fluent wait.

here the user has complete control of the parameters and polling period/Wait frequency/Time Interval.

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PageLoadTimeOut()- Only applied for two methods - 1)get()

2)navigate.to()

By default both the methods have set infinite no. of time delay( wait )

To cutDown the delay we have to use the concept called pageLoadTimeout().