

Hands-On Selenium & API Automation

By Rupendra Kumar Ragala

Selenium Automation Questions

1. How to handle a dropdown in Selenium?

```
import org.openqa.selenium.support.ui.Select;

WebElement dropdown = driver.findElement(By.id("dropdownId"));
Select select = new Select(dropdown);
select.selectByVisibleText("Option Text");
```

Explanation: Use the Select class to handle dropdowns. `selectByVisibleText` selects the option based on visible text.

2. How to handle multiple windows in Selenium?

```
String mainWindow = driver.getWindowHandle();
Set<String> allWindows = driver.getWindowHandles();

for (String window : allWindows) {
    if (!mainWindow.equals(window)) {
        driver.switchTo().window(window);
        System.out.println("Switched to new window.");
        driver.close();
    }
}
driver.switchTo().window(mainWindow);
```

Explanation: This switches to a new window, performs actions, and then returns to the main window.

3. Write a code to capture a screenshot in Selenium.

```
File srcFile = ((TakesScreenshot)driver).getScreenshotAs(OutputType.FILE);
FileUtils.copyFile(srcFile, new File("path/to/save/screenshot.png"));
```

Explanation: The TakesScreenshot interface allows capturing screenshots and saving them to the specified path.

4. How to handle alerts in Selenium?

```
Alert alert = driver.switchTo().alert();
String alertText = alert.getText();
alert.accept(); // To accept alert
```

Explanation: The `switchTo().alert()` handles JavaScript alerts, and `accept()` closes it.

5. How do you perform drag and drop in Selenium?

```
Actions actions = new Actions(driver);
WebElement source = driver.findElement(By.id("sourceId"));
WebElement target = driver.findElement(By.id("targetId"));
actions.dragAndDrop(source, target).perform();
```

Explanation: The `Actions` class handles complex actions like drag-and-drop, mouse movements, etc.

6. Write code to handle frames in Selenium.

```
driver.switchTo().frame("frameName");
// Perform actions inside frame
driver.switchTo().defaultContent();
```

Explanation: This switches to a frame by name, performs actions, and then returns to the main content.

7. How to handle cookies in Selenium?

```
Cookie cookie = new Cookie("session_id", "123456");
driver.manage().addCookie(cookie);
driver.manage().getCookieNamed("session_id");
```

Explanation: Adds and retrieves cookies from the browser.

8. How do you handle exceptions in Selenium?

```
try {  
    driver.findElement(By.id("nonExistingElement"));  
} catch (NoSuchElementException e) {  
    System.out.println("Element not found!");  
}
```

Explanation: Uses try-catch to handle NoSuchElementException when an element isn't found.

9. How to verify if an element is displayed?

```
WebElement element = driver.findElement(By.id("elementId"));  
boolean isDisplayed = element.isDisplayed();
```

Explanation: Checks if the element is displayed on the page using isDisplayed().

10. How to execute JavaScript in Selenium?

```
JavascriptExecutor js = (JavascriptExecutor) driver;  
js.executeScript("window.scrollTo(0,1000)");
```

Explanation: Executes JavaScript to scroll the page down by 1000 pixels.

11. How to check for broken links on a webpage?

```
List<WebElement> links = driver.findElements(By.tagName("a"));  
for (WebElement link : links) {  
    String url = link.getAttribute("href");  
    HttpURLConnection conn = (HttpURLConnection) new URL(url).openConnection();  
    conn.connect();  
    if (conn.getResponseCode() != 200) {  
        System.out.println(url + " is broken.");  
    }  
}
```

Explanation: Loops through all anchor tags, checks if links are working using HttpURLConnection.

12. How do you wait for an element to be visible in Selenium?

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

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

13. How to perform mouse hover action in Selenium?

```
Actions actions = new Actions(driver);  
WebElement element = driver.findElement(By.id("hoverElementId"));  
actions.moveToElement(element).perform();
```

Explanation: The Actions class helps simulate a mouse hover over a specific element.

14. How to handle a file upload in Selenium?

```
WebElement uploadElement = driver.findElement(By.id("uploadField"));  
uploadElement.sendKeys("path/to/file.png");
```

Explanation: Use sendKeys to send the file path directly to the file input element for uploading.

15. How to scroll to the bottom of the page in Selenium?

```
JavascriptExecutor js = (JavascriptExecutor) driver;  
js.executeScript("window.scrollTo(0, document.body.scrollHeight)");
```

Explanation: This JavaScript command scrolls the page to the bottom, useful when loading more elements dynamically.

16. How do you handle right-click (context click) in Selenium?

```
Actions actions = new Actions(driver);
WebElement element = driver.findElement(By.id("elementId"));
actions.contextClick(element).perform();
```

Explanation: The Actions class's contextClick method performs a right-click action on an element.

17. How to capture and print all links on a webpage?

```
List<WebElement> links = driver.findElements(By.tagName("a"));
for (WebElement link : links) {
    System.out.println(link.getAttribute("href"));
}
```

Explanation: This finds all anchor tags and prints their href attributes, which contain the URLs.

