Cognizant Academy

# Generation Cognizant (GenC) Learner Handbook (Quality Engineer with Selenium Automation – v5)

## Why do we need this GenC learning Program?

Gen C learning program engages young talents with a comprehensive learning pathway, giving the millennials an opportunity to interact with Subject Matter Experts (SME), understand the corporate environment, and groom themselves.

Cognizant emphasizes on Learner Autonomy where students take charge of their own learning, with the available tools and resources. More focus is on “learning” than “teaching”. Get ready to embark your own learning adventure!

## Program at a glance

Learning consisting of 2 Stages:

- Stage 1 – Core Java with SQL
- Stage 2 – Functional Testing With Selenium Automation Concepts – Inclusive of the Project

  Business Aligned Project

  Interim Project Evaluation + Technical Evaluation

  Final Project Evaluation + Final Technical Evaluation

## Program Highlights

- The complete learning journey is formalized using adult learning principles, where problem solving and applying the skills gained are given more importance than conceptual learning.
- Learner Autonomy is encouraged via Flipped Classroom, where the learning platform offers world class learning resources, and students would not be constrained by tutelage of an instructor.
- Get mentored by SME, whose motivation and guidance will help you accelerate in the learning journey.
- This program is applicable to Interns as well as GEN Cs.

Cognizant Quality Engineering & Assurance (QEA) focuses on ensuring the quality and reliability of enterprise processes, applications, and systems. QEA offers a comprehensive range of services including intelligent and automated quality assurance, modernization assurance, and experience assurance. These services are designed to accelerate business and technology changes, improve customer experiences, and ensure regulatory compliance. QEA also emphasizes the importance of automation and AI to enhance testing efficiency and deliver high-quality outcomes. By leveraging these advanced technologies, QEA helps businesses achieve digital success and maintain competitive advantage in the evolving digital landscape.

**How QEA Transforms Quality Assurance at Cognizant?**

Cognizant's Quality Engineering & Assurance (QEA) significantly transforms quality assurance by accelerating digital transformation and ensuring robust, reliable applications and systems. This seamless transition minimizes disruptions and speeds up technology adoption.

By embedding quality at every development stage, QEA enhances customer satisfaction and loyalty through high-performance, user-friendly products. Automation and AI-driven quality assurance streamline processes, reducing manual efforts and speeding up release cycles, which boosts operational efficiency and cuts costs. Rigorous testing and validation ensure compliance with industry regulations, crucial for sectors like healthcare and finance.

QEA also supports innovation by providing a reliable foundation for launching new products and entering new markets. Additionally, automated testing frees employees to focus on strategic tasks, enhancing productivity and job satisfaction. These combined impacts help businesses achieve strategic goals, maintain a competitive edge, and deliver exceptional value to their customers.

**Notable & Successful Stories on Quality Assurance by QEA Cognizant Team…**

Cognizant's Quality Engineering & Assurance (QEA) team partnered with a major health plan provider to overhaul their software quality assurance processes, addressing several critical challenges. The existing methods were outdated and inefficient, struggling to keep pace with the healthcare industry's evolving needs.

Ensuring compliance with stringent healthcare regulations was a significant concern, and the manual, fragmented processes led to delays and increased operational costs. Additionally, there was a pressing need to improve software quality to enhance patient care and overall service delivery.

QEA implemented automated testing frameworks and AI-driven quality assurance tools, significantly reducing manual efforts and accelerating the testing process. Rigorous testing and validation processes were established to ensure compliance with healthcare regulations, including continuous monitoring and real-time compliance checks.

By streamlining quality assurance processes and integrating advanced technologies, QEA improved the overall efficiency of the software development lifecycle.

The focus on quality from the start ensured that end products were reliable and user-friendly, leading to better patient care and satisfaction. As a result, the health plan provider saw a significant improvement in software quality and compliance, which was crucial for meeting healthcare regulations.

The enhancements in software quality directly contributed to better patient care and service delivery, while the automation and streamlined processes led to faster release cycles and reduced operational costs.

The time-to-market for software updates was significantly reduced, allowing the client to respond more quickly to market demands. This project exemplifies how Cognizant's QEA services can transform quality assurance processes, ensuring high-quality outcomes.

Health plan rebuilds software QA with Cognizant Case Study | Cognizant

**Tips for Successfully Carrying Best Practices for Implementing and Maintaining Robust IT Infrastructure with QEA.**

**Understand the Basics:** Start with a solid understanding of software development and testing fundamentals. Familiarize yourself with key concepts such as the software development lifecycle (SDLC), different types of testing (e.g., unit, integration, system, and acceptance testing), and the importance of quality assurance.

**Learn Automation Tools:** Gain proficiency in popular automation tools like Selenium, JUnit, and TestNG. Automation is crucial for efficient testing, and being skilled in these tools will enhance your ability to create reliable and repeatable tests.

**Adopt the Page Object Model (POM):** Use the Page Object Model design pattern to create maintainable and reusable code. This approach separates test logic from page elements, making your tests more organized and easier to manage.

**Focus on Continuous Integration/Continuous Deployment (CI/CD):**Understand and implement CI/CD practices. Tools like Jenkins help integrate testing into the development pipeline, ensuring that code changes are tested continuously and deployed seamlessly.

**Embrace Agile and DevOps Practices:** Agile and DevOps methodologies promote collaboration, speed, and quality. Learn how to work in these environments, focusing on continuous improvement and adaptability.

**Prioritize Test Coverage:** Develop comprehensive test plans that cover all aspects of the application, including functional, performance, security, and usability testing. Ensure that your tests are thorough and cover various scenarios.

**Leverage AI and Machine Learning:** Explore how AI and machine learning can enhance testing processes. These technologies can help predict potential issues, optimize test cases, and improve the overall effectiveness of quality assurance.

**Implement Data-Driven Testing:** Use data-driven testing to run the same test with different sets of data. This approach increases test coverage and ensures that your application works correctly with various inputs.

**Maximize Browser Window:** Ensure that your tests maximize the browser window to capture full-page screenshots and interact with all elements. This practice helps improve test accuracy and reliability.

**Validate with Assertions:** Use assertions to validate the outcomes of your tests. Assertions help ensure that the application behaves as expected and quickly identify any issues.

**Continuous Learning and Improvement:** Stay updated with the latest trends, tools, and best practices in quality assurance. Participate in training sessions, workshops, and online courses to continuously enhance your skills.

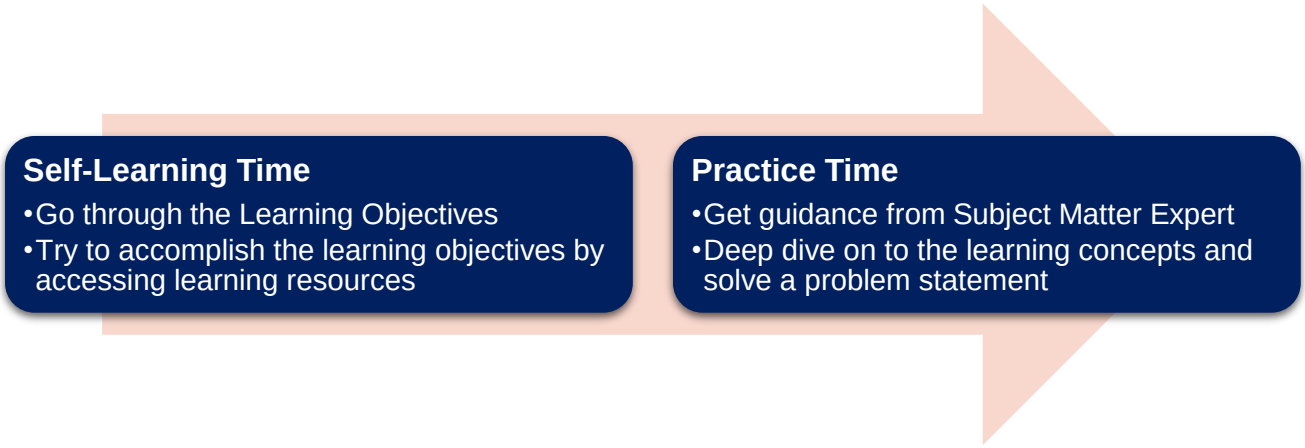
**Collaborate and Communicate:** Foster strong communication and collaboration with development, testing, and operations teams. Quality assurance is a shared responsibility, and effective teamwork is essential for success.

## Learning Journey with Flipped Classroom

This program encourages you to be more autonomous learners during guided self-learning hours, completing the learning objectives on your own pace and style, and get ready for the hands-on practice time.

The complete learning path is set in the GEN C Learn Platform, which you can login with SSO.

### Flipped Classroom




## Recommended Program Sequence

The learning journey contains 2 stages, followed by a Business Aligned Project.

- Stage 1 – Core Java with SQL
- Stage 2 – Functional Testing with Selenium Automation Concepts
- Business Aligned Project will provide you an experience of real time problem solving in Agile methodology.

