

Selenium Functions & Assertions - Cheat Sheet

1. Selenium WebDriver Functions

WebDriver methods

- `driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(10));`
- `driver.manage().window().maximize();`
- `driver.manage().deleteAllCookies();`

Browser & Navigation

- `driver.get("https://example.com");` - Opens URL
- `driver.navigate().to("https://example.com");` - Alternative to `get()`
- `driver.navigate().back();` - Go back
- `driver.navigate().forward();` - Go forward
- `driver.navigate().refresh();` - Refresh page
- `driver.quit();` - Close all windows & end session
- `driver.close();` - Close current window

Finding Elements

- `driver.findElement(By.id("idValue"));`
- `driver.findElement(By.name("nameValue"));`
- `driver.findElement(By.className("className"));`
- `driver.findElement(By.tagName("input"));`
- `driver.findElement(By.linkText("Full Link Text"));`
- `driver.findElement(By.partialLinkText("Partial Link"));`
- `driver.findElement(By.cssSelector("css"));`
- `driver.findElement(By.xpath("//tag[@attr='value']"));`
- `driver.findElements(By.tagName("a"));` // Returns List<WebElement>

WebElement Functions

- `element.click();` - Click element
- `element.sendKeys("text");` - Type text
- `element.clear();` - Clear input field
- `element.getText();` - Get visible text
- `element.getAttribute("value");` - Get attribute value
- `element.getCssValue("color");` - Get CSS property
- `element.isDisplayed();` - true if visible
- `element.isEnabled();` - true if enabled
- `element.isSelected();` - true if checkbox/radio selected

Waits

- `Thread.sleep(milliseconds)` - Hard wait.
- `WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(10));`
- `wait.until(ExpectedConditions.visibilityOfElementLocated(By locator));`
- `FluentWait` - Wait with polling interval and ignoring exceptions.

Frames & Windows

- `Select dropdown = new Select(element);`
- `dropdown.selectByVisibleText("Option");`
- `dropdown.selectByValue("optionValue");`
- `dropdown.selectByIndex(2);`
- `dropdown.getFirstSelectedOption();`
- `dropdown.getOptions();` // List of all options

Frames & Windows

- `driver.switchTo().frame(0);` - By index
- `driver.switchTo().frame("frameName");` - By name/id
- `driver.switchTo().frame(element);` - By WebElement
- `driver.switchTo().defaultContent();` - Back to main page
- `driver.switchTo().parentFrame();` - Go to parent frame

- `String mainWin = driver.getWindowHandle();` - Current window ID
- `Set<String> allWins = driver.getWindowHandles();` - All open windows
- `driver.switchTo().window(windowId);` - Switch to window.

Mouse & Keyboard Actions (Actions Class)

- `Actions actions = new Actions(driver);`
- `actions.moveToElement(element).perform();` // Hover
- `actions.clickAndHold(element).moveToElement(el2).release().perform();` // Drag-drop
- `actions.doubleClick(element).perform();`
- `actions.contextClick(element).perform();` // Right-click
- `actions.keyDown(Keys.CONTROL).click(element).keyUp(Keys.CONTROL).perform();`

Alerts & Popups

- `Alert alert = driver.switchTo().alert();`
- `alert.accept();` // OK
- `alert.dismiss();` // Cancel
- `alert.getText();` // Alert text
- `alert.sendKeys("text");` // Send text to prompt alert

Actions Class

- `Actions actions = new Actions(driver);`
- `actions.moveToElement(element).perform();`
- `actions.doubleClick(element).perform();`
- `actions.contextClick(element).perform();`
- `actions.dragAndDrop(source, target).perform();`

JavaScript Executor

- `JavascriptExecutor js = (JavascriptExecutor) driver;`
- `js.executeScript('window.scrollTo(0,500)');`
- `js.executeScript('arguments[0].click();', element);`

2. Assertions in Selenium with TestNG

TestNG Hard Assertions

```
import org.testng.Assert;
```

- `Assert.assertTrue(condition);` // Pass if true
- `Assert.assertFalse(condition);` // Pass if false
- `Assert.assertEquals(actual, expected);` // Compare values
- `Assert.assertEquals(actual, expected, "Message");` // With custom message
- `Assert.assertNotEquals(actual, expected);`
- `Assert.assertNull(object);`
- `Assert.assertNotNull(object);`

TestNG Hard Assertions

```
import org.testng.asserts.SoftAssert;
```

- `SoftAssert soft = new SoftAssert();`
- `soft.assertTrue(false, "Condition failed");`
- `soft.assertEquals("A", "B", "Strings not matching");`
- `soft.assertAll();` // MUST call to collect all results

Rest Assured Assertions (Java)

1. Status Code Assertions

```
given()
    .when()
        .get("https://api.example.com/users")
    .then()
        .statusCode(200);
```

2. Status Line Assertions

```
given()
    .when()
        .get("https://api.example.com/users")
    .then()
        .statusLine("HTTP/1.1 200 OK");
```

3. Header Assertions

```
given()
    .when()
        .get("https://api.example.com/users")
    .then()
        .header("Content-Type", equalTo("application/json; charset=utf-8"));
```

4. Body Content Assertions (Exact Match)

```
given()
    .when()
        .get("https://api.example.com/user/1")
```

```
.then()  
    .body("name", equalTo("John Doe"));
```

5. Body Content Assertions (Partial Match)

```
given()  
    .when()  
        .get("https://api.example.com/users")  
    .then()  
        .body("name", containsString("John"));
```

6. Multiple Assertions in One Go

```
given()  
    .when()  
        .get("https://api.example.com/user/1")  
    .then()  
        .statusCode(200)  
        .body("name", equalTo("John Doe"))  
        .body("email", endsWith("@example.com"));
```

7. List Assertions

```
given()  
    .when()  
        .get("https://api.example.com/users")  
    .then()  
        .body("name", hasItems("John", "Jane"));
```

8. Size Assertions

```
given()  
    .when()  
        .get("https://api.example.com/users")  
    .then()  
        .body("size()", equalTo(5));
```

9. JSON Path Assertions

```
String name = given()  
    .when()  
        .get("https://api.example.com/user/1")  
    .then()  
        .extract()  
        .path("name");
```

```
assertEquals(name, "John Doe");
```

10. Combining with TestNG/JUnit Assertions

```
Response response = given()  
    .when()  
        .get("https://api.example.com/user/1");
```

```
Assert.assertEquals(response.getStatusCode(), 200);  
Assert.assertTrue(response.getBody().asString().contains("John Doe"));
```