

SELENIUM WEBDRIVER

NARAYANAN PALANI



To learn about software-testing job opportunities and practice with sample scripts on how to automate software applications using Selenium Webdriver, TestNG, JUnit, Cucumber BDD within Eclipse-based Java Projects and build an extensive Data Driven Automation Framework that consists of Screenshot capability, Log4J Integration, XSLT Reporting, Parameterisation, Object Repositories, Excel Sheets-based Data Input/Outputs, Cross Browser Tests using Firefox, Chrome and Internet Explorer, this book is an unmatched one. You can also enhance tests with Page Object Model, Reuse Selenium IDE scripts to Load Testing using JMeter!

Selenium WebDriver

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Selenium WebDriver

Software Automation Testing Secrets Revealed - Part2

Narayanan Palani



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Praise For The Book

"Its has an excellent articulation how to start and execute your automation project using of Selenium Web Driver. If you want to Learn Selenium Web Driver from a Practical point of view, close your eyes and go for it"

-Raghavendra Mesta, Test Lead, Deutsche Bank.

"A very useful and timely book of great value to intelligent automation practitioners. Great value for money. Loads of code samples to practise and very well edited"

-Vimalaadhithan Lakshmikanthan, Test Manager

"Software Automation Testing Secrets Revealed" is so much more than just a 'how to' guide. Hands down it is the broadest 'user centric' manual I have come across. While obviously written with the IT community as its primary audience, SATSR is simplistically written with a comprehensive explanation of the instructions, step-by-step guidance, pertinent resource links and tons of related screenshots."

- Janet Aponte-Pagan, CTFL, Software
QA/QC Analyst at Skanska USA

"I prefer this book for any newbie to selenium. Like NP's previous books, he again put his great practical experience and analysis in this book. Several examples, sample codes and configuration snippets would really help to learn practically, not just theoretically."

-Jagath Sathyanarayana, Automation & Service Virtualization
Consultant and Evangelist. Wipro Technologies, United Kingdom.

"I was learning Selenium Automation by myself and from Google. Suddenly I saw the book "Software Automation Testing Secrets Revealed - Selenium WebDriver" By Narayanan Palani and it was of great help. The book is written in a very simple way and with lot of practical examples which helps the tester to tackle the challenges in smart way."

-Sandipan Das, Test Lead, Commonwealth Bank of Australia

"There are two ways of looking at it. Some people prefer websites rather than books. But I go for a book to start learning the basics. This book definitely helps. Overall I would give 4 stars to this solid book."

-Pratiksha Ugade,KJ Somaiya Institute,Mumbai

"Narayanan has nailed it again...!!! This book is beautifully knitted with simplicity and exceptional coverage. It will minimise your effort spent on Google for your day today tech solutions. I'd recommend this book to the thrill-seeking crowd in the field Software Automation."

-Rajeev Gaur,Test Lead

"The book articulates well excellent solutions to the problems that industry faces today. The book will be very handy who is working or planning to make a career in software Test automation."

-Ajit Kumar Biswal,Test Lead

"The book is easy to read, informative, and complete. I would caution against reading it cover-to-cover as there may be too much information to process. Reading this book will help you to become the automation engineer we all strive to be. I will recommend this book to all my peers"

-Athira AM,QA Lead,Wipro Technologies.

"One of the fine edition on Selenium which helps you learn automation. Concepts explicitly written with detailed information and visuals to help user understand and take a leap forward."

-Shubham Joshi, Senior Business Analyst

"The book with rich content, self descriptive examples equal to coaching classes & readers understand easily without any relevant knowledge of programming language for sure"

-Jagan Kannappan, ETL Test Automation Specialist

"This Book is a well written and well thought through book. There is enough information to write selenium code in Java programming language from scratch. This suits for both beginners and advance level users"

- Rajkumar J. Bhojan, Principal Consultant,
Wipro Technologies, Boston, MA, USA.

"This is the complete guide for beginners and will help to save hours of time. This book have simple steps and supported screen shots"

-Murugadass, Test Lead.

"Awesome writing with good technical coverage on TestNG and reporting...!!! Excellent Narayanan Palani...!!!"

-Wilson Misquith, QA Test Lead

"It is really nice book , each and every basic concepts you have explained nicely."

-Navya Padiyar, Test Specialist

"Looks really good and straightforward; Very helpful to new comers!"

-Srikanth Varma, Test Specialist

"This book is very simple, easy to read and having clear concepts. The author definitely knows about the topic and it's very easy to understand. Very informative and I would recommend it to all my friends."