API Automation Questions

1. How to send a GET request and validate status code using RestAssured?

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

Explanation: RestAssured framework allows sending requests and validating responses in a single line.

2. Write a POST request code to create a new user in RestAssured.

```
JSONObject requestParams = new JSONObject();
requestParams.put("name", "John");
requestParams.put("job", "Engineer");

given().body(requestParams.toJSONString())
    .when().post("https://reqres.in/api/users")
    .then().statusCode(201);
```

Explanation: The code sends a JSON body with user data and checks if the response has a 201 status code.

3. How to validate a JSON response field in RestAssured?

```
given()
    .when().get("https://reqres.in/api/users/2")
    .then().assertThat().body("data.email", equalTo("janet.weaver@reqres.in"));
```

Explanation: Validates the email field in the JSON response using a JSON path.

4. Write a code to add headers in a RestAssured request.

```
given()
    .header("Content-Type", "application/json")
    .header("Authorization", "Bearer token")
    .when().get("https://api.example.com/resource");
```

Explanation: Adds Content-Type and Authorization headers to the request.

5. How to validate response time in an API request?

```
given()
    .when().get("https://api.example.com/resource")
    .then().time(lessThan(2000L));
```

Explanation: Checks if the response time is less than 2 seconds.

6. Write code to verify if a response contains a particular JSON field.

```
given()
    .when().get("https://api.example.com/resource")
    .then().body("$", hasKey("data"));
```

Explanation: This checks if the response JSON has a "data" key.

7. How to send a PUT request using RestAssured?

```
JSONObject requestParams = new JSONObject();
requestParams.put("name", "Jane");
requestParams.put("job", "Manager");

given().body(requestParams.toJSONString())
    .when().put("https://reqres.in/api/users/2")
    .then().statusCode(200);
```

Explanation: Sends a PUT request with JSON data to update a user's information.

8. How to handle pagination in an API request?

```
int page = 1;
Response response;

do {
    response = given().param("page", page).when().get("https://reqres.in/api/users")
    List<String> users = response.jsonPath().getList("data.id");
    System.out.println("Page " + page + ": " + users);
    page++;
} while (response.jsonPath().getBoolean("has_more"));
```

Explanation: Continues requesting pages until there are no more records, printing each page's users.

9. How to verify a JSON array size in a response?

```
given()
    .when().get("https://reqres.in/api/users")
    .then().body("data", hasSize(6));
```

Explanation: This checks if the "data" JSON array in the response contains exactly six items.

10. Write a code to extract specific data from a JSON response in RestAssured.

```
Response response = given().get("https://reqres.in/api/users/2");  
String email = response.jsonPath().getString("data.email");  
System.out.println("User email: " + email);
```

Explanation: The `jsonPath()` method allows extracting specific data fields from a JSON response.

11. How to send a DELETE request using RestAssured?

```
given()  
    .when().delete("https://reqres.in/api/users/2")  
    .then().statusCode(204);
```

Explanation: This sends a DELETE request to remove a user resource, expecting a 204 No Content status.

12. How to validate a specific header in an API response?

```
given()  
    .when().get("https://reqres.in/api/users/2")  
    .then().header("Content-Type", equalTo("application/json; charset=utf-8"));
```

Explanation: This checks if the Content-Type header in the response matches the expected value.

13. How to handle query parameters in RestAssured?

```
given()
    .queryParams("page", 2)
    .when().get("https://reqres.in/api/users")
    .then().statusCode(200);
```

Explanation: The queryParams method allows passing query parameters (like page=2) in the request URL.

14. How to handle basic authentication in an API request using RestAssured?

```
given()
    .auth().basic("username", "password")
    .when().get("https://api.example.com/protected-resource")
    .then().statusCode(200);
```

Explanation: This handles basic authentication by providing a username and password.

15. How to send a PATCH request to update partial data in RestAssured?

```
JSONObject requestParams = new JSONObject();
requestParams.put("job", "Developer");

given().body(requestParams.toJSONString())
    .when().patch("https://reqres.in/api/users/2")
    .then().statusCode(200);
```

Explanation: PATCH requests update only specific fields in the existing resource without overwriting the entire record.

16. How to add multiple query parameters in a single request?

```
given()
  .queryParams("param1", "value1")
  .queryParams("param2", "value2")
  .when().get("https://api.example.com/resource")
  .then().statusCode(200);
```

Explanation: Multiple query parameters can be added using repeated `queryParams` calls.

17. How to check if a response JSON path returns a non-null value?

```
given()
  .when().get("https://reqres.in/api/users/2")
  .then().body("data.email", notNullValue());
```

Explanation: The `notNullValue()` matcher ensures that the `data.email` path is not null.

18. How to send form parameters in RestAssured?

```
given()
  .formParam("username", "john")
  .formParam("password", "password123")
  .when().post("https://api.example.com/login")
  .then().statusCode(200);
```

Explanation: Form parameters are often used in requests where data is sent in `application/x-www-form-urlencoded` format.

Thank You