### Stage 1 – Core Java with SQL

| Day 1 to 6 | Day 7 to 9 | Day 10 |
|---|---|---|
| • Core Java<br>• Code Challenge (CC) Assessment<br>• ICT - Functional Testing(Integrated Capability Test) Assessment | • SQL<br>• Code Challenge (CC) Assessment<br>• **Stage 1 Mock Assessment (**Qualifier) | • **Stage 1 Assessment (**Qualifier) |

## Stage 2 – Functional Testing with Selenium Automation Concepts

| Day 11 to 15 | Day 16 to 20 | Day 21 to 25 | Day 26 to 30 |
|---|---|---|---|
| • Functional Testing<br>• Gen AI Learnings<br>• ICT - Functional Testing(Integrated Capability Test) Assessment | • API using PostMan for RestFul application, Automation using Restassured<br>• Code Challenge (CC) Assessment | • Automation Concepts, Selenium configuration, WebDriver Basics<br>• Selenium Automation Techniques, Dynamic XPath<br>• Code Challenge (CC) Assessment | • Selenium Webdriver With POM and ApachePOI<br>• Code Challenge (CC) Assessment<br>• Project Deliverables |

| Day 31 to 35 | Day 36 to 47 | Day 48 to 50 |
|---|---|---|
| • Automation Testing - Selenium with TestNG(With XML & JSON)<br>• Code Challenge (CC) Assessment<br>• **Interim Project(Mini project) Evaluation + Interim Technical Evaluation** | • Automation Framework<br>• Devops<br>• Project Deliverables<br>• ICT - Assessment<br>• MOCK Evaluation-AI BOT | • **Final Project(Hackathon Evaluation + Final Technical Evaluation** |

# Key Learning Components of the Program

Cognizant has collaborated with Udemy to provide world class learning videos for the evolving future of work. These Udemy programs are woven into a learning path, empowering you to plan and learn at your style.

The program also connects you with Subject Matter Experts (SMEs) to get the professional guidance on your queries in the learning journey.

The program doesn't ONLY concentrate on the technical skilling, but also on the shaping up of the Behavioral skills. **Behavioral learning** would be done in ILT mode, with few Self-paced learning modules too.

### Evaluation Model

The program continuously evaluates if you can apply those self-learnt skills to solve a real-time business problem. Depicted below are the four key learning components, which are distributed across the learning journey for the purpose of continuous evaluation.

- Interim Evaluation (Project + Technical) through Video Interview
- Final Evaluation (Project + Technical) through Video Interview

The above evaluation components will attribute to the Performance Health Status (PHS) of a GenC. Additional Learning Components like Hands-On, Code Challenges and ICTs will help you to enhance your expertise level.

## Interim & Final Evaluation Approach

Below is the Evaluation Structure for GenC Learning Journey

The interim evaluation will be held halfway through the learning journey, while the final evaluation will take place at the end of the learning journey.

During the interim evaluation, the GenC will be interviewed by a Technical Subject Matter Expert (SME) from the Business Unit (BU) to assess your knowledge through a technical discussion. Additionally, the Mini project completed by the GenC will also be evaluated by the BU SME. Please note that the Mini project is an individual activity and not a group activity.

During the final evaluation, the GenC will again be interviewed by a Technical SME from the BU to assess their knowledge through a technical discussion. In the same evaluation call, the Hackathon project completed by each group will be evaluated by the BU SME. Please note that the Hackathon project is a group activity and not an individual activity.

## Preparatory Learning

For this automation track training, here are some preparatory learning materials that can be helpful for the interim and final technical evaluations. Preparatory learning material refers to resources, materials, and content that you can use to prepare. These materials are designed to provide you with the necessary knowledge, skills, and understanding to succeed in your learning objectives.

Remember, apart from these learning materials, actively participating in the training sessions, asking question and practicing hands-on exercises will greatly contribute to your overall learning and preparedness for the evaluations.

## Program Completion Criteria

**Stage 1 (Pre-requisites)**

**Gating Criteria: Qualifier Assessment**

**Stage 2 & Beyond (Advanced Skills)**

**Gating Criteria: Performance Health Status is Green**

| GenC/Intern Training | Evaluation Components | Pass Criteria | Evaluation Done by |
|---|---|---|---|
| **Performance Health Status - PHS (only from Stage 2)** | Interim Evaluation (Project + Technical) | Green,1 Attempt | BU SME |
| | Final Evaluation (Project + Technical) | Green,2 Attempts* | |

**Outcome of Interim / Final evaluation will be RED, AMBER or GREEN status**

Note: 100% Completion of Hands On in Stage 1 is mandatory for qualifier assessment and 100% Completion of Hands On in Stage 2 is mandatory for interim / final evaluation eligibility.

## Key Check Point Intervals in the Learning Journey

Progressing to Stage 2 depends on clearing the qualifier assessment after stage1. Candidates who do not clear the Stage 1 Qualifier will be terminated from the Internship. However, based on the demand and later needs, they will be considered for the CSD mode of training.

For ICT Assessments – These ICT are set as practice assessments. Duration is 4 hours, and Attempts provided for user to practice the assessment is 3.

For CC Assessments – These CC are set as practice assessments. Duration is 2 hours, and Attempts provided for user to practice the assessment is 3.

Subsequent stages learning journey, your progress will be measured. On the below check point intervals, your overall Performance Health Score will be calculated as on date, and the RAG status will be arrived.

**Table -** Check Point Intervals

| Check points | Interpreting Status |
|---|---|
| **Interim Evaluation** | - Green - On Track for Graduation<br>- Red /Amber - There will not be any re-attempts given |
| **Final Evaluation** | - Green - On Track for Graduation<br>- Red /Amber – Only 2 attempts are given<br>- (Attempt 2 is not applicable if the student is **Red** in Interim and Final Evaluation- Attempt 1)<br><br>**Note:** If student fails after the applicable re-attempts, they will be considered as “Not-Graduated”. |

## Icebreaker

Icebreaker session will be conducted for a duration of initial **5 days.** During the session, various topics related to Corporate Induction, Talent Management, Cognizant Agenda on

Core Values, Leader Talks, Alumni, BU Mentor connects will be covered. Followed by icebreaker, technical training will kick start.

Following sessions will be covered during the **5 days** of icebreaker

- Corporate Induction
- Talent Manager Connect
- Cognizant Agenda Sessions on Core Values
- Leader Talks (Academy) and many more…

A recommended day-wise schedule is provided below for the learning, with the learning content for the day, the practice hands-on and extended hands-on to be done for the day or

any other activities are listed. Few days might be interleaved to accommodate the extension due to Behavioral Training.

**Mock Interview Session:** This session is conducted to test candidate understanding and enhance candidates' best preparation for Interim & Final Evaluations.

## GenAI-Program Overview

### Introduction

AI Accelerate is a comprehensive program designed to empower learners with the knowledge and skills needed to harness the transformative potential of Artificial Intelligence (AI). This handbook serves as a guide, providing essential information and resources to help learners navigate through the program successfully. From understanding the fundamentals of AI to apply the advanced concepts in real-world scenarios. AI Accelerate is your gateway to unlock the power of AI and shaping the future of technology.

### Program overview.

AI Accelerate offers a learning opportunity, allowing GenCs to engage learning through the self-paced learning, Expert connect, and Knowledge assessment to measure the skills.

### Focus areas

- **Learning:** GenCs will have access to curated content and resources that cover a wide range of topics related to AI, including best practices, and case studies. This learning aspect aims to deepen GenCs understanding of AI and its applications in various industries.
- **Expert connect:** GenCs will have the opportunity to connect with expert in the field of AI. This expert will provide guidance, support, and insights to help GenCs navigate their learning journey and gain valuable insights into the industry.
- **Practice sessions:** GenCs can practice the use cases provided sessions that are designed to reinforce their learning and help them apply their knowledge in real-world

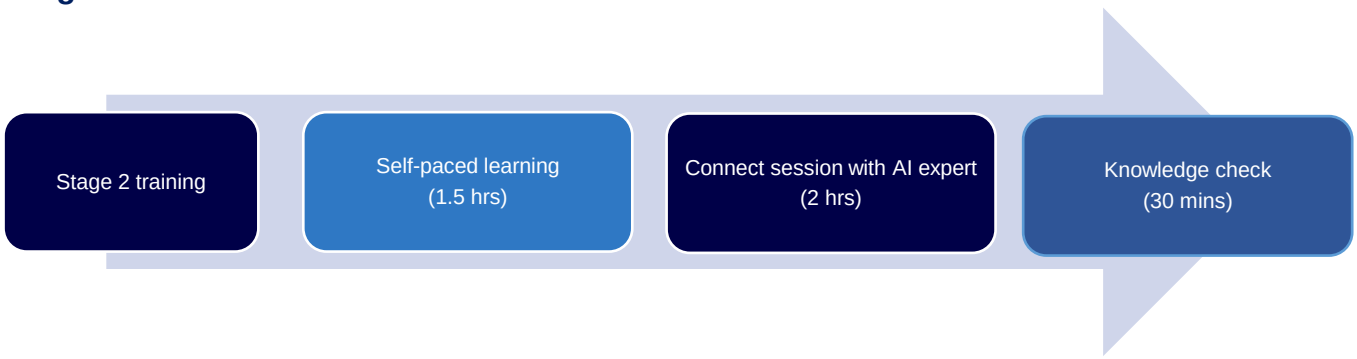
scenarios. These sessions will provide GenCs with hands-on experience and practical skills that are essential for success in the field of AI.

### Performance outcomes

Upon completing the self-paced learning component of AI Accelerate GenCs are expected to achieve the following performance outcomes:

- GenCs will demonstrate a thorough understanding of the fundamentals of AI, including key concepts, terminology, and principles.
- GenCs will be able to apply AI concepts and techniques to solve real-world problems, demonstrating their ability to analyze, design, and implement AI solutions.
- GenCs will develop and apply critical thinking and problem-solving skills in the context of AI, enabling them to identify, analyze, and address complex challenges.
- GenCs will collaborate effectively with peers, mentors, and industry experts to achieve common goals and contribute to the advancement of AI knowledge and practice.

### Program workflow




## Java Programming - Overview

### What is Java Programming?

**Java Programming** is a versatile and widely used programming language that enables developers to create robust, high-performance applications. The process of Java programming involves several stages to ensure the development of efficient and maintainable software.

### Purpose

Java programming is designed to be platform-independent, allowing developers to write code that runs on any device with a Java Virtual Machine (JVM). It emphasizes object-oriented principles, making it easier to create modular, reusable, and maintainable code.

**For Example,** Mobile Applications: Java is the primary language for Android app development. Many popular apps like Spotify, Twitter, and Netflix are built using Java12. Enterprise Applications: Java is extensively used in enterprise environments for building large-scale systems such as banking applications, customer relationship management (CRM) tools, and enterprise resource planning (ERP) solutions.

