

Automation of Airbnb Search Flow

Building a framework using Selenium WebDriver to automate property search functionality



Key Takeaways

Real-World Experience

Successfully automated a live production website with complex dynamic components

Technical Depth

Applied advanced XPath strategies and dynamic element handling in practical scenarios

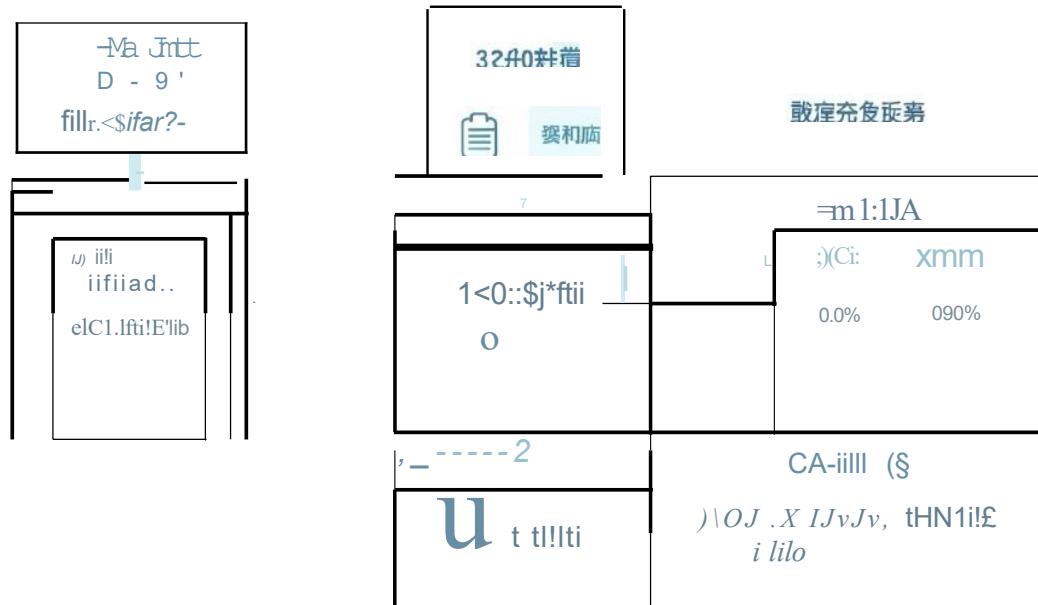
Framework Skills

Implemented BDD principles with Cucumber integration and TestNG execution

Implementation Highlights

Dynamic XPath Strategy

Created dynamic locators using aria-label attributes to identify calendar dates, enabling flexible date selection independent of fixed positions. This approach handles variations in calendar layout and month configurations.



Month Navigation Logic

Implemented while loop-based navigation that compares current displayed month with target month, clicking navigation buttons until the correct month displays.

Integration Pattern

Used TestNG runner class to execute Cucumber scenarios, combining the benefits of BDD readability with TestNG's robust test execution capabilities.

Learning Outcomes



Dynamic Component Automation

Mastered techniques for automating complex dynamic web components, particularly grid-based calendars with month navigation requirements.



Debugging Expertise

Enhanced debugging and DOM inspection skills through troubleshooting dynamic element interactions and synchronization challenges.



Framework Integration

Deep understanding of integrating Cucumber with Selenium and TestNG for cohesive test execution.



Logic-Based Automation

Developed sophisticated logic for navigating calendar components based on target date calculations.

Technical Stack

Selenium WebDriver

Browser automation with element interaction and page navigation

Java Programming

Object-oriented implementation with clean code practices

Dynamic XPath

Advanced locator strategies for dynamic web elements

Cucumber BOD

Behavior-driven development with feature files

TestNG

Test execution, grouping, and reporting

Maven

Dependency management and project build automation



Key Technical Challenges

Dynamic Calendar Component

Grid-based date picker required handling of aria-label attributes and grid navigation logic to locate and select specific dates dynamically.

Month Navigation Logic

Implemented loop-based navigation to traverse calendar months based on target date, ensuring robust selection regardless of current displayed month.

Auto-Suggestion Handling

Managed dynamic location search field with auto-suggestionlist, requiring wait conditions and element visibility checks before selection.

Implementation Approach

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01

Feature File Creation

Scenario written in Gherkin format for human-readable specifications

02

Step Definition Methods

Java implementation of each Gherkin step with Selenium commands

03

Dynamic XPath Logic

Dynamic locators for calendar dates using aria-label attributes

04

TestNG Runner

Integration to execute Cucumber scenarios through TestNG

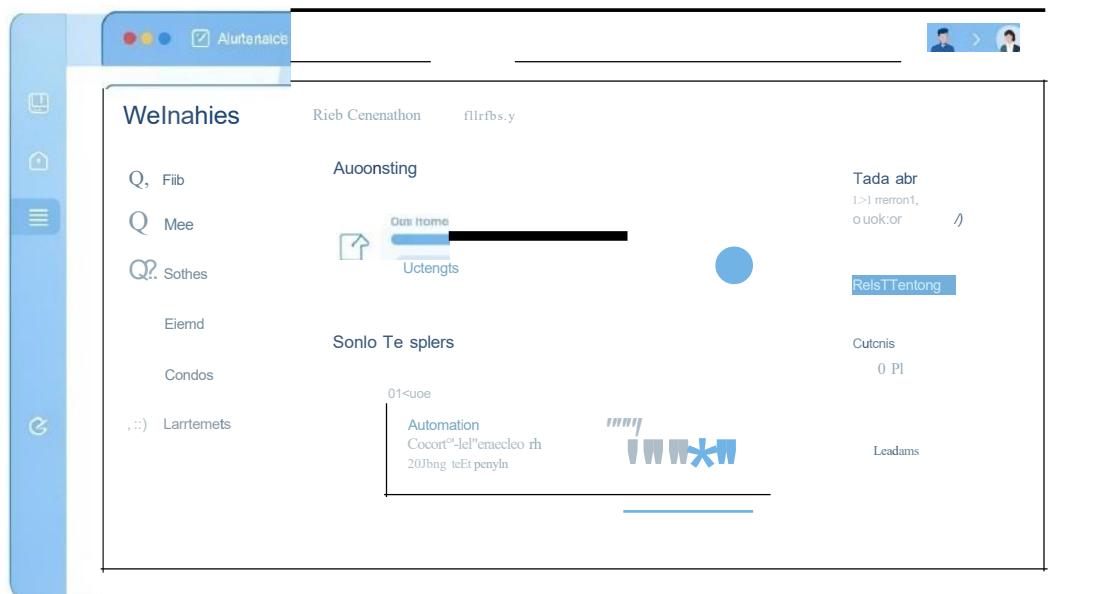
Test Case Architecture

Test Scenario

Verify users can successfully search for properties by selecting location and check-in date through the Airbnb web interface.

Expected Result

Search results page displays with properties matching the selected location and date criteria.



Project Overview

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Selenium WebDriver

Core automation framework for browser interaction

Cucumber

Behavior-driven development framework



TestNG

Execution framework for test management

Maven

Project and dependency management

Automated the complete user journey of searching for properties on Airbnb, including dynamic location search and sophisticated calendar date selection.