**Java Synchronization (Implicit Wait and Explicit Wait):**

When you request a page to load some of the elements of the page might take some time to load because of the ajax calls or they may have to be loaded from other servers. So, some of the elements load slower than others. In these cases, we use implicit wait.

Implicit wait is global. It applies to all elements.

Once the page is loaded we will do some operations which involve calling some services through ajax and these will take some time to load. For example, in amazon shopping cart, when we add an item to shopping cart the number of items in cart will increase. This is done by ajax calls and the whole page won’t be refreshed. Only the number in the cart will change.

When the servers are slow or because of any other issues this may delay appearing of the new elements and these will cause problem to the script. We have to use explicit wait for these. Explicit wait is for a particular element. We will say the script to wait until some expected conditions are met.

For example – an element to be clickable or an element to be visible etc. The explicit wait keeps on checking until the expected conditions are met for a particular time and if these expected conditions are met it will proceed further otherwise it will throw an error.

**package** Selenium;

**import** java.util.concurrent.TimeUnit;

**import** org.openqa.selenium.By;

**import** org.openqa.selenium.WebDriver;

**import** org.openqa.selenium.firefox.FirefoxDriver;

**import** org.openqa.selenium.support.ui.ExpectedConditions;

**import** org.openqa.selenium.support.ui.WebDriverWait;

**public** **class** Synchronization {

**public** **static** **void** main(String[] args) {

System.*setProperty*("webdriver.gecko.driver", "C:\\BrowserDrivers\\geckodriver.exe");

WebDriver driver = **new** FirefoxDriver();

driver.get("file:///D:/Selenium%20Course/Java/index.html");

//Implicit Wait

driver.manage().timeouts().implicitlyWait(10, TimeUnit.***SECONDS***);

driver.findElement(By.*id*("makevisible")).click();

//Explicit wait

WebDriverWait d=**new** WebDriverWait(driver,20);

d.until(ExpectedConditions.*elementToBeClickable*(By.*id*("delayedbutton")));

driver.findElement(By.*id*("delayedbutton")).click();

driver.findElement(By.*id*("dispdynbutton")).click();

d.until(ExpectedConditions.*elementToBeClickable*(By.*id*("dynbutton")));

driver.findElement(By.*id*("dynbutton")).click();

driver.quit();

}

}