## Software Requirements

Below are the software's need to be installed in system from Company Portal, before start proceeding with selenium projects like mini project and hackathon.

1. Eclipse Org Eclipse IDE 2023-12
2. Azul JDK Version 17
3. Google Project Hosting Selenium Java 4.15.0
4. Google Project Hosting Selenium Server Standalone 4.8.0
5. Apache Software Foundation, The Apache POI 5.2.4
6. Eclipse Org TestNG for Eclipse 7.4.0
7. Jenkins project Jenkins 2.251

NOTE: If genc's are facing any challenges while installation, trainer/mentor will help to install the software.

**Objective to use the software:**

•Developing the project
•Writing the code
•Debugging the errors
•Testing the applications

## BU Mandatory - Technical learning and Handson – Core Java

NOTE: The Below topics will be covered by Trainers in Master sessions and relevant hands-on exercises will be provided as Daily Learning Exercises (DLE) for associates to practice.

Associates must complete the provided Udemy courses along with these BU Connect Master sessions. Hands-on practice and doubt clarification can be addressed during the trainer-led Master sessions.

Associates must also complete the self-paced learning and hands-on exercises available on the Tekstac Platform in parallel with the trainer-led sessions and DLE.

Click Here to View the BU Aligned Technical Training Contents Document.

## Schedule – Stage 1: Day 1 to 6

Day 1 to 6 will be focusing on Core Java.

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

**Continuous Learning: Technical Hands-on through Tekstac**

Post Completion of the ILT session, Trainee must Practice the Handson provided in the Tekstac Platform . In build code editor is available in this platform and Handson are automatically evaluated when the code is compiled in the editor.

**Continuous Learning: Java Practice Hands-on in Eclipse**

You will Parallel Learn and complete the Tekstac Platform Hands-on exercises and practice Topic wise Java Practice Handson Daily . This Exercise is set for practice only and not mandate . But completion of Tekstac Platform Handson is mandate for enablement of Assessments.

Follow these steps to practice - Topic Wise Java Practice Hands-on :

1. Software: Download the Eclipse software.

2. Practice Topic-wise Hands-on Exercises: Practice the given topic-wise hands-on exercises in your local environment using Eclipse daily post completion of Learning and platform driven Handson Exercise.
3. Submit for Evaluation: Once you have completed the exercises, submit them for evaluation.

## BU Mandatory - Self Learning Contents – Core Java

### Day 1

### Core Java

**Continuous Learning: ILT Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-1 | **Introduction to Java,Data Types and Variables** | **History & Features of Java:** OOP, platform independence, JVM, JDK, JRE |
| | | **Data Types:** Primitive and non-primitive types, Variable declaration, Type casting |
| Chapter-2 | **OOP Basics** | **Object-Oriented Principles:** Encapsulation, Inheritance, Polymorphism, Abstraction |
| | | **Classes and Objects:** Class structure, Object creation, Instance variables |
| | | **Constructors:** Default constructor, Parameterized constructor, Constructor overloading |

**Continuous Learning: Technical Enablement through Self-learning**

After completing each chapter of the ILT (Instructor-Led Training), trainees should:

1. Practice the mandatory hands-on exercises on the Tekstac platform.
2. Work on the provided - Java Practice Hands-on in Eclipse hands-on exercises in Eclipse.
   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).
3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Streamline Your Health Journey
- Water Tank Capacity
- Square Series

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Basic Syntax**

- Simple Java program
- Print an integer value
- Command line arguments
- Print the input from scanner

**Object Oriented Programming**

- Object Oriented Programming
- Constructors
- Abstract Classes
- Interfaces
- Static Members
- Final Keyword
- Miscellaneous
- Factorial of a number using recursion
- Find the factorial of a given number
- See the output as 0, 1, 1, 2, 3
- Find the biggest number among 1,2,3,4,5,65,76,5,4,33,4,34,232,3,2323
- Read and write a file
- Print the below output
- Print the triangle of numbers

**Learn and Practice**

Learn Selenium with Java, Cucumber & Frameworks.

Refer section 2 in this Udemy course and complete the corresponding learnings.

**Section 2: Java Programming**

## Core Java

**Continuous Learning: ILT Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-3 | **Inheritance,Abstraction & Encapsulation** | **Inheritance:** Single inheritance, Multilevel inheritance, super keyword |
| | | **Polymorphism:** Method overloading, Method overriding |
| | | **Abstraction:** Abstract classes, Interfaces |
| | | **Encapsulation:** Access modifiers (public, private, protected), Encapsulating data |

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**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- WordZee
- Fishing competition
- Brilliant Restaurant
- Investment Calculation

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Basic Arithmetic Operations**

- Java program to swap two numbers
- Convert from Fahrenheit to Celsius
- Swap two numbers without using a third variable
- Java program to add two numbers
- Java program to find the GCD of two numbers
- Java program to find the LCM of two numbers
- Java program to print the sum of digits of a number

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**Section 2: Java Programming**

## Core Java

**Continuous Learning: ILT Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-4 | **Keywords** | **Static Members:** Static variables, Static methods, Static blocks |
| | | **this and super:** Referring current object, Accessing parent class methods |
| | | **final Keyword:** Final variables, Final methods, Final classes |
| Chapter-5 | **Arrays,Strings,StringBuffer & StringBuilder** | **Arrays:** One-dimensional array, Multidimensional array, Array traversal and operations |
| | | **Strings:**String class, Immutability, String methods: length, substring, equals, etc. |
| | | **StringBuffer & StringBuilder:** Mutability, Common methods: append, insert, delete |

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**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Dazzle Closet
- Mass Of Rocket Component
- Lego Builders
- Plan Smart
- Mythic Rhythms

**Continuous Learning: Java Practice Hands-on in Eclipse**

**<u>Control Flow Statements</u>**

- Demonstrate if…else statement
- Demonstrate nested if…else if… statement
- Demonstrate nested if…else statement
- Find odd and even numbers
- Printing the prime numbers
- Check whether a given number is Armstrong
- Check if a number is prime
- Check if a number is a palindrome
- Check if a number is an Armstrong number

**Learn and Practice**

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**Section 2: Java Programming**

## Core Java

### Continuous Learning: ILT Enablement

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-5 | **Arrays,Strings,StringBuffer & StringBuilder** | **StringBuffer & StringBuilder:** Mutability, Common methods: append, insert, delete |
| Chapter-6 | **Exception Handling** | **Types of Exceptions:** Checked exceptions, Unchecked exceptions |
| | | **try-catch Block:** Single try-catch, Multiple catch, finally block |
| | | **throw and throws:** Manually throwing exceptions, Propagating exceptions |

### Continuous Learning: Technical Enablement through Self-learning

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### Continuous Learning: Technical Hands-on through Tekstac

**Mandatory Hands-on**

- Fitness Tracker
- Array Aggregate
- Product Details

### Continuous Learning: Java Practice Hands-on in Eclipse

**Loops**

- Demonstrate for loop
- Print stars using for loop, where the number of stars printed should be equal to the row number
- Demonstrate while loop
- Print the entered number in reverse
- Demonstrate the usage of break statement inside while loop
- Print the alphabets using for loop
- Demonstrate the usage of break and continue statements inside while loop

- Demonstrate for each loop
- Print Floyd's triangle
- Print Pascal's triangle
- Print the Fibonacci series
- Printing the Multiplication table
- Find the factorial of a number
- Print the prime numbers up to a given number
- Calculate the power of a number using a while loop
- Verify whether a number is a perfect number or not
- Printing the Fibonacci series from 1 to 10
- Find the greatest of three numbers
- Print the largest two numbers from an array of given numbers

**Learn and Practice**

Learn Selenium with Java, Cucumber & Frameworks

Refer section 2 in this Udemy course and complete the corresponding learnings.

**Section 2: Java Programming**

**Additional Learning:**
**Technical Quizzes:**

- Java Operator, Control flow statement

## Day 2

## Core Java

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-6 | **Exception Handling** | **Custom Exceptions:** Creating custom exceptions |
| Chapter-7 | **Java Collections** | **Introduction to Collections:** Collection hierarchy, Collection interfaces (List, Set, Map) |
| | | **List Interface:** ArrayList, LinkedList, Vector, Stack |

**Continuous Learning: Technical Enablement through Self-learning**

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**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- College Namelist
- Babitha's App
- Alta Motors

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Method Overloading and Overriding**

- Final methods be overloaded
- Static methods be overloaded
- Final methods be overridden
- Static methods be overridden
- Overload a main method in Java
- Object u have created

**POLYMORPHISM & INHERITANCE**

- Demonstrate method overloading
- Demonstrate method overriding
- Demonstrate inheritance
- Demonstrate the use of the 'super' keyword

**Learn and Practice**

Learn Selenium with Java, Cucumber & Frameworks

Refer section 2 in this Udemy course and complete the corresponding learnings.

**Section 2: Java Programming**

## Core Java

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-7 | **Java Collections** | **Set Interface:** HashSet, LinkedHashSet, TreeSet |
| | | **Map Interface:** HashMap, LinkedHashMap, TreeMap, Hashtable |
| | | **Iterator:** Iterator, ListIterator |

**Continuous Learning: Technical Enablement through Self-learning**

After completing each chapter of the ILT (Instructor-Led Training), trainees should:

1. Practice the mandatory hands-on exercises on the Tekstac platform.
2. Work on the provided - Java Practice Hands-on in Eclipse hands-on exercises in Eclipse.
   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly

submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).