- Shriti K, Test Engineer (SDET), USA

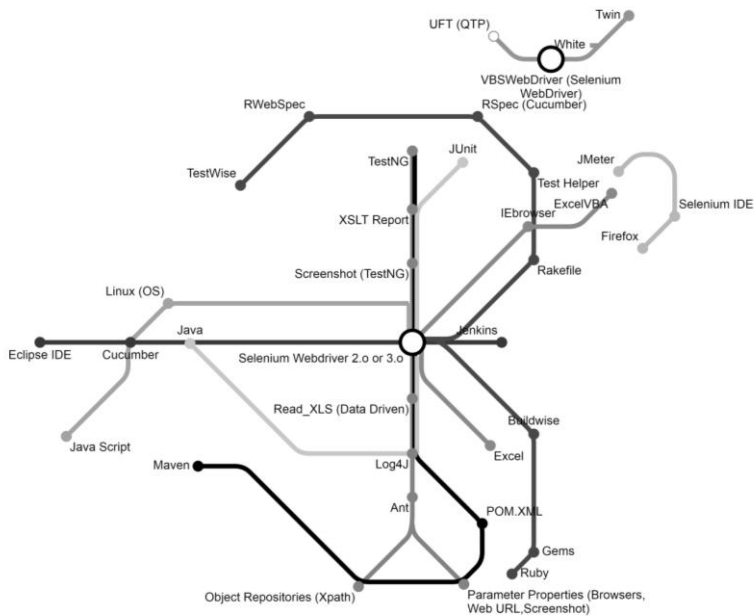
"Looks like you have explained the subject in such great detail...indeed selenium secret is revealed"

-Deepa Tipnis, Test Specialist

"This book would definitely encourage and fulfil the thirst of young automation engineers and beginners to achieve a great automation experience. His handcrafted book will produce smart automation engineers who can able to do the things 'just like that'..."

- Karthikeyan Sadaiyappan, Technical Lead.





Part 2:

Automation Software Applications using Selenium WebDriver, TestNG, JUnit, Cucumber BDD within Eclipse based Java Projects and build an extensive Data Driven Automation Framework which consists of Screenshot capability, Log4J Integration, XSLT Reporting, Parameterisation, Object Repositories, Excel Sheets based Data Input/Outputs, Cross Browser Tests using Firefox, Chrome and Internet Explorer. Enhance tests with Page Object Model, Reuse Selenium IDE scripts to Load Testing using JMeter!



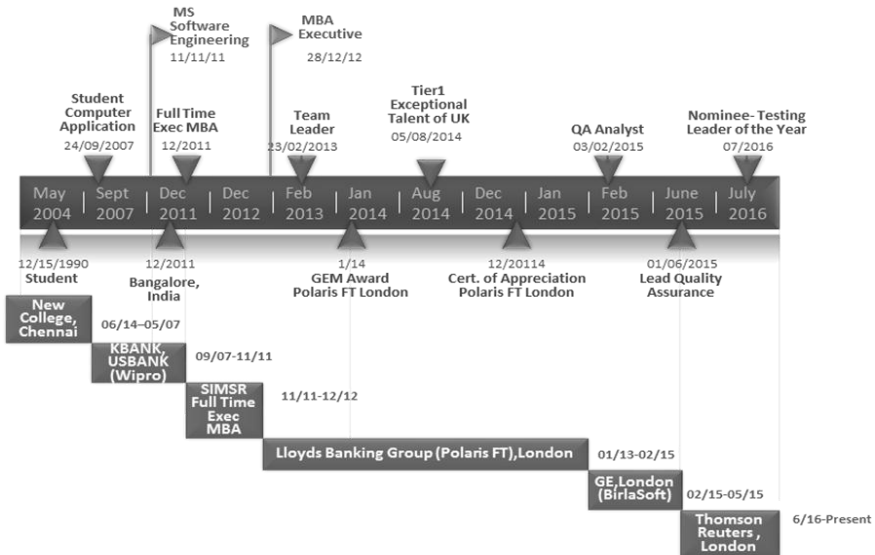
About The Author



Narayanan Palani

Narayanan Palani is endorsed as exceptional talent of UK within digital technology sector by Tech City UK.

Being a leader of proven and renowned software testing industry, Narayanan Palani volunteered to share technical knowledge through his best-selling book series ‘Software Automation Testing Secrets Revealed’ which ranks top amongst the books on computer science across APAC, USA, UK and Japan markets. His well-designed GITHUB open-source testing projects are accessed worldwide profusely and have been assisting job seekers to get involved into junior testing jobs.



Being a leading test specialist and at the same time holding six awards, fifteen international certifications, eight published research papers and four books selling across the world, he continued to innovate and implement cutting edge technologies as part of his recent roles. His IBM professional certificate profileⁱ is viewed worldwide and new comers are being inspired to take interest in software testing profession. He is also nominated for the ‘Testing Leader’ of the year 2016.ⁱⁱ

His 51+ LinkedInⁱⁱⁱ recommendations are strong evidences of his novel work as a testing leader, and the research papers such as Right Brain Testing using Gestalt Psychology^{iv} is still referred by research scholars for software testing R&D.

Apart from his spectacular personal records on software testing, he has trained and developed at least twenty-one non-IT/fresher candidates into software testing within a short period of one year, and surprisingly most of them are proving their abilities as strong team members in testing projects, and thus, his ambition of generating employability among the job seekers has been materialized.

