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.scrollBy(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);
```

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2. Status Line Assertions

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

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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");
```

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