

TRAININGRITE

[REDACTED] SDET Core Training Report

Prepared July 25, 2017

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Introduction



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Whenever I walk into a corporate training project, I consider two things as the greatest indicator of success: attitude and eagerness to apply. When these two elements are present, the technical, practical improvement will follow over time.

Although nearly every attendee was new to writing any kind of program, each had a positive learning attitude from the beginning. This can be a challenge when starting at level 1, but each demonstrated a willingness to push through this learning curve.

The next three days covering Selenium were engaging as attendees were actually seeing the fruit of their labor. They were eager to write and run code and watch the program execute automated actions onto a web browser. Most would ask good questions that took the class deeper into truly understanding Selenium, revealing to me that they are grasping the core principals of automation testing.

The most helpful session was applying our Selenium and Java knowledge to a real-world case study: testing the Dealertrack front-end application. We referred to this example several times, as it brought realistic challenges that required critical thinking, extra Selenium techniques, and even some basic algorithms with Java programming.

After just four days, most of the attendees were competent enough to write their own basic Selenium tests for their business domain, and eager to implement in their projects.

The positive feedback I received was truly an indicator of a successful training from all perspectives.

Topics Covered

MONDAY, JULY 17

JAVA PROGRAMMING

Overview of Java

Preparing the Environment: Eclipse and JDK

Basics of Programming:

Conditional Logic, Variables, Loops, Functions

Functions: Return Types and Parameters

Object-Oriented Programming

Classes

Abstraction

Constructors

Method Overloading

Static Keyword

Packages and Public / Private Specifiers

Encapsulation

Exception Handling

How to Anticipate Specific Exceptions

Try-Catch Blocks

Reading Data from a Text File

Writing Data to a Text File

Debugging and Solving Common Java Errors

TUESDAY, JULY 18

SELENIUM WEBDRIVER

MORNING JAVA TOPICS:

Introduction to Data Structures

Arrays & Collections Framework

Iterating Through a Data Structure

SELENIUM

Introduction to Selenium WebDriver

Creating an Outline of a Test Case

Learning Selenium Commands

Finding Elements on a Web Page

Finding Elements on Chrome and Firefox's Firebug

Getting and Testing Text From a Web Page

Using Selenium IDE to Record & Run Tests

Using Selenium IDE to Generate Starter Code

Discussion on Limitations of Selenium IDE

Introduction to JUnit Testing Framework

Test Outlines with Annotations

Importance of the setUp and tearDown Methods

Pass / Fail Assertions

TestNG Testing Framework

Annotations and Assertions

Creating an XML TestSuite

Writing to a Log file with Log4j

Saving a Screenshot file

WEDNESDAY, JULY 19

ADVANCED SELENIUM WEBDRIVER

CASE STUDY: TESTING REAL-WORLD BUSINESS APP

Writing a Selenium WebDriver Test for the
██████████ Front-End Application
How to Think Through and Fill in Test Steps
for Entire User Story Test Case
Discussion on Item Locators:
ID / Name / LinkText / XPath / CSS Selector
Creating Multiple Assertion Checkpoints
Handling iFrames in Selenium
Selenium Waits and Page Loading

INTRODUCTION TO FRAMEWORKS

Creating a Utilities Package for Reusable Code
Writing a DriverFactory Class
Cross-Browser Testing Framework for
Chrome, Firefox, Internet Explorer
Writing a Screenshot Class

DATA-DRIVEN FRAMEWORKS

Reading Data from a CSV File
Using JUnit Runner Class with @Parameters to
Parametrize Data Source
Writing Java Algorithms to Handle
Checkboxes and Radio Buttons in DDT

THURSDAY, JULY 20

BUILDING A FRAMEWORK

DATA-DRIVEN FRAMEWORKS

Reading Data from an Excel File
Using TestNG @DataProviders to Parametrize
DataSource by Record
Implementing a Data-Driven TestSuite
Enhance Dealertrack Case Study with Excel DDT
Reading Data from a SQL Server Database
Understanding JDBC
Database Reader Explanations and Observations

PAGE OBJECT MODEL

Page Object Model Discussion
Creating a Repository of Page Elements in a Class
Creating a Repository of Tests in a Tests Package
How to Write a Test with Page Object Model

Lab Assignments

EXERCISE 1

Use encapsulation for the Student database application

GOAL Implement object-oriented programming concepts such as public / private specifiers, object instantiation, void and return methods, and get / set methods.