CERTIFICATIONS

- International Software Testing Qualifications Board-CTAL Test Manager
- International Software Testing Qualifications Board-CTFL
- Certified Scrum Master

- PRINCE2 Project Management Foundations
- ITIL Foundation Certification
- HP Accredited Integration Specialist in Application Security
- IBM Certified Specialist in Rational Appscan.
- HP Accredited Integration Specialist in Quality Center v9 and QTP v9
- IBM Certified Rational Specialist in Test Management and Rational Robot
- IBM Certified Solution Designer in Rational Functional Test
- IBM Certified Solution Designer in Rational Performance Test
- IBM Certified Solution Designer in Rational Manual Tester
- IBM Examinations in Requirements Gathering and Use Case 1 & 2

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Foreword Ponsailapathi V	Recommendation Mukesh Adhvaryu	Code Reviewer Shweta Bhat
Framework Reviewer Arrchana Mohan	Content Reviewer Venkatesh VI	Selenium Topics Reviewer Dinesh Balaji





Ponsailapathy Viswanathan,
Director-Delivery, VirtusaPolaris

Ponsailapathi Viswanathan “Pons” has over 22+ years of IT experience in Travel, Banking and Insurance industries, mainly focusing on software delivery and solution. He has played key role in building the testing practice at Europe for his organization and handled strategic roles in the design and set-up of TCoE engagements for global banks across Americas, Europe & Middle East.

He led the set-up of near-shore delivery center for his organization in Northern Ireland, UK to service European customers and successfully established global delivery teams which can operate in tri-coastal model for global banks.

Also built technology CoEs for mobile testing, security testing & nurtured test automation, performance engineering practices to develop innovative solutions for Banking & Insurance customers.

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Foreword

Information technology is one of the challenging and rewarding industry. As per NASSCOM & other market trends the global testing market is estimated to reach US \$50 Billion by 2020. QA enterprises and test automation engineers will find exciting opportunities in the area of big data, mobile and API testing. Test automation skill is going to be one of the most wanted skill in Y2017 and beyond.

Considering the industry demand, there is a need to up skill ourselves continuously to stay ahead of the game and reap the benefits of latest technology. Now the industry is looking for cost effective solutions, tools like Selenium will be the best fit to manage the client requirements both in terms of technical complexity and cost.

To pick-up the nuances of test automation quickly, Narayanan Palani has scripted this book very nicely with simple examples based on his experience.

As an automation architect, Narayanan Palani has successfully implemented robust test automation utilities for complex trading applications in banking space. His penchant for perfection and innovative approach has created a huge positive impact in test automation projects with excellent results in terms of ROI (Return on Investment). Test automation techniques orchestrated by him made a difference in test automation strategy and maintenance of the test scripts.

Most of the people, don't share their hard learning's or techniques to others easily. Hats off to Narayanan Palani for his initiative to publish his decade long experience in the Test automation to aspiring candidates. He has articulated the end to end test automation techniques effortlessly in line with industry best practices. The secrets revealed here will enable the reader to build the test automation suite with ease.

I take this opportunity to congratulate Narayanan Palani for his effort to spread the learning's with testing community! Looking forward to see more such products from him in near future!

Happy reading!

-Ponsailapathy Viswanathan,
Director-Delivery, VirtusaPolaris



Mukesh Adhvaryu

👑 Exceptional Talent of the UK

Director & Co-founder, M&M Info-Tech Ltd. UK

16 Years of experience in Analysis, Design, Development and Implementation of Web & Windows Applications, Object Oriented design and development.

Awards & Achievements

2014: *National Award for Outstanding Services in Railways - conferred by Ministry of Railways India for developing Western Railway Data Management System & Report Automation module.*

Certificate of Merits

- 2005 – *Office Data Management System*
- 2004 – *Coach Management System*
- 2004 – *Block Analysis System*
- 2002 – *FOIS Analytical Reporting System*

My recent projects

MnMFramework 1.0 – alternative light weight components framework

MnMVirtualControlFramework 1.0-Innovative virtual controls framework

My previous projects

*Universal Data Analysis Tool, Generic Functions Library, Report
Automation Library and Data Access Core Library.*

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Recommendation

In March 2016, I started to prepare for my Exceptional Talent Visa to be endorsed by TechCity UK. After going through guidance available on official TechCity website^v, it was clear to me that this visa was a coveted one and the guidance was vague enough to keep anyone busy speculating as to what exactly one should and could submit as evidence to meet mandatory and qualified criteria. This visa was so important for me as its outcome was to decide whether my company will be based in Mumbai or London. So I wanted to have no stones unturned to make sure I prepared my case the best I could and as such I was desperately longing for an appropriate advice from someone who had been to this situation and emerged as successful exceptional talent of the UK. I started searching online for the one and I stumbled upon a name of Mr Narayanan Palani. I made LinkedIn connection invitation to him and to my pleasant surprise he accepted it and that is how a dawn of great professional relationship between him and myself happened. He helped me with his valuable inputs regarding my Tech Visa application and I have no doubt in my mind that he contributed in my successful exceptional talent visa application. I respect him a lot for his noble act of helping me when I was in need.

To quantify a talent in digital technology is an extremely difficult task and even to prepare documentation requires an exceptional talent! It takes few sleepless nights to figure out as to how you can prove yourself either as an established world leader in the field of your expertise or at least you have potential to be so in future. It's a real tricky part of the process. In my case, thankfully I had the National Award from the Indian Railways for Report Automation project I did in year 2014. Although my work in report automation differs from the phenomena of test automation, the fundamental concept remains the same as the core objective is 'Automation' of some process.