3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Arrays**

- Find the largest number
- Remove duplicates from an array
- Find the second largest number in an array?
- Sort an array using bubble sort
- Sort an array using selection sort
- Sort an array using insertion sort
- Implement binary search
- Implement linear search
- Find the sum of elements in an array
- Find the average of elements in an array
- Find the maximum and minimum elements in an array
- Remove duplicates from an array
- Find the second largest number in an array
- Find duplicate elements in a Java Array
- Find the smallest and largest numbers in a Java Array
- Java program to swap two strings without using temp or third variable
- Demonstrate creating an array
- Duplicate elements in an array of numbers
- Demonstrate creating a multidimensional array
- Print the elements of the array in reverse
- Print alternative elements in a String array
- Find the greatest number in an integer array
- Find the least number in an integer array
- Using a for loop with single-dimensional arrays
- Using a for-each loop with single-dimensional arrays

**Learn and Practice**

Java Database Connection: JDBC and MySQL

- Go through entire course.
- Implement the examples along with the author.

**Additional Learning:**
**Serial and Parallel Sorts in Java**

- https://www.geeksforgeeks.org/serial-sort-vs-parallel-sort-java/

**Streams and Optionals**

- https://www.geeksforgeeks.org/java-8-stream-tutorial/?ref=lbp

## Core Java

## Continuous Learning: ILT Technical Enablement

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-7 | **Java Collections** | **Comparable & Comparator:** Sorting with Comparable, Sorting with Comparator |
| Chapter-8 | **Java Thread Handling** | **Introduction to Threads:** Thread vs Process, Thread lifecycle |
| | | **Creating Threads:** Extending Thread class, Implementing Runnable interface |
| | | **Thread Methods:** sleep(), join(), start(), run() |
| Chapter-9 | **Java File Handling** | **Character Streams:** FileReader, FileWriter, BufferedReader, BufferedWriter |

## Continuous Learning: Technical Enablement through Self-learning

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   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).
3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

### Continuous Learning: Technical Hands-on through Tekstac

### Mandatory Hands-on

- Student Score Info
- Vintage Books Emporium

## Continuous Learning: Java Practice Hands-on in Eclipse

### String Handling

- Java program to compare two strings
- Java program to reverse a string
- Java program to count the number of vowels and consonants in a string
- Java program to find the frequency of characters in a string
- Java program to check if two strings are anagrams
- A string such that the first character is uppercase, the second is lowercase, and so on the numbers from a string and print only the alphabets
- Reverse the words in a sentence
- The frequency of words in a paragraph

### Learn and Practice

- Go through entire course.
- Implement the examples along with the author.

## Day 3

## Core Java

**Continuous Learning: Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-9 | **Java File Handling** | **File Handling:** File class, File reading and writing (FileInputStream, FileOutputStream) |
| Chapter-10 | **JDBC (Java Database Connectivity)** | **JDBC API Overview:** JDBC architecture, Driver Manager, Statement and PreparedStatement |
| | | **CRUD Operations:** Insert, Update, Delete, Select Queries |
| | | **Transactions:** Commit, Rollback, Savepoints |

**Continuous Learning: Technical Enablement through Self-learning**

After completing each chapter of the ILT (Instructor-Led Training), trainees should:

1. Practice the mandatory hands-on exercises on the Tekstac platform.
2. Work on the provided - Java Practice Hands-on in Eclipse hands-on exercises in Eclipse.
   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).
3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Animalia
- Customer Record

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Exception Handling**

- Demonstrate exception handling using try-catch
- Demonstrate the use of finally block
- Demonstrate the use of throw and throws
- Demonstrate custom exceptions

- Demonstrate the advantage of finally in Exception Handling
- Custom class which is immutable

**Learn and Practice**

Java Database Connection: JDBC and MySQL

- Go through entire course.
- Implement the examples along with the author.

## Core Java

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-11 | **Java 8 Features** | **Lambda Expressions:** Lambda syntax, Functional interfaces |
| | | **Stream API:** Stream operations (filter, map, reduce) |
| | | **Optional Class:** Avoiding NullPointerException with Optional |
| Chapter-12 | **Generics & Annotations** | **Generics:** Generic classes, methods & wildcards |
| | | **Annotations:** Built-in annotations (@Override, @Deprecated) & Custom annotations |

**Continuous Learning: Technical Enablement through Self-learning**

After completing each chapter of the ILT (Instructor-Led Training), trainees should:

1. Practice the mandatory hands-on exercises on the Tekstac platform.
2. Work on the provided - Java Practice Hands-on in Eclipse hands-on exercises in Eclipse.
   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).
3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Fit Freak
- Employee Details

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Collections Framework**

- Java program to demonstrate the use of collections (ArrayList)
- Java program to demonstrate the use of collections (HashMap)
- Java program to demonstrate the use of collections (HashSet)
- Java program to demonstrate the use of collections (LinkedList)

- Java program to demonstrate the use of collections (TreeSet)
- Java program to demonstrate the use of collections (PriorityQueue)
- Java program to demonstrate the use of collections (Stack)
- Java program to demonstrate the use of collections (Vector)

**Learn and Practice**

[Java Database Connection: JDBC and MySQL]

- Go through entire course.
- Implement the examples along with the author.

**Practice Section – Integrated Capability Test**

Once completing Udemy course, Learnings, Handson related to Java skill appear for the Practice Assessment. This assessment has been set up in platform to help you to assess and apply the concepts learnt as part of Java skill.
You can take up this assessment as a practice till your qualifier assessment for practice. The purpose of this practice assessment is to prepare you for the actual assessment and enhance your information retention. Regular practice helps reinforce what you've learned, making it easier to recall during the actual assessment.

Assessment Attempts: Unlimited
Assessment Duration: 3 hrs
No.of Questions appear in each attempt : 3

## Day 4

## Core Java

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter-12 | **Generics & Annotations** | **Annotations:** Built-in annotations (@Override, @Deprecated) & Custom annotations |
| Chapter-13 | **Design Patterns** | **Design Patterns:** Singleton, Factory, Observer, Strategy patterns |

**Continuous Learning: Technical Enablement through Self-learning**

After completing each chapter of the ILT (Instructor-Led Training), trainees should:

1. Practice the mandatory hands-on exercises on the Tekstac platform.
2. Work on the provided - Java Practice Hands-on in Eclipse hands-on exercises in Eclipse.
   Eligibility to attend stage 1 assessment: Trainee is expected to complete all the Tekstac platform Handson including Java Practice Hands-on in Eclipse. kindly

submit Java Practice Hands-on in Eclipse exercise code in notepad(as zip file in Tekstac platform for Evaluation).

3. Refer to and learn the same topics covered by the trainer on Udemy.

This approach ensures comprehensive understanding and reinforcement of the topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Booking System
- Copy Names

**Continuous Learning: Java Practice Hands-on in Eclipse**

**Collections Framework**

- Java program to demonstrate the use of collections (Deque)
- Java program to demonstrate the use of collections (LinkedHashMap)
- Java program to demonstrate the use of collections (LinkedHashSet)
- Find duplicates in a list
- Two HashMaps for equality
- Creating an ArrayList
- Creating a LinkedList
- Creating a HashSet
- Creating a LinkedHashSet

- Creating a TreeSet
- Creating a PriorityQueue
- Creating a HashMap using the Map interface
- Creating a LinkedHashMap
- Creating a TreeMap

**Learn and Practice**

Java Database Connection: JDBC and MySQL

- Go through entire course.
- Implement the examples along with the author.

**Continuous Learning: Technical Hands-on**

**Additional Learning:**

**Technical Quizzes:**

- Applying Object Oriented Concepts in java

## Core Java

**Continuous Learning: Technical Enablement through Tekstac**

**Mandatory Learning**

Java 8 Features - Streams and Optionals. Asynchronous and Parallel Programming in Java 8.
Go through web pages for learning below specific topics

Asynchronous and Parallel Programming
Java User Input (Scanner)

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Mystic Line
- Area And Volume
- The Perfect Password
- Library Management

**Additional Learning**

Java In-Depth: Become a Complete Java Engineer!
Go through only below mentioned sections 16 & 17 and implement the examples along with the author

- Section 16: Collections Framework (aka Data Structures)
- Section 17: Generics

## JDBC

**Continuous Learning: Technical Enablement**
**Learn and Practice**

Java Database Connection: JDBC and MySQL

- Go through entire course.
- Implement the examples along with the author.

**Additional Learning:**
**Technical Quizzes:**

- Quiz 3 - Collections Framework
- Quiz 4 - Advanced Java Concepts

**Note : On Day 4** - Once completing Udemy course, Learnings, all Handson & Practice assessments related to Java skill appear for the Java -Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Assess-Type-1: Code Challenge – Java - Group 1**

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt: 1

Day 5

## Core Java

**Continuous Learning: Technical Enablement**

**Learn and Practice**

Learn Selenium with Java, Cucumber & Frameworks

Java Database Connection: JDBC and MySQL

- Rehearse the sections based on need

**Note : On Day 5** - Once completing Udemy course, Learnings, all Handson & Practice assessments related to Java skill appear for the Java -Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Assess-Type-1: Code Challenge – Java - Group 2**

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt: 1

# Day 6

## Core Java

**Continuous Learning: Technical Enablement**

**Learn and Practice**

Learn Selenium with Java, Cucumber & Frameworks

Java Database Connection: JDBC and MySQL

- Rehearse the sections based on need

**Note : On Day 6** - Once completing Udemy course, Learnings, all Handson & Practice assessments related to Java skill appear for the Java - ICT Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**GenC - QAQE-TECHNICAL-JAVA TRACK - CORE JAVA SKILL WAR - SKILL BASED ASSESSMENT [101-BASICS] -LAB_ATKJE072**

Assessment Duration: 4 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Day 7

### SQL

Day 7 to 9 will be focusing on SQL Language.

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

**Continuous Learning: Technical Enablement**

Learn the basics of SQL

Relational Database Design

Refer all the sections of the Udemy course.

Go through web pages for learning below specific topic- **No SQL overview.**

Introduction to NoSQL

SQL for Beginners: Learn SQL using MySQL and Database Design

Refer sections 1 to 12, and 14 in this Udemy course and complete the corresponding learnings.

