Explicit and Implicit Waits

Waiting is having the automated task execution elapse a certain amount of time before continuing with the next step. You should choose to use Explicit Waits or Implicit Waits.

WARNING: Do not mix implicit and explicit waits. Doing so can cause unpredictable wait times. For example, setting an implicit wait of 10 seconds and an explicit wait of 15 seconds, could cause a timeout to occur after 20 seconds.

Explicit Waits

- An explicit wait is code you define to wait for a certain condition to occur before proceeding further in the code.

- The worst case of this is Thread.sleep(), which sets the condition to an exact time period to wait.

- There are some convenience methods provided that help you write code that will wait only as long as required.

- WebDriverWait in combination with ExpectedCondition is one way this can be accomplished.

Types of Explicit Waits:

- WebDriverWait

- FluentWait

WebDriverWait Example

```
package WebDriverEx;

import org.openqa.selenium.By;
import org.openqa.selenium.firefox.FirefoxDriver;
import org.openqa.selenium.support.ui.ExpectedConditions;
import org.openqa.selenium.support.ui.WebDriverWait;

public class Explicitwait {
      public static void main(String[] args)
      {
            FirefoxDriver Driver=new FirefoxDriver();
            WebDriverWait wait=new WebDriverWait(Driver, 60);
            //-------------------------------------------------
            //wait for title
            wait.until(ExpectedConditions.titleIs("title"));
            //wait for partial title
            wait.until(ExpectedConditions.titleContains("title"));
            //wait for element present
            wait.until(ExpectedConditions.presenceOfElementLocated(By.name("name")));
            //wait for alert
            wait.until(ExpectedConditions.alertIsPresent());
            //wait until element became enabled
            wait.until(ExpectedConditions.elementToBeClickable(By.id("id")));
            //wait for text present

wait.until(ExpectedConditions.textToBePresentInElementLocated(By.xpath("xpath"), "text"));
            //wait for property
            wait.until(ExpectedConditions.attributeToBe(By.name("name"), "attribute",
"value"));
            //wait for frame and switch to it
```

```
            wait.until(ExpectedConditions.frameToBeAvailableAndSwitchToIt("locator"));

      }
}
```

Implicit Waits

An implicit wait is to tell WebDriver to poll the DOM for a certain amount of time when trying to find an element or elements if they are not immediately available. The default setting is 0. Once set, the implicit wait is set for the life of the WebDriver object instance.

```java
import java.util.concurrent.TimeUnit;
import org.openqa.selenium.firefox.FirefoxDriver;

public class Explicitwait {
      public static void main(String[] args)
      {
      ChromeDriver Driver=new ChromeDriver ();
            Driver.manage().timeouts().implicitlyWait(duration.ofseconds(10));
            Driver.manage().timeouts().pageLoadTimeout(duration.ofseconds(10));

      }
}
```