In Selenium Java, there are three primary types of waits that are commonly used to handle synchronization between the script and the web page elements:

**1. Implicit Wait**

* **Definition**: Implicit wait is applied globally and tells the WebDriver to poll the DOM for a certain amount of time when trying to find an element, before throwing a NoSuchElementException.
* **How it works**: Once set, the implicit wait is applied for the lifetime of the WebDriver instance.

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

* **Use case**: Useful when the elements are available after a reasonable delay, but you do not want to wait for each element explicitly.

**2. Explicit Wait**

* **Definition**: Explicit wait allows you to define conditions for specific elements and wait until those conditions are met. This type of wait is more precise compared to implicit wait.
* **How it works**: You can wait for a certain condition to occur (e.g., element to be visible, clickable, etc.) before proceeding with the next step.

WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(10));

WebElement element = wait.until(ExpectedConditions.visibilityOfElementLocated(By.id("exampleId")));

* **Use case**: When waiting for a specific condition on a specific element (e.g., the element becomes clickable or visible).

**3. Fluent Wait**

* **Definition**: Fluent wait is a more advanced form of wait that allows you to define not only the maximum wait time but also the polling frequency and exceptions to ignore while waiting.
* **How it works**: It polls the DOM at regular intervals to check for a condition to be met.

Wait<WebDriver> fluentWait = new FluentWait<WebDriver>(driver)

.withTimeout(Duration.ofSeconds(30))

.pollingEvery(Duration.ofSeconds(5))

.ignoring(NoSuchElementException.class);

WebElement element = fluentWait.until(ExpectedConditions.visibilityOfElementLocated(By.id("exampleId")));

* **Use case**: Useful when you need to frequently poll for an element's presence or state, with a custom polling interval.

Each of these waits serves different use cases depending on how your web elements behave and when they are rendered.