- Section 1: Course Introduction
- Section 2: Installation and Setup
- Section 3: Data Definition Language
- Section 4: More on Alter Table
- Section 5: Data Manipulation
- Section 6: Selecting from a Table
- Section 7: Selecting from Multiple Tables

Go through web pages for learning below specific topics

RANK Function

**Continuous Learning: Technical Hands-on**
**Mandatory Hands-on**

- Create Borrowing Table
- Alter Table User
- Alter Table Book
- Remove Table
- Insert User Table
- Update Record
- Delete Record

# Day 8

## SQL

**Continuous Learning: Technical Enablement**

Learn the basics of SQL

Relational Database Design

Refer all the sections of the Udemy course

Go through web pages for learning below specific topic- **No SQL overview**

Introduction to NoSQL

SQL for Beginners: Learn SQL using MySQL and Database Design

Refer sections 8, 9, 10, 11 and 12 in this Udemy course and complete the corresponding learnings.

- Section 8: Database Design
- Section 9: Creating a Cinema Booking System Database
- Section 10: Aggregate Functions
- Section 11: Subqueries
- Section 12: MySQL Functions - String Functions and Date Functions

**Continuous Learning: Technical Hands-on**
**Mandatory Hands-on**

- Diverse Selection
- Email Providers
- Book Event
- Upcoming Fair
- Routine Checks
- Security Measure
- May Birthday
- Age Demographics
- Author Detail

**Additional Learning:**

**Technical Quizzes:**
Querying Database - Operators, Aggregate, String, Date Functions

## SQL

**Continuous Learning: Technical Enablement**

Learn the basics of SQL

Relational Database Design

Refer all the sections of the Udemy course

Go through web pages for learning below specific topic- **No SQL overview**

Introduction to NoSQL

SQL for Beginners: Learn SQL using MySQL and Database Design

Refer sections 13 and 14 in this Udemy course and complete the corresponding learnings.

- Section 13: Challenges
- Section 14: Extra Information -Source code, and other stuff

**Continuous Learning: Technical Hands-on**
**Mandatory Hands-on**

- Price Analysis
- Updated Email
- Lended Books
- The Chronicles of Authors and Their Tales
- Date Format
- Exploring Users' Literary Journeys
- Active Borrowings with User and Book Details
- Same Authors
- User Borrowing Summary
- Maximum Fine Per User
- Top Users
- User Count by Title and Author

**Additional Learning:**

**Technical Quizzes:**
SQL basics with DML and DDL Statements

**Note : On Day 8** - Once completing Udemy course, Learnings, all Handson & Practice assessments related to Web UI-SQL skill appear for the SQL -Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1: Code Challenge - DDL, DML & Select (QEA)

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

Once completing Udemy course, Learnings, all Handson & Practice assessments related to Web UI-SQL skill appear for the SQL -Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1: Code Challenge - JOINS and SUBQUERIES (QEA)

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

Once completing Udemy course, Learnings, all Handson & Practice assessments related to Web UI-SQL skill appear for the SQL -Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1: Code Challenge - Scalar, Aggregate (QEA)

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Day 9

### SQL

**Continuous Learning: Technical Enablement**

Learn the basics of XML and JSON

Learn API Technical Writing: JSON and XML for Writers

Refer sections 1, 2, 3 and 4 in this Udemy course and complete the corresponding learnings.

- Section 1: Introduction
- Section 2: JSON
- Section 3: XML
- Section 4: Final Words

### Stage 1 MOCK Assessment (Qualifier) (Day 9)

Once completing Udemy course, Learnings, all Handson & Practice assessments related to Java and SQL skill appear for the Stage 1 Mock Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform. Question Pattern - 3 SBA Coding Java Questions and 2 SBA Coding approximately spend around 45 mints. for each SBA Question.

Assessment Duration: 3 hrs.
Assessment Attempts: 3
No.of Questions: 5 (Java – 3 ; SQL – 2)

## Day 10

Once completing Udemy course, Learnings, all Handson & Practice assessments related to Java and SQL skill appear for the Stage 1 Assessment (Qualifier). This will help you to assess and apply the concepts of the skill learnt in the platform. Question Pattern - 3 SBA Coding Java Questions and 2 SBA Coding approximately spend around 45 mints. for each SBA Question.

### Stage 1 Assessment (Qualifier)

Assessment Duration: 3 hrs.
No.of Questions: 5 (Java – 3 ; SQL – 2)
Passing % : 70 & above

# Schedule – Stage 2: Week 11 to 15

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

## Day 11

### Functional Testing

**Continuous Learning: Technical Enablement**

Learn the basics of Agile Fundamentals and Software Testing Life Cycle

Learn Manual Software Testing + Agile with Jira Tool

Refer section 1 and 2 in this Udemy course and complete the corresponding learnings.

**Section 1: Software Testing Introduction**

What is Software?
Types of Software's?
What is Software Testing?
What is Software Quality?
Project Vs Product
Why do we need Testing?
Error, Bug & Failure Why the software has bugs?

**Section 2: Software Testing Concepts**

SDLC
Waterfall Model
Spiral Model

V-Model
Static Testing & Dynamic Testing
Verification & Validation
White Box & Black Box Testing Methods

## GenAI (Day 11)

**Continuous Learning: Technical Enablement**

**AI Accelerate**

- **By this course you will complete GenAI self-pace learning , AI expert connect session and AI Knowledge check assessment.**

### Program completion criteria

Everyone must register for the following e-learning course on **C-Learn** and complete a KBA assessment on Moodle to successfully finish this program.

### Online learning: C-Learn

Activity Code: **ELRNG01863**

### Fundamentals of Generative AI [101-Basics]

This AI course is designed to equip learners with:

- The foundational knowledge and skills required to harness the power of Generative AI.
- The ability to identify opportunities for innovation and implementation of AI within their organizations.
- The skills to drive organizations toward a future of enhanced creativity and competitive advantage using AI techniques.

# Day 12

## Functional Testing

**Continuous Learning: Technical Enablement**

Learn the basics of Software Testing Life Cycle

Learn Manual Software Testing + Agile with Jira Tool

Refer section 2 in this Udemy course and complete the corresponding learnings.

**Section 2: Software Testing Concepts**

Static Testing & Dynamic Testing
Review, Walkthrough & Inspection
QA & QC & QE
Levels of Software Testing

Unit Testing
Integration Testing
System Testing
UAT Testing
System Testing Types
GUI Testing
Usability Testing
Functional Testing
Non-Functional Testing
Regression testing
Re-Testing
Smoke & Sanity Testing
Exploratory Testing
Adhoc Testing
Monkey Testing
Positive & Negative Testing
End-To-End Testing
Localization & Globalization/Internationalization(I18N) testing

## Day 13

### Functional Testing

**Continuous Learning: Technical Enablement**

Learn the basics of Software Testing Life Cycle

Learn Manual Software Testing + Agile with Jira Tool

Refer section 2 and 3 in this Udemy course and complete the corresponding learnings.

**Section 2: Software Testing Concepts**

Test Case Design Techniques
Equivalence Class Partitioning (ECP)
Boundary Value Analysis (BVA)
Decision Table
State Transition
Error Guessing

**Section 3: Software Testing Life Cycle (STLC)**

STLC
Test Planning

Test Design/Development
Test Execution
Defect Reporting & Tracking
Test Closure
Test Plan
Use Case Vs Test Scenario Vs Test Case
Test Case Template
RTM (Requirement Traceability Matrix)
Test Environment Setup & Test Execution
Defects/Bugs
Contents is Defect Report
Defect Classification (Severity & Priority)
Defect/Bug Life Cycle
Test Closure/When To Stop Testing?
Software Testing Metrics
QA/Testing Activities
Principles of Software Testing

**Continuous Learning: Technical Hands-on**

**Mandatory Hands-on**

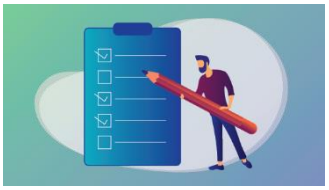
- Hotel Booking

**Deliverables Expected:**

Deliverable 1: Identify four test scenarios for the mentioned requirement
Deliverable 2: Write all the test cases using the appropriate testing techniques wherever applicable
Deliverable 3: Log the below mentioned defects effectively with all the details, relating the requirement mentioned such that the developers would understand.

## GenAI (Day 13)

### Knowledge check - Moodle



**GENERATIVE AI QUICK ASSESSMENT FOR ELEARNING QUIZ [101-BASICS]**

- This assessment is to assess the knowledge of associates on Generative AI tools and concepts at a Beginner proficiency.

Activity Code: **ATHDW335105**

## Day 14

## Functional Testing

**Continuous Learning: Technical Enablement**

Learn the basics of Software Testing Life Cycle

Learn Manual Software Testing + Agile with Jira Tool

Refer section 4 and 5 in this Udemy course and complete the corresponding learnings.

**Section 4: Software Testing Live Project (E-Commerce Domain)**

Introduction to AUT, FRS, Creating Test Plan & Test Scenarios

Test Cases & RTM (Requirement Traceability Matrix)

Test Cases, Environment Setup(Test Bed) & Deploy Application

Test Execution & Defect Reporting

**Section 5: Agile Testing Process and Working with Jira Tool**

Agile Testing Process & Terminology

Working with Jira Tool

**Continuous Learning: Technical Hands-on**

**Mandatory Hands-on**

- Students Enquiry Form

**Deliverables Expected:**

Deliverable 1: Identify four test scenarios for the mentioned requirement.

Deliverable 2: Write all the test cases using the appropriate testing techniques wherever applicable.

Deliverable 3: Log the below mentioned defects effectively with all the details relating the requirement mentioned such that the developers would understand.