I have read this book from that perspective and I am glad that I find it extremely useful to further expand my idea of automation as a core ideology in various processes be it software testing or data reporting or even industrial processing. I am a hard-core C# fan but I do live in realistic world and must acknowledge the power of java and wide spread appeal of java based applications. So my friend Narayanan is right when he emphasizes on java for the beginners. The book is structured beautifully and it provides simple process flow to learn and practise.

Narayanan has this panache to make things simply simple and appealing to masses and I am sure this book will provide very precious reference base for all who want to pursue career in test automation. I especially like the part where the book starts revealing Object Capturing Techniques for Automation Testing which then further narrows down to fundamentals of 'XPath'. Starting from page 36 to 46, the book provides very helpful insights on DOM inspection and search techniques and tools available and how they can be used to explore the power of XPath. I believe this particular topic has universal appeal as it is useful in some other contexts as well. I had used XPath extensively with Mozilla web browser control to search web page content required for automated data downloading and report automation. As for the manipulation of the web pages, I relied heavily upon java script to be executed through JSContext object available with the Mozilla Web Browser Control.

Overall, I would like to rate the coverage of various topics such as Software Quality Management, Technology Change Management and Test scripting techniques to be of an excellent quality 4.7 out of 5! I also concur that the section on "Proof Of Concept (PoC)- Selenium WebDriver Based Test Automation Framework" is also written with extreme care and panache and it indeed provides in-depth domain knowledge. And yes the FAQ approach on "Selenium Exceptions Guide" is a nice one too. In conclusion, I highly recommend this book for all those aspirants who want to make it big in test automation.

- **Mukesh Adhvaryu**





Shweta Bhat
Software Test Engineer

*6+ years of comprehensive and in-depth experience in Testing
Hands on experience in Tools like HP Quality Centre11, Bugzilla, JIRA
& basic knowledge of SQL query writing*

Technical Skills

- *Testing Tools: HP Quality Centre11, Bugzilla, JIRA, Selenium*
- *Database : Oracle 11g*
- *OS: Windows, Linux*
- *Functional Areas: Web Testing, System Testing, Regression Testing, Sanity Testing, Optical Network testing & Localization Testing*
- *Test management activities like, test case designing, test case review, test execution and test execution status reporting*

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From Code Reviewer

When Mr. Narayanan Palani told me that he was working on part2 of the book about Testing, I was very happy to hear it. The importance of open source tool in the automation testing has been rising in the industry for years, and there are lot of knowledge sharing happening across the industry. It just required some way of organising the data, that would help a beginner to understand the starting point and the point where a learner should stop, and the experienced one would know where he stands

When I saw the book I found it as a comprehensive guide & also serves as a great reference as you go about your testing tasks, it not only prepares you what to code but also how to code. The book has explained the framework development in detail. Framework is all about defining and refining class hierarchies. The framework keeps evolving as the tester/developer gain experience. The code becomes more maintainable and readable.

Detailed step by step approach of the book introduces to you to achieve a good framework. Coding standards, creating automation POC, details on configuration settings, how-to's and related examples on Selenium web driver will help you code better i.e. maintainable. The book also gives an insight on Selenium 3.0. Highlighted section in this book is about preparing the reader for tackling job interviews. Author has given a lot of tips & tricks, they would help you get ready to face the interview, where the actual skills of yours speak.

All the best, happy coding & Testing.

- Shweta





Arrchana Mohan
Software Test Analyst

International Software Testing Qualification Board -ISTQB-BCS Certified,

Agile Scrum Foundation -EXIN(ASF) Certified.

Arrchana holds good experience in building Automation Suite Framework for Functional test, TestNG framework extended with Selenium. Experience in Maven for build Automation, Jenkins for Continuous Integration, Effectively handling SQL. Sound knowledge and experience in BDD with Cucumber.

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From Automation Framework Reviewer

Around the World, Test Automation is looming dramatically and has become an essential part of each project. Open Source tools are more popular and about 88% of organisation opt open source tools for their Business. Selenium grows rapidly as many Enterprises increasingly using Internet based applications. It is the booming stage for Selenium Test Automation as its going to hike the global market.

So what you are looking for ,Are you a new entrant or Automation admirer, it's the right stage to invest your time to explore in Test Automation with Selenium Web driver. The Author has design the book in such a way that, one can understand more depth about the Test Automation frameworks, which is what needed in today's market.

The creation of the Framework with Selenium is explained more precisely with stepwise approach, formulated with appropriate screenshots. Again designing Test suites are more meaningful for Automation suits as it contains all feasible test scripts, the author has demonstrate the concept with clean examples and topping with a scenario to explain suite skipping. Fair clarification of Parameter properties / parameterization with different browsers, and configuration settings. The example code's are explained with relevant facts, so new entrant can easily understand code, which is again additional positive about this book.

The concepts like checkbox, locators, list box, alerts, dropdowns, multiple page handling are blended with clear-cut example. TestNG is again a testing framework which facilities board range of testing needs. Annotation and jar files of TestNG are revealed with scenarios.

Such a brilliant book with detail insight about Selenium Test Automation, Highly recommended and satisfied material for those like to deep dive in Automation Industry.