EXERCISE 2

Write a Test Case to fill out the Create a New Account web application.

GOAL Practice using Firebug / Chrome's developer tool to find various form elements on a web page, while practicing writing Selenium commands.

EXERCISE 3

Modify a TestNG Suite file to include two tests within one suite.

GOAL Understand further how TestNG framework operates and how to customize test suites using an XML file.

EXERCISE 4

Enhance DriverFactory class by overloading the get method to handle requests if no arguments, one argument with Browser parameter, and two arguments with Browser and URL parameters.

GOAL Implement object-oriented programming concepts in real world setting, while also implementing cross-browser testing within the DriverFactory class.

EXERCISE 5

Write the algorithm that will select checkboxes based on the source in a CSV file.

GOAL Use Java programming to logically solve automation problems in realistic scenarios.

EXERCISE 6

Create a new CSV file for login test data based on the CSV file for creating a new account, then data-driven both tests using a TestNG suite.

GOAL More practice with data-driven testing and code manipulation.

EXERCISE 7

Modify the Dealertrack Excel DDT test to include the browser type.

GOAL Know how to customize tests and use DriveryFactory class in a data-driven framework

EXERCISE 8

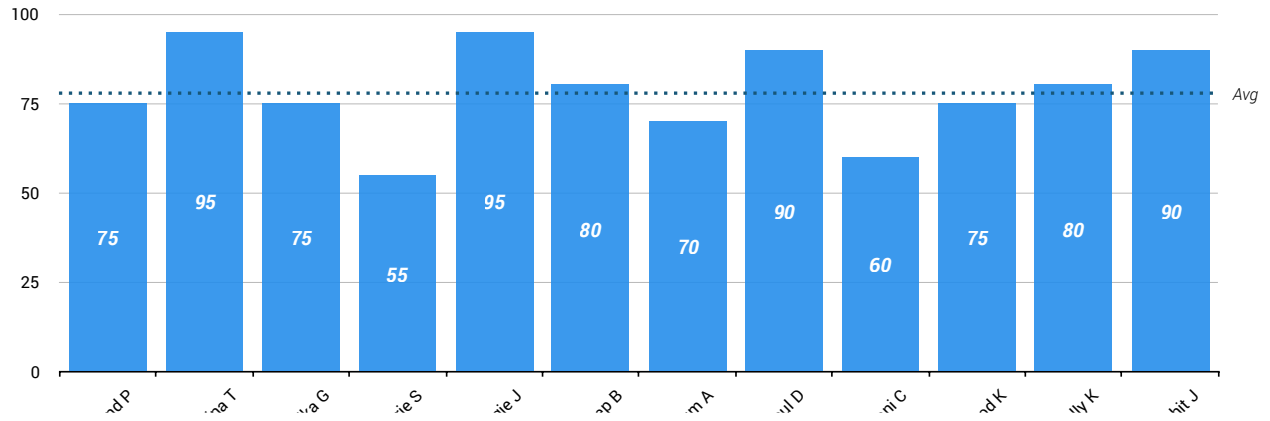
Modify the Database get method to take the query as a parameter

GOAL Understand how the Database reader method works and returns

Quiz Scores

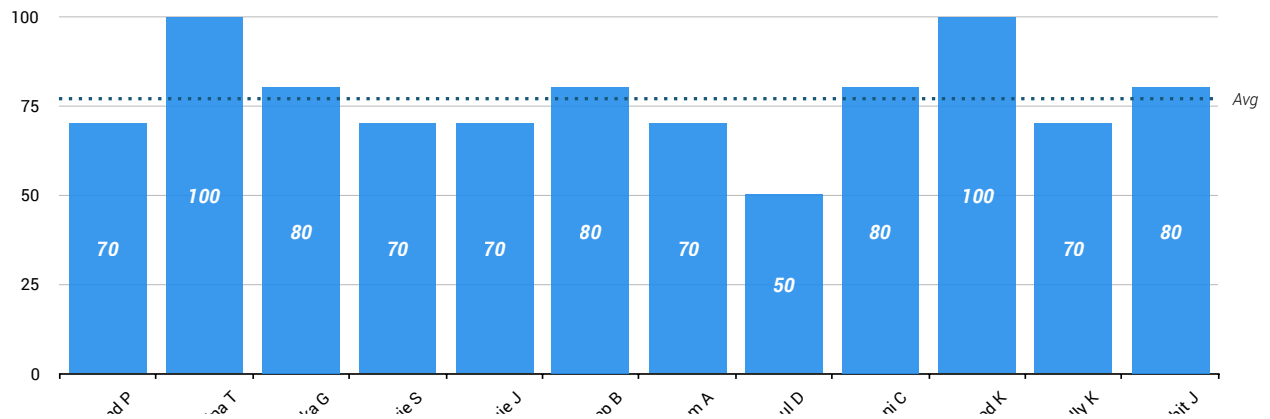
QUIZ 1 | TUESDAY, JULY 17
Java Basics & Object-Oriented Programming

CLASS AVERAGE
78%



QUIZ 2 | WEDNESDAY, JULY 18
Selenium WebDriver

CLASS AVERAGE
77%



Performance Summary

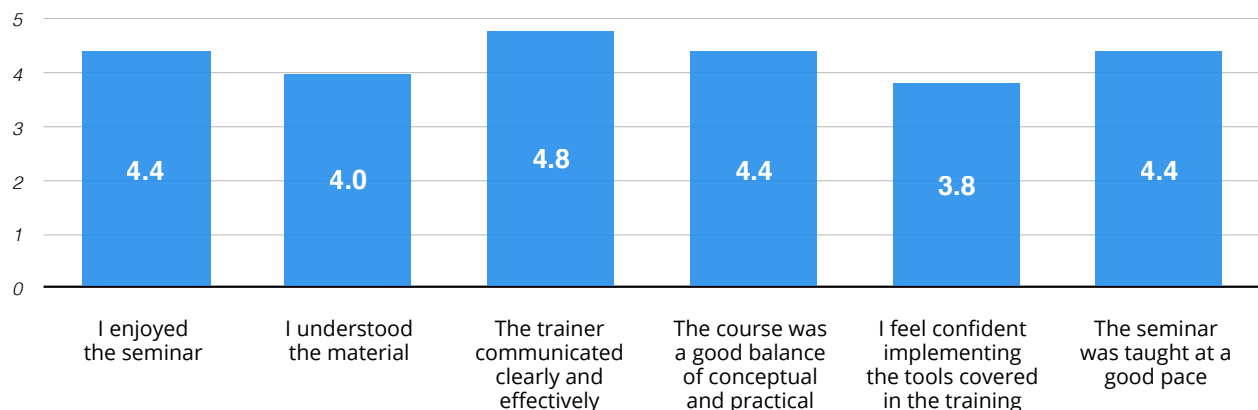
Starting/Ending Point: my evaluation of where attendee began/ended with programming and writing Selenium tests.

Quickness to Adapt: my evaluation of how quickly attendee was able to grasp and implement the concepts covered

| | JAVA QUIZ out of 100 | SELENIUM QUIZ out of 100 | STARTING POINT scale 1 to 5 | ENDING POINT scale 1 to 5 | QUICKNESS TO ADAPT scale 1 to 5 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------|--------------------------------|------------------------------|------------------------------------|
| Aruna Reddy | 75 | 70 | 2 | 5 | 5 |
| <i>Comments: Steady, solid learner and will make a good automation tester.</i> | | | | | |
| Ekaterina Tsipko | 95 | 100 | 4 | 5 | 5 |
| <i>Comments: Has a solid foundation and will quickly be writing thorough, advanced Selenium automated test scripts</i> | | | | | |
| Geetika Garg | 75 | 80 | 1 | 3 | 3 |
| <i>Comments: Starting from zero, she did well to improve her ability to write automated test scripts.</i> | | | | | |
| Laane Scheelar | 55 | 70 | 1 | 4 | 3 |
| <i>Comments: Starting from zero, she faced a learning curve but took the challenge and improved a lot. With a little more time, she will be a good automation tester.</i> | | | | | |
| Maggie Ding | 95 | 70 | 3 | 5 | 5 |
| <i>Comments: Had an obvious, clear understanding of Selenium WebDriver and how to solve and debug problems</i> | | | | | |
| Navdeep Datta | 80 | 80 | 2 | 4 | 4 |
| <i>Comments: Applied, quick to learn, and experimented with Java and Selenium outside of training time.</i> | | | | | |
| Neelam Attanayake | 70 | 70 | 2 | 5 | 5 |
| <i>Comments: Eager to learn, inquisitive, asked the right questions, very applied.</i> | | | | | |
| Paul Dhanwar | 90 | 50 | 1 | 3 | 2 |
| <i>Comments: Was slow to learn and often got stuck with Java errors; will need more time to understand and practice basics of programming before he will be a competent automation tester</i> | | | | | |
| Pavani Chellani | 60 | 80 | 1 | 3 | 3 |
| <i>Comments: Though the training proved to be a learning curve, she was very eager to learn and had a good attitude. She's headed in the right direction, will need more time / coaching / practice</i> | | | | | |
| Pranali Kulkarni | 75 | 100 | 2 | 4 | 3 |
| <i>Comments: Quiet learner that improved over time.</i> | | | | | |
| Shelly Khanna | 80 | 70 | 1 | 4 | 3 |
| <i>Comments: Starting from zero, she did well to improve her ability to write automated test scripts.</i> | | | | | |
| Shobhit Sam | 90 | 80 | 3 | 5 | 5 |
| <i>Comments: Was ahead of the game the whole time, quick to learn and apply concepts. Will make a great automation tester</i> | | | | | |

Feedback Analysis

4.3
Average Overall Score (out of 5)



The attendees gave a general approval of the training program and trainer. The scores indicate a positive learning experience by the attendees and a critique of the pace (note: due to the nature of the course, it is expected that attendees would feel that the training is fast-paced). Each attendee had an opportunity to write their own feedback and comments, below is a summary:

- Appreciated the presentation, personableness, and helpfulness of the trainer
- Appreciated the relevance and practicality of the material covered
- Felt the course could have been stretched longer or covered at a slower pace
- Expressed a desire for continued learning and advanced training

Summary

I was very pleased by the attitude and learning adaptation by each of the attendees. The Dealertrack testing team represented during this training proved to be an eager group excited to learn, ask questions, and apply the new tools to write automated test scripts.

Nearly every attendee commented on the pace of the training and the desire for more time to learn and practice. This is to be expected given that we had four days to introduce people to programming and implement Selenium WebDriver in real world scenarios. Yet I was encouraged to see everyone grasping the concepts, writing their test cases, and wanting to learn more.

Since most attendees were new to programming, there was a steep learning curve on day one with Java. However, each attendee persevered until the “fun” part of the course when we wrote Selenium automated test scripts to simulate a user’s behavior on a web page. The engaging and applicable topics drew in each attendee to focus, learn, and apply the concepts. Everyone made big improvements on the road to become automation testers.

Other notes and personal feedback:

- Attendees requested help on related topics; I’ll provide videos - reading data from an XML file and reading data from Excel (with .xlsx extension support)
- I invited attendees to my basic Java video course to help strengthen their programming
- Room setup was nice; though temperature would get a little warm as the day went on.
- I felt very welcomed by the Dealertrack community and attendees - and Laurie, who coordinated the training and acted as the host.
- I had network connectivity issues via LAN, but was able to use WiFi (prefer LAN).
- There was a firewall issue that did not allow me to connect to our SQL Server database for testing (I used my phone as a hotspot, but attendees could not follow)
- Would have been preferred to have someone from Dealertrack give more of a formal introduction to the trainer and introduction to the training program. Though we did not run into any issues, it is best that expectations are set at the beginning, and I prefer that a manager / coordinator would communicate these instead of the trainer.



CERTIFICATES AWARDED

- Anand Peddakotla
- Ekaterina Tsipris
- Geetika Garg
- Laurie Scheelar
- Maggie Jiang
- Navdeep Bawa
- Nelum Attanayake
- Paul Dhaliwal
- Pavani Chelluri
- Pramod Kota
- Shelly Khanna
- Shobhit Jain