**Additional Learning:**

**Technical Quizzes:**

Functional Testing

## Day 15

## Functional Testing

Once completing Udemy course, Learnings, all Handson & Practice assessments related to Functional Testing skill appear for the Functional Testing -ICT Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform. Attempts allowed to practice the assessment is 3.

Assessment Duration: 4 hrs

Assessment Attempts: 3
No.of Questions appear in each attempt : 1

Functional Testing -Assess Type 2 Skill Based Assessment.

- Read the requirements carefully of the Assessment Question.
- Write the Defect Description for the Test Case in Excel Sheet
- Submit the Test deliverables

## Day 16 to 20

### API Automation

**Continuous Learning: Technical Enablement**

Learn about API Automation

Webservices API Testing with Rest Assured API & POSTMAN 2024

**Continuous Learning: Technical Hands-on**
Mandatory Hands-on

- User Service 1 - Test Using Postman
- User Service 2 - Test Using Postman
- User Service 3 - Test Using Postman
- Cinema Hall Service 1 - Test Using Postman
- Find Winner SOAP Webservice - Test Using PostmanPipeline - compile and test

**Additional Learning:**
**Technical Quiz:**
PostMan

**Continuous Learning: Technical Hands-on**

Mandatory Hands-on

- Chapter_1_API Fundamentals
- Chapter_2_API using Postman
- Chapter_3_API in RestAssured
- Chapter_4_RestAssured
- Chapter_5_RestAssured
- Chapter_6_RestAssured
- Chapter_7_RestAssured

**NOTE**: **On Day 20,** Once completing Udemy course, Learnings, all Handson & Practice assessments related to API Postman skill appear for the Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge -** Assess-Type-1: Code Challenge 1 - PostMan
Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Schedule – Stage 2: Day 21 to 47

Day 21 to 47 will be focusing on Selenium configuration and WebDriver Basics.

Udemy learnings are recommended in the Platform to understand the fundamental concepts.

Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

**Business Aligned Project (Mini Project/ Hackathon)**

As the selenium learning starts, the project details (Mini project and the Hackathon) will be given for the learners so that they can parallel keep doing the project activities along with the rest of the learnings.

- Mini project in selenium is a great way to deepen your understanding, showcase your skills, and prepare for real-world automation tasks.
- It allows to apply theoretical knowledge of Selenium and web automation in a practical, real-world scenario. Working on a project helps you gain hands-on experience with Selenium WebDriver, locators, and other essential components.
- Building a mini project helps you understand the design and implementation of automation frameworks, such as Page Object Model (POM) and Data-Driven Testing.
- You can integrate Selenium with other tools like TestNG for test management and reporting.

**Mini Project & Hackathon – Objective**

- CI/CD Integration: Integrating your Selenium tests with CI/CD tools like Jenkins helps automate the testing process as part of the build pipeline.
- Automated Testing: Ensures that your application is tested automatically with every code change, improving software quality.
- Reporting and Logging: Generate detailed test reports that provide insights into test execution, pass/fail status, and error details.
- Logging: Implement logging to capture detailed information about test execution, which is useful for debugging and analysis.
- Reusable Code: Writing reusable and maintainable code is a key aspect of any project, and a mini project helps you practice this.
- Collaboration: It encourages collaboration and teamwork, as you can divide tasks among team members and integrate their work using Selenium.
- Exception Handling: You'll learn to handle exceptions and errors that occur during test execution, making your scripts more robust.
- Debugging Skills: Debugging skills are enhanced as you troubleshoot issues in your automation scripts etc.

The given Mini Project and the Hackathon are expected to be completed on or before the end week of the program.

Project Evaluation will be based on:

- Source Code
- Functionality Completion, Usage of Features, Code Quality
- Demo of Output

**Note:**

Mini Project is an individual team member activity. Project Requirement is available in the platform. Candidates must complete the requirement and submit the solution for evaluations by BU SME.

Hackathon is an individual activity. Project requirement is available in the platform. Candidates must complete the requirement and submit the solution for evaluations by BU SME.

## Day 21 - 23

### Automation Concepts, configuration, WebDriver Basics

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 1 | **Selenium Basics and overview** | Introduction to Browser Automation |
| | | What is Selenium and Overview |
| | | History and evolution of Selenium |
| | | Selenium Components (WebDriver vs Selenium IDE vs Selenium Grid) |
| | | Supported programming languages (Java, Python, C#, etc.) |
| | | Cross-browser and cross-platform compatibility. |
| | | Advantages and limitations of Selenium |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Refer to and learn the same topics covered by the trainer on Udemy.
2. Practice the Tekstac Platform Handson.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

Mandatory Hands-on

- Find Element by Id
- Find Element by Name

Learn the basics of WebDriver Basics

[Learn Selenium with Java, Cucumber & Frameworks]

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 17 to 25

Section 3: Selenium WebDriver

## Automation Concepts, configuration, WebDriver Basics

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 2 | **Selenium Architeture** | What is Selenium Webdriver: 1) WebDriver is one of the component in selenium. 2) WebDriver is a java interface. 3) WebDriver is an API( Application Programming interface) |
| | | Understanding the WebDriver Architecture / API methods. WebDriver, RemoteWebDriver, ChromeDriver , FirefoxDriver, EdgeDriver etc.. |
| Chapter 3 | **Setting up Selenium environment** | Installing Java Development Kit (JDK) and Eclipse IDE |
| | | Downloading Selenium WebDriver |
| | | Configuring Selenium WebDriver with Eclipse |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning)hands-on exercises provided in the local environment.
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 2_Handson
- Chapter 2_PPT Learning Ref.Content
- Chapter 2_Video Learning Ref.Content

- Chapter 3_Handson
- Chapter 3_PPT Learning Ref.Content
- Chapter 3_Video Learning Ref.Content

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 17 to 25

Section 3: Selenium WebDriver

## Automation Concepts, configuration, WebDriver Basics

**Continuous Learning: Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 4 | **Selenium WebDriver** | Locating GUI Elements in Application Under Test (AUT) |
| | | How to identify the locators in web page |
| | | First Selenium Webdriver Script |
| | | Launching Browsers in Selenium |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment Submit the solutions for evaluation.
3. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Find options in dropdown
- Find Radio Element

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 4_Handson

- Chapter 4_PPT Learning Ref.Content
- Chapter 4_Video Learning Ref.Content

[Learn Selenium with Java, Cucumber & Frameworks]

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 17 to 25

Section 3: Selenium WebDriver

## Automation Concepts, configuration, WebDriver Basics

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 5 | **Locating various Web elements** | Find Element by Id,Name,Link Text,Partial Link Text,Class Name,CSS ( Tag , ID , Class , Attribute , etc..) |
| | | Handling Shadow DOM in Selenium |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Find Element by Tag Name
- Handling Check Box
- Find Element by Class Name
- LinkText and PartialLinkText

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 5_Handson
- Chapter 5_PPT Learning Ref.Content
- Chapter 5_Video Learning Ref.Content[Part-1]
- Chapter 5_Video Lear/ning Ref.Content[Part-2]
- Chapter 5_Video Learning Ref.Content[Part-3]

Learn Selenium with Java, Cucumber & Frameworks

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 17 to 25

Section 3: Selenium WebDriver

**Additional Learning:**

**Technical Quizzes:**
Quiz 1 - Automation Concepts, Selenium configuration, WebDriver Basics

## Automation Concepts, configuration, WebDriver Basics

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 5 | **Locating various Web elements** | Relative Locators and Chained Locators in Selenium |
| | | Locating By Xpath (Single Slash, Double Slash , contains(), starts_with() , text() , Last()) |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Practice the Assessment.
5. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

Learn the basics of WebDriver Basics

Learn Selenium with Java, Cucumber & Frameworks

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 17 to 25.

Section 3: Selenium WebDriver

## Day 24 - 25

## Selenium Automation Techniques, Dynamic XPath

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 5 | **Locating various Web elements** | Find Element by Id,Name,Link Text,Partial Link Text,Class Name,CSS ( Tag , ID , Class , Attribute , etc..) |
| | | Handling Shadow DOM in Selenium |
| | | Relative Locators and Chained Locators in Selenium |
| | | Locating By Xpath (Single Slash, Double Slash , contains(), starts_with() , text() , Last()) |
| | | Find options in dropdown. Handle dropdown without using Select Class |
| | | Find Radio Element |
| | | Find Element by Tag Name |
| Chapter 6 | **Desired capabilities** | Desired Capabilities in Selenium WebDriver |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- CSSLocator
- AbsoluteXpathLocator
- xPathAncestor
- Working with Alerts
- Work with Javascript Excecutor

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 6_Handson
- Chapter 6_PPT Learning Ref.Content
- Chapter 6_Video Learning Ref.Content

Learn the basics of Automation Techniques and Dynamic Xpath

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 26 to 32.

Section 3: Selenium WebDriver

**Note : On Day 24 -** Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium-Web Driver skill appear for the Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1:Code Challenge - Automation Concepts, Selenium configuration, WebDriver Basics

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Selenium Automation Techniques, Dynamic XPath

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 7 | **selenium webDriver commands and Web elements interactions** | Selenium WebDriver- Commands |
| | | Text fields and buttons |
| | | Find Element VS FindElements in Selenium WebDriver - check order |
| | | Handling Canvas Elements in Selenium |
| | | Using JavaScript Executor in Selenium |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Handling RegEx Selenium
- Drag and Drop with Slider and Actions and wait
- Selenium – ScreenShot

- Selenium - DatePicker(Actions Class)
- FindElements

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 7_Handson
- Chapter 7_PPT Learning Ref.Content
- Chapter 7_Video Learning Ref.Content

Learn the basics of Automation Techniques and Dynamic Xpath

Learn Selenium with Java, Cucumber & Frameworks

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 26 to 32.