-Arrchana Mohan





Dinesh Balaji

Avid reader and test automation enthusiastic. Have extensive experience working in corporate and start-up world and currently working on mobile automation projects.

<http://simpleexpressions.me/>

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From Topics Reviewer of This Book

In this fast paced agile development environment, testing plays a significant part concerning how soon a product can be tested and with continuous integration, re-tested.

Gone are those days where you wait for the developer to write the code and then your team designing test cases and a separate team creates a test data and also team specifically for making builds. Now the tester owns most of the responsibility, and should have the best of knowledge in all software development process and also possess the killer mindset to break the code.

This book stands out from the rest by giving you the real glimpse of what major scenarios you come across automation and what best tools you can use to get your job done. As of today, there are a lot of paid and open source tools available in the market based on your need and requirement, but the author has chosen the best to serve the general need of the audience.

I recommend the book for any manual testers who want to step up their career as automation tester and who aspires to learn more about what's the current trend in automation and how they can adopt and apply the knowledge they gain. This book has succeeded in the way of simplifying manual testers understand the methodology and approach of automation.

-Dinesh Balaji





Venkatesh VI

12.5 years of demonstrated experience in Software Testing on domain-specific projects (Investment Banking, Capital Markets)

Have led a test team of 20+ people for a Clearing & Settlement Corporation with an ability to multi-task within a single-project / program; Worked as a Project Manager of a QA Team with Onshore + Offshore mix

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From Content Reviewer

If there is a professional certification institutionalized by a QA organization/body, I would certainly recommend this book for Test Automation enthusiasts - right from the "Novice" to "Intermediate" level. This book provides a structured way for any automation enthusiasts/developers to get a next-level view.

In a way, you are Automation Evangelist. I can see that you have invested a good amount of time for the benefit of Automation engineers to venture into developing Selenium-based "Auto Robots". I will recommend this book to my fellow colleagues.

- Venkatesh VI, Test Manager



Dedicated to

Yantroddharaka hanuman and Sree Raghavendra Swamy



Sree Raghavendra Swamy

"Pujyaya Raghavendraya Sathya Dharma Rathayacha
Bajatham Kalpa Vrukshaya Namatham Kamadehnave"

"I worship the esteemed Raghavendra who is the protector of Satya and
Dharma. I salute the esteemed Raghavendra who is like a kalpavriksha. I

bow to Sree Raghavendra who is also like our Kamadhenu.

Kalpavriksha is a divine tree, which is there to fulfill all our wishes.

Kamadhenu, similarly is a wish fulfilling cow. It is also sometimes
referred to as mother of all cows."

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How to read this book?

There are two parts associated with Selenium WebDriver reading:

Book1: Software Automation Testing Secrets Revealed

Book2: Software Automation Testing Secrets Revealed Part 2 Selenium WebDriver

Selenium WebDriver Hands-on Training sessions are recorded (duration: eleven hours and twelve minutes) and available at following youtube link in the title "Selenium Test Automation Training Narayanan Palani":

https://www.youtube.com/watch?v=Ke_AQVxMhds

While reading this book the technique of Pomodoro should be followed thoroughly for better understanding:

Dos:

- Minutely focus your attention for 25 minutes without being interrupted on any chapter.
- Opt for a breather for 5 minutes to relax your mind. Perform Google search to analyse your area of difficulty. Then, jot them down on a paper. (Post these questions in quora.com or stackoverflow.com to get answered by experts.)
- Write sample code and execute them to analyse results, exceptions or errors, if occurred any.
- Revise the same chapter at least 4 times in order to strengthen your concept as more concrete in its approach.
- A 15-minute break is advised to take and then continue reading the next chapter.
- In case of meeting an alien programming language in the course of reading, practicing Java programmes using 'Java BlackBook by Steven Holzner' is duly advised, thereafter, practicing scripts in command and be prompt to compile and execute.
- Save the practised scripts and get them uploaded to git and be an 'Open Source Framework Developer' at github.com/narayananpalani/testautomation.

Don'ts:

- Never force yourself to complete the book overnight or within a week.

- Never plunge yourself to different programming languages until automation framework has been developed in that language.
- The reading of the chapter and practicing the scripts should not be performed simultaneously; a comprehensive reading is always required for a good conceptual understanding of the subject so the reading should not be a futile attempt; ‘knowing’ and ‘doing’ are two different words.
- In case of meeting an unknown programming language in the course of reading, practicing Java programmes using ‘Java BlackBook by Steven Holzner’ is advised, but practicing scripts in Eclipse or any IDE while learning those fundamentals is strictly prohibited, as command prompt gives quick learning in java fundamentals (to analyse errors) rather than IDEs which help in building the scripts (whereas Eclipse can be used for Selenium-based learnings).
- The idea like programming language has to be learnt first in order to start learning Selenium scripting should not be presupposed; both can be learnt in parallel to understand how the script works for selenium based tests.



Introduction

Test automation jobs have been considered as the most wanted in Information Technology Industry and Selenium WebDriver as one of the best automation tools in recent years; since the demand of Selenium WebDriver based jobs are being increased day by day in the market, there is always a dire need felt to get test specialists build and maintain the automation frameworks properly.

But no doubt, there are some challenges and obstructions faced in the training and development process of new testers (junior testers), and job seekers are trying various online and face to face selenium trainings to secure a decent test automation job for themselves. Some of the training programmes are designed in such a way that high priority is given to Selenium IDE before getting into Selenium WebDriver training. Moreover, Selenium IDE is not a best tool to start a training programme as it is not regarded as the most wanted tool in software test automation; similarly, there is a lack of certainty on choosing programming languages in scripting Selenium WebDriver frameworks using Java, DotNet, Python, Ruby or Javascript. Some training participants first try their hands on Java until they are hindered by some issues in the code and then they automatically bounce back to DotNet to continue scripting which deviates their attention towards failures.

For the purpose of scripting Selenium frameworks and complete designing of the overall automation framework, it is always strongly recommended that Selenium learning beginners should be conformed to one programming language before switching to different languages such as DotNet; *‘Why Java based Selenium WebDriver Framework is widely used across the industry?’* A particular section has been explained in detail in order to suggest the most suitable programming language to set about learning the testing frameworks.

Before taking up first few chapters of the book to read, it is highly recommended to download the entire well-built automation frameworks from Github-Refer the section *‘Download Selenium Projects from GitHub’*;

You are suggested to install required software with the help of the section *‘Install Java, Eclipse, Cucumber, TestNG’*; these projects will prove as a great help in the process of running the tests in parallel to learning the new concepts in each chapter. Following two chapters will suggest right steps to run such tests in Eclipse:

Steps to use the existing or ongoing Selenium Automation Project in Eclipse

How to execute the scripts from Automation Framework

When junior testers start off as functional/manual testers, there is a scope to learn fundamentals of software testing. On the contrary, junior automation testers have limited scope on the understandings around testing fundamentals and most of the productivity contribution is only directed towards test scripting; hence, learning software-testing fundamentals from project experience is one of the primary needs required by automation testers, and these examples and basic concepts can be referred in the chapters below:

- Why Software Testing is Necessary and Mandatory for Software Projects?
- Importance of Reliability in Software Testing
- What is Software Testing?
- Why Defects Occur in Software?
- Software Testing-Four Key Objectives
- How Testing and Debugging are different?
- How much Testing is enough?
- Software Testing Principles
- Failure Mode and Effects Analysis (FMEA)
- Risk Based Testing

When job seekers complete their Selenium training and are ready to apply for jobs, most of the CVs fail to match the requirements posted for the available jobs. This has been regularized as the routine issue for recruiters to compare each profile to select the best CV. Even job seekers strive to overcome the hurdles to differentiate CV, resume, bio-data from one another, while applying for technical roles; in order to suggest right guidelines for posting the perfect resume on automation jobs, following sections are to be referred thoroughly:

- Automation Test Industry
- Selenium-Brief History
- Why Java based Selenium WebDriver Framework is widely used across the industry?
- Resume Guide for Selenium Experts
- Resume Evaluation Process for Test Automation Jobs-A Case Study

Step1: Requirement for the Selenium Automation Tester Role posted online

Step2:Resume from Candidate**Step3:** Resume Evaluation Checklist

- Future of Test Automation Roles or Software Testing Roles
- Interviews of Selenium Test Automation Roles
- Experience of Test Automation
- Implementation of Selenium Automation Framework in Agile Projects

Before embarking on the project to write an actual automation framework, test specialist has to perform a Proof of Concept to validate whether the tool selection of Selenium WebDriver (using Java) is right and adds value to the project by increasing Return on Investment; both this Proof of Concept and respective templates vary based on organizations but the steps followed within PoC of Automation Frameworks are identical and it can be analysed successfully using the chapters below:

Proof of Concept (PoC)-Selenium WebDriver Based Test Automation Framework

1. Definition
2. Introduction
3. Automation PoC approach
4. PoC Considerations
5. PoC Outcomes
6. Assumptions and Dependencies
7. Risks Associated
8. Problems in Automation
9. Methodologies for PoC Approach
10. Advantages of PoC
11. Entry Criteria
12. Exit Criteria
13. Test Architecture
14. Scripting Guidelines
15. Design for Sustainability
16. Feasibility Study
17. Prove the Concept

When PoC is conducted, test specialist has to figure out the ways of scripting on Selenium WebDriver (using Java) for various testing needs. Following chapter will assist in the process of analysing such practice scripts in Selenium WebDriver with multiple examples:

- Practice Scripts Sample on Selenium

- Selenium 3.0 Test Scripting
- Test using Gecko Driver in Selenium 3.0 Beta
- Test using Chrome Driver in Selenium 3.0
- Behavior Driven Development and Selenium WebDriver
- Script to search Google using Selenium WebDriver and JUnit

During Selenium WebDriver scripting, it has been noticed that one of the primary elements of scripting is Xpath and capturing such Xpath properties had never been a smooth landing for any job seekers and especially complex for someone joining from non-I.T background to I.T jobs; So there are some sections provided with detail and necessary screenshots to help analysing and understand Xpath capturing logics in the chapters below:

- Object Capturing Techniques for Automation Testing
- Selenium Locators
- Locating by Identifier
- Locating by Id
- Locating by name
- Locating by XPath
- Locating Hyperlinks by Link Text
- Locating by DOM
- Locating by CSS

In the process of describing automation framework design methods, many training programmes of Selenium WebDriver fail to achieve the desired results. To learn and perform Automation Framework Design in test automation (using Java) for any novice candidate from scratch is highly important in their course of learning. Scripting few lines of code in Selenium is not enough to help job seekers in such cases as candidate is required to be in a position to explain the complete architecture of automation frameworks with all mandatory features associated with the framework while building them using Java; So the complete scripts of automation framework has been uploaded and made available online at GITHUB (URL given in first few chapters) and the detailed explanations are provided in chapters below:

- Selenium Web Driver Scripts to build Automation Framework
- Maintaining Object Repositories and Reusable Components
- Data Driven Tests using Excel Files with Selenium Web Driver
- Capture Screenshots using Selenium WebDriver
- How the Screenshot Utility can be extended to Selenium based Framework?

- XSLT Reporting
- Example XSLT report
- How to add such XSLT Reports to the emails and send to stakeholders?
- Parameterization in Automation Framework
- TestNG Scripting for Selenium Automation Framework
- Next Generation Test Automation Results Management

Note: Installation and configuration of each jar files and respective automation framework features are explained in detail as part of Part1 of this book

The next big challenge put forward to the test team, while implementing the automation frameworks in the testing projects, are from Maintenance and Defect Prevention on such automation frameworks over the period; The failure to run the tests by automation frameworks due to configuration changes is an immensely challenging task. In such cases, CMM Levels have been considered as the most suggested implementation on test automation projects and the detailed guidelines pertaining to this are given in the following chapters:

- CMMI Level and Software Testing
- CMMI Level Implementation in Automation Frameworks

While working as test automation specialists, various obstructions have been faced in automation framework code and test run of various scripts in the form of exceptions, failures and different issues; These exceptions are to be addressed with high importance to run the ongoing tests, failing in which, it impacts the overall test execution schedule; In such circumstances, the test engineers are to refer stack overflow, Quora or blogs to find right answers and risk mitigation steps to overcome Selenium Framework based issues; But some of the latest challenges, exceptions have been left unresolved and these common questions/challenges/exceptions are detailed and answered in following chapters to benefit automation test specialists:

- Selenium Exceptions Guide
- Problem Solving Section-Selenium WebDriver

The best practices on writing Selenium WebDriver based frameworks are minutely explained in detail in the chapter below:

- Selenium Test Automation Best Practices

Selenium 3 based test scripting and supported browser versions are detailed in the section below:

- Selenium 3.0 Test Scripting

Behaviour Driven Development has been noted as the most suggested ATDD (Acceptance Testing Driven Development) method in testing industry. It is explained in the chapter below:

- Behaviour Driven Development and Selenium WebDriver

After being confirmed of the comfortability in writing java based Selenium WebDriver automation frameworks by the test specialists, it is important to understand the way in which the other scripting languages are used to script Selenium WebDriver, and these frameworks are explained in following chapters:

- Selenium WebDriver and Ruby based Automation Framework
- JavaScript based Selenium Cucumber Automation Framework on Linux

Note: C#-based scripting has been explained with example scripts and frameworks as part of Part1 book in the chapter below:

Automation Framework using Selenium WebDriver with DotNet

Build Configuration Tools such as Maven and Ant which are discussed as part of Part1 book in the chapter below:

- Maven Test Automation
- Run Test.bat for Ant Build



Learner's Study Flow Chart for Selenium WebDriver

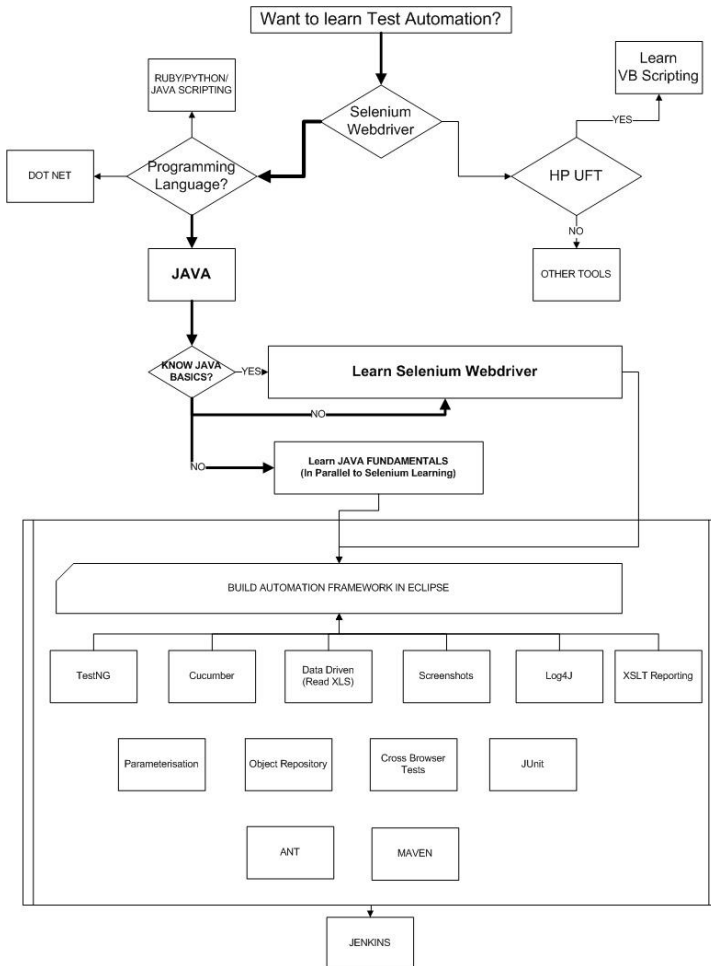


Figure 1 Learner's Study Flow Chart

Download Selenium Projects from GitHub

As a pre-requisite before getting into the chapters based learning of Selenium Implementation, it is strongly advised to make use of well built automation test projects made available online at <http://github.com/narayananpalani/testautomation>

Once page is opened, click on Signup to register on GitHub page:

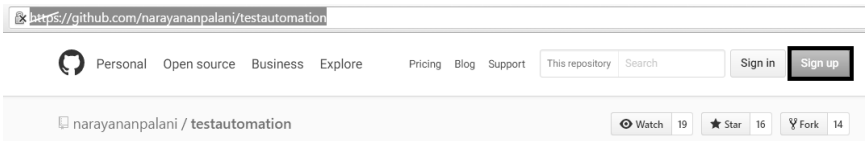


Figure 1 Github Signup button

Enter relevant details on GitHub registration to create user id and password:

A screenshot of the GitHub registration page. The browser address bar shows 'https://github.com/join?source=header-repo'. The page is divided into three steps: Step 1: Set up a personal account, Step 2: Choose your plan, and Step 3: Tailor your experience. The first step is active. Under 'Create your personal account', there are input fields for Username, Email Address, and Password. Below the Password field, a note says 'Use at least one lowercase letter, one numeral, and seven characters.' To the right, a box titled 'You'll love GitHub' lists benefits: Unlimited collaborators, Unlimited public repositories, Great communication, Frictionless development, and Open source community. At the bottom, a note states: 'By clicking on "Create an account" below, you are agreeing to the Terms of Service and the Privacy Policy.' The 'Create an account' button is highlighted with a black rectangular box.

Figure 2 Github Registration

Once logged onto GitHub page, click on WATCH and STAR to make sure you are following the project updates; When new projects are added to the repository, 'watch'ed user ids get notified on the changes:

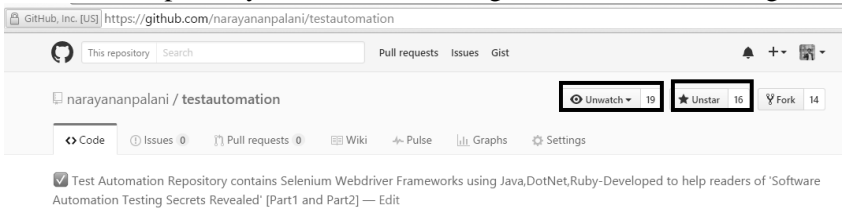


Figure 3 Github Project Watch and Star

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SELENIUM WEBDRIVER

Software Automation Testing Secrets Revealed Part2 Selenium WebDriver

If you are a software-testing professional, a developer, or a student looking forward to get a job in software industry, this book will help you in creating automation test scripts for your web applications using Selenium WebDriver; this is the right guide for you! As a prerequisite, a basic knowledge in programming languages is expected, although any previous knowledge of selenium testing tools is not necessary.

About Author

Narayanan Palani is endorsed as exceptional talent of UK within digital technology sector by Tech City UK.

Being a leader of proven and renowned software testing industry, Narayanan Palani volunteered to share technical knowledge through his best-selling book series 'Software Automation Testing Secrets Revealed' which ranks top amongst the books on computer science across APAC, USA, UK and Japan markets. His well-designed GITHUB open-source testing projects are accessed worldwide profusely and have been assisting job seekers to get involved into junior testing jobs.

Being a leading test specialist and at the same time holding six awards, fifteen international certifications, eight published research papers and four books selling across the world, he continued to innovate and implement cutting edge technologies as part of his recent roles. His IBM professional certificate profile is viewed worldwide and new comers are being inspired to take interest in software testing profession. He is also nominated for the 'Testing Leader' of the year 2016.

He can be reached at following LinkedIn Page:

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Book Review

"Software Automation Testing Secrets Revealed" is so much more than just a 'how to' guide. Hands down it is the broadest 'user centric' manual I have come across. While obviously written with the IT community as its primary audience, SATSR is simplistically written with a comprehensive explanation of the instructions, step-by-step guidance, pertinent resource links and tons of related screenshots."

- Janet Aponte-Pagan, CTFL, Software
QA/QC Analyst at Skanska USA

"This Book is a well written and well thought through book. There is enough information to write selenium code in java programming language from scratch. This suits for both beginners and advance level users"

- Rajkumar J. Bhojan, Principal Consultant,
Wipro Technologies, Boston, MA, USA.



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