Section 3: Selenium WebDriver

## Selenium Automation Techniques, Dynamic XPath

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 8 | **WebDriver Actions** | Mouse and keyboard actions |
| | | Drag and drop |
| | | Handling frames and windows |
| | | mouse hover (tool tip) in Selenium |
| | | Handling tabs & cookies |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Handling ToolTip
- Working with different XPath conditions
- PurchaseApp iframe
- Multiple Window
- Selenium - Implicit Wait
- Selenium - Fluent Wait

**Continuous Learning: Technical Hands-on**

**Best Practices- Real Time Technical Hands-on**

- Desired Capabilities
- Shadow_DOM_Scenario1
- Shadow_DOM_Scenario2
- Relative Locators and Chained Locators in Selenium

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 8_Handson
- Chapter 8_PPT Learning Ref.Content
- Chapter 8_Video Learning Ref.Content

Learn the basics of Automation Techniques and Dynamic Xpath

Learn Selenium with Java, Cucumber & Frameworks

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 26 to 32.

Section 3: Selenium WebDriver

## Selenium Automation Techniques, Dynamic XPath

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 9 | **Multiple windows & frames** | Switching between windows |
| | | Switching to frames & iFrames |
| | **WebDriver Waits** | Implicit waits |
| | | Explicit waits |
| | | Fluent waits |

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 10 | **Selenium Automation Techniques** | Checkbox Handling and Form Submission |
| | | Locating Web Element Attributes using CSS Selector |
| | | Locating Web Element Attributes using Absolute XPath Locator |
| | | Identifying Ancestors of Web Elements |
| | | Working with alerts |
| | | Working with Java script executor |
| | | Working with Regular expression |
| | | Working with Drag and Drop and Slider |
| Chapter 11 | **Advanced WebDriver techniques** | Selenium - ScreenShot |
| | | Handling JavaScript/window Alerts |
| | | Headless browsers and drivers in Selenium |
| | | Handling Dynamic Elements in Selenium |
| | | 1) get methods , 2) conditional methods, 3) browser methods, 4) navigational methods, 5) wait methods |
| | | How to Find All/Broken links using Selenium Webdriver |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Take Up the Assessment.
5. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 9_Handson
- Chapter 9_PPT Learning Ref.Content
- Chapter 9_Video Learning Ref.Content

- Chapter 10_Handson
- Chapter 10_PPT Learning Ref.Content
- Chapter 10_Video Learning Ref.Content

- Chapter 11_Handson
- Chapter 11_PPT Learning Ref.Content
- Chapter 11_Video Learning Ref.Content

**Continuous Learning: Technical Hands-on through Tekstac**

**Best Practices- Real Time Technical Hands-on**

- Relative Locators and Chained Locators in Selenium_Scenario 1
- Relative Locators and Chained Locators in Selenium_Scenario 2
- Relative Locators and Chained Locators in Selenium_Scenario 3
- Relative Locators and Chained Locators in Selenium_Scenario 4

Learn Selenium with Java, Cucumber & Frameworks

Refer section 3 in this Udemy course and complete the corresponding Subtopics from 26 to 32.

Section 3: Selenium WebDriver

**Additional Learning:**

**Technical Quizzes:**
Quiz 1 - Selenium Automation Techniques, Dynamic Xpath

## Day 26 – 30

You will be focusing on Selenium WebDriver with POM and ApachePOI

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

## Selenium Webdriver With POM and ApachePOI

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 12 | **Calendar using action** | Selenium - DatePicker(Actions Class) |
| | **Apache POI** | Apache POI - Read Operation : Excel Read Operation |
| | | Apache POI - Write Operation: Excel Write Operation |
| | | Applying POI POM- Flight reservation |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Excel Read Operation
- Excel Write Operation
- Applying POI - Flight reservation

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 12_Handson
- Chapter 12_PPT Learning Ref.Content
- Chapter 12_Video Learning Ref.Content

Learn the basics of WebDriver with POM and ApachePOI

Learn Selenium with Java, Cucumber & Frameworks

Refer section 4 in this Udemy course and complete the corresponding learnings.

Section 4: Apache POI - Data Driven Testing using MS Excel

## Selenium Webdriver With POM and ApachePOI

Learn the basics of WebDriver with POM and ApachePOI

Learn Selenium with Java, Cucumber & Frameworks

Refer section 4 in this Udemy course and complete the corresponding learnings.

Section 4: Apache POI - Data Driven Testing using MS Excel.

**Continuous Learning: Technical Hands-on through Tekstac**

Mandatory Hands-on

- POM with Page Factory Model

**Continuous Learning: Technical Hands-on**

**Best Practices- Real Time Technical Hands-on**

- Mouse_Keyboard_Actions_Cookie_Scenario 1
- Mouse_Keyboard_Actions_Cookie_Scenario 2
- Mouse_Keyboard_Actions_Cookie_Scenario 3
- Mouse_Keyboard_Actions_Cookie_Scenario 4
- Mouse_Keyboard_Actions_Cookie_Scenario 5
- Mouse_Keyboard_Actions_Cookie_Scenario 6

- Mouse_Keyboard_Actions_Cookie_Scenario 7

**Note : On Day 27-** Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium – Xpath skill appear for the Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1:Code Challenge - Selenium Automation Techniques, Dynamic Xpath

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Selenium Webdriver With POM and ApachePOI

**Continuous Learning: Technical Enablement**

Learn the basics of WebDriver with POM and ApachePOI

Learn Selenium with Java, Cucumber & Frameworks

Refer section 4 in this Udemy course and complete the corresponding learnings.

Section 4: Apache POI - Data Driven Testing using MS Excel

## Project – Mini Project Case Study (Day 26 – 33)

**Overall Duration:** Should start your mini project parallel with the Stage 2 Selenium Automation learnings and practice daily.

The outcomes of doing **Mini Project** are:

- Enables learners to know on the environment setup
- Any web application is taken, and learner try to automate given scenario using Selenium APIs
- Exhibits learner skills on automation of real time applications for smaller requirement.

**Note : On Day 30** - Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium – Apache POI skill appear for the Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge**
Assess-Type-1:Code Challenge - Selenium Webdriver with POM and ApachePOI

Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Day 31 – 33

## Automation Testing - Selenium with TestNG

You will be focusing on Selenium with TestNG

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 13 | **TestNG Concepts** | TestNG Assertions |
| | | Introduction to TestNG |
| | | Creating TestNG test cases |
| | | TestNG annotations and assertions |
| | | Data-Driven Testing in TestNG |
| | | Running Tests in Parallel using TestNG |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

Mandatory Hands-on

- TestNG Assertions
- TestNG with two test classes
- Contact Book- POM structure
- TestNG Annotation With Priority
- TestNG Dependency

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 13_Handson
- Chapter 13_PPT Learning Ref.Content
- Chapter 13_Video Learning Ref.Content

Learn the basics of Selenium with TestNG

Learn Selenium with Java, Cucumber & Frameworks

Refer section 5,6,7 in this Udemy course and complete the corresponding learnings.

Section 5: TestNG Framework for Selenium

Section 6: Page Object Model

Section 7: Hybrid Driven Framework Development with Project (eCommerce Application)

## Project – Mini Project Case Study

- Integrate the mini project.

## GenAI

### Additional Learning: Technical Enablement

Try to complete the following additional Udemy courses (Optional) to learn more about GenAI and ChatGPT.

| Courses | Duration (in hrs.) | What you'll learn |
|---|---|---|
| Generative AI for Beginners | 3.5 | ✓ Detailed understanding of Generative AI<br>✓ Key concepts - LLM, Embeddings, Prompt Engineering, Fine Tuning<br>✓ Industry use cases and ideas that can be implemented<br>✓ Hands-on experience, creating a chatbot<br>✓ Future trends and how to stay relevant in post-GenAI world.<br>✓ Roadmap for continuous learning |
| Intro to ChatGPT and Generative AI | 2 | ✓ How to prompt ChatGPT effectively<br>✓ How to skyrocket productivity using AI<br>✓ Understand Generative AI and the underlying technology<br>✓ Grasp the importance of AI ethics |

## Automation Testing - Selenium with TestNG

### Continuous Learning: ILT Technical Enablement

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 13 | **TestNG Concepts** | Multi-browser testing using TestNG* |
| | | Rerun failed tests* |
| | | Set Test priority in TestNG |
| | | Dependency in TestNG |
| | | Soft /Hard Assertion in TestNG |
| | | TestNG Report Generation in Selenium WebDriver* |
| | | Customize, PDF & Email TestNG Reports in Selenium WebDriver* |
| | **TestNG Class** | TestNG with two test classes |
| | **Data driven** | Data driven from XML + POM : Contact Book- POM structure |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

Mandatory Hands-on

- Cargo Shipping
- Shopify Registration
- XMLParsing -1
- XMLParsing -2
- XMLParsing -3

Learn the basics of Selenium with Datasource XML Parsing (With XML & JSON)

Learn API Technical Writing: JSON and XML for Writers

Refer sections 1, 2, 3 and 4 in this Udemy course and complete the corresponding learnings.

Section 1: Introduction

Section 2: JSON

Section 3: XML

Section 4: Final Words

Rehearse the below Lend a hand enablement given in platform

- XMLParser_Enablement

Followed by refer “Lend-a-Hand” code template with solution

- XML Parsing

## Project – Mini Project Case Study

- Integrate the mini project.

## Automation Testing - Selenium with TestNG

**Continuous Learning: Technical Enablement**

Learn the basics of Selenium with Datasource JSON Parsing (With XML & JSON)

Rehearse the below Lend a hand enablement given in platform

- JSONParsing_Enablement

Followed by refer “Lend-a-Hand” code template with solution

- JSON Parsing
- Json Solution Explanation

**Continuous Learning: Technical Hands-on through Tekstac**

Mandatory Hands-on

- JSONParsing – 1
- JSONParsing – 2
- JSONParsing – 3

**NOTE**: **On Day 32,** Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium – TestNG skill appear for the Code Challenge Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Code Challenge -** Assess-Type-1:Code Challenge - Selenium with TestNG
Assessment Duration: 2 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## MOCK Evaluation through AI BOT (Day 33)

This is an auto-scheduled, AI-driven mock interview, intended to be taken before the interim evaluation. You will receive an auto-scheduled email notification three hours prior to the evaluation.
Details:

- Platform: Mail-driven platform
- Scope: AI will ask questions based on everything you have learned up to date
- Duration: 1.5 hours
- Questions: 15 skill-based Coding questions

Once you complete the evaluation, AI will provide feedback on your performance. This helps you to appear for Interim Evaluation.

## Project – Mini Project Case Study

- Integrate the mini project.

**Deliver your project and get the review comments from SME.**

## Day 34 & 35

**Evaluation:**
**Interim Project Evaluation + Technical Evaluation**

## Day 36 to 40

## Automation Framework

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 14 | **Test Automation Frameworks** | Introduction to Automation Frameworks |
| | | Data-Driven Testing in Selenium |
| | | Keyword-Driven Testing Framework in Selenium |
| | | Page Factory |
| | | Building a Modular Testing Framework in Selenium |
| | | Hybrid Framework |
| | **Design Patterns (POM)** | Understanding Page Object Model (POM) in Selenium |
| | | Creating Page Classes in Selenium |
| | | Implementing Page Factory in Selenium |
| | | Design Patterns in Automation using Selenium (Singleton, Factory etc.) |
| Chapter 15 | **Test Data Handling** | Reading and Writing Data to Files (e.g., Excel, CSV , XML, JSON) using Java |
| | | Test Data Parameterization in Selenium |
| Chapter 16 | **Test Report and Test Log** | Generating Detailed Test Reports (Extent Reports, Allure Reports) |
| | | Screenshot Capture Strategies in Selenium |
| | | Custom Logging with Log4j in Selenium |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.

4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 14_Handson
- Chapter 14_PPT Learning Ref.Content
- Chapter 14_Video Learning Ref.Content[Part-1]
- Chapter 14_Video Learning Ref.Content[Part-2]
- Chapter 14_Video Learning Ref.Content[Part-3]

- Chapter 15_Handson
- Chapter 15_PPT Learning Ref.Content
- Chapter 15_Video Learning Ref.Content

- Chapter 16_Handson
- Chapter 16_PPT Learning Ref.Content
- Chapter 16_Video Learning Ref.Content[Part-1]
- Chapter 16_Video Learning Ref.Content[Part-2]
- Chapter 16_Video Learning Ref.Content[Part-3]

## Project - Best Practices- Mandatory Real Time Technical Project

- Integrate the Real Time Technical  Project.

# Day 41 To 47

## Devops

You will be focusing on Devops (Maven , Git, Jenkins, Grid).

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-on and Practice Case studies as recommended below.

**Click Here to View the BU Mandatory Technical Learning and Handson Document.**

**Continuous Learning: ILT Technical Enablement**

| Chapter | Chapter Name | Topic |
|---|---|---|
| Chapter 17 | **Selenium Grid** | Introduction to Selenium Grid |
| | | Setting up Selenium Grid |
| | | Running tests on Selenium Grid |
| | | Achieving Parallel Execution in the Cloud |
| | | Setting up selenium grid in a docker/K8S container |
| | **Distributed Execution** | Running Tests on Cloud-Based Selenium Grids (e.g., Sauce Labs, Browser Stack) |
| | | Achieving Parallel Execution in the Cloud |
| | **Maven** | Introduction to Maven |
| | | Creating and Managing Maven Projects |
| | | Maven Build Lifecycle (e.g., clean, compile, test, package |
| | **Git Version Control** | Introduction to Version Control |
| | | Git Fundamentals (Commits, Branches, Merges) |
| | | Git Workflow (Pull Requests |
| | | Managing Code Repositories on GitHub or GitLab |
| | **Jenkins CI Systems** | Introduction to CI/CD and DevOps |
| | | Jenkins Overview and Jobs Configuration |
| | | Integrating Selenium Tests into Jenkins Pipelines |
| | | Groovy Script Introduction and Syntax |

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Git Config
- Clone Repo
- Add, Commit and Push
- Pull And Merge
- Merge - Resolve Conflict
- Git Tags
- Build Web Application
- Compiling Executing Java using POM

Additional Hands-on

- GIT installation & commands implementation
- Install Jenkins and Creation of new job

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 17_Handson
- Chapter 17_PPT Learning Ref.Content
- Chapter 17_Video Learning Ref.Content[Part-1]
- Chapter 17_Video Learning Ref.Content[Part-2]
- Chapter 17_Video Learning Ref.Content[Part-3]
- Chapter 17_Video Learning Ref.Content[Part-4]
- Chapter 17_Video Learning Ref.Content[Part-5]

Learn Devops and Grid

Learn Selenium with Java, Cucumber & Frameworks

Refer sections 8 and 10 in this Udemy course and complete the corresponding learnings.

Section 8: CI - Maven, Git, Github & Jenkins
Section 10: Bonus Tips
Section 13: Docker - Bonus Tips

## Devops

**Continuous Learning: Technical Enablement through Self-learning**

After the Trainer-Led Master session on Selenium chapter topics, trainees should:

1. Practice Tekstac Platform Handson and Review respective BU Training Content chapter's PPT and video learning content.
2. Practice DLE (Daily Learning) hands-on exercises provided in the local environment.
3. Submit the solutions for evaluation.
4. Refer to and learn the same topics covered by the trainer on Udemy.

This ensures a thorough understanding and application of the Selenium chapter topics.

**Continuous Learning: Technical Hands-on through Tekstac**

**Mandatory Hands-on**

- Junit With Maven
- Maven Directory Structure
- Maven Shade Plugin

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 18_Handson
- Chapter 18_PPT Learning Ref.Content

- Chapter 19_Handson
- Chapter 19_PPT Learning Ref.Content

Additional Hands-on

- Mavenization using Eclipse M2E plugin Options and CLI command

Learn Devops and Grid

Learn Selenium with Java, Cucumber & Frameworks

Refer sections 8 and 10 in this Udemy course and complete the corresponding learnings.
Section 8: CI - Maven, Git, Github & Jenkins
Section 10: Bonus Tips
Section 13: Docker - Bonus Tips

## Devops

**Continuous Learning: Technical Enablement through Self-learning**

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**Continuous Learning: Technical Enablement**

Learn Devops and Grid

Learn Selenium with Java, Cucumber & Frameworks

Rehearse the section based on need

**Continuous Learning: Technical Hands-on**

Mandatory Hands-on

- Maven App to access External Service
- Capital Service
- Build project based on another project
- Build Maven Project (Using Freestyle Project)
- Pipeline - compile and test
- Setup Grid and parallel execution

**BU Training Content - Chapter Wise [BU Mandatory Technical Learning and Handson]**

- Chapter 20_Handson
- Chapter 21_Handson
- Chapter 21_PPT Learning Ref.Content
- Chapter 22_Handson
- Chapter 23_Handson
- Chapter 24_Handson

**NOTE**: **On Day 43 -** Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium skill appear for the MOCK ICT Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

**Integrated Capability Test (ICT) - SELENIUM MOCK**

Assessment Duration: 2 hrs.
Assessment Attempts: 1
No.of Questions appear in each attempt : 1

**SELENIUM Assess-Type-2: Integrated Capability Test (ICT)**

**NOTE**: **On Day 45**, Once completing Udemy course, Learnings, all Handson & Practice assessments related to Selenium skill appear for the Selenium ICT Assessment. This will help you to assess and apply the concepts of the skill learnt in the platform.

Assessment Duration: 4 hrs.
Assessment Attempts: 3
No.of Questions appear in each attempt : 1

## Project Deliverable (Hackathon Project) (Day 41 – 47)

**Overall Duration:** Should start Hackathon project end of Automation Framework milestone and continue doing till Digital Technologies.

The outcomes of doing **Hackathon** are:

- Explore the Innovative Implementations.
- Implement Best practices such as creating **Smoke and Regression suite**.
- Implement **Maven** on the created automation test scripts
- Explore **Jenkins** to execute the test scripts periodically on Selenium Grid.
- Explore Selenium **Grid** to run test scripts on different platforms and against different browsers.

Integrate Jenkins with version controller (**GIT**) and scheduled builds to run automatically.

## MOCK Evaluation through AI BOT (Day 47)

This is an auto-scheduled, AI-driven mock interview, intended to be taken before the Final evaluation. You will receive an auto-scheduled email notification three hours prior to the evaluation.

Details:

- Platform: Mail-driven platform
- Scope: AI will ask questions based on everything you have learned up to date
- Duration: 1.5 hours
- Questions: 15 skill-based Coding questions

Once you complete the evaluation, AI will provide feedback on your performance. This helps you to appear for Final Evaluation.

## Project – Hackathon (Day 47)

**Deliver your project and get the review comments from SME.**

The deliverables of the Hackathon will be evaluated by the BU SME.
Project Evaluation will be based on:

- Source Code
- Functionality Completion, Usage of Features, Code Quality
- Demo of Output

# Day 48 - 50

### Evaluation:
### Final Project Evaluation + Final Technical Evaluation


### What is Final Evaluation?

The Final Evaluation will be conducted to certify whether a GenC is eligible to enter into the BU or not. The skill of a GenC will be gauged on the application development and overall technical knowhow towards the end of GenC Training.

Tech SME from BU will be conducting the final tech evaluation. As a fallback, the project mentor can also steer this activity.

The final evaluation will be conducted as two phases. They are the following

1. **Final Technical Evaluation**
2. **Final Project Evaluation**

The mode of these evaluations will be any one of the

lowing:

- F2F(face to face)
- Video Based

### 1. Final Technical Evaluation (FTE)

The BU Mentor will interview the GenC on various skills achieved throughout the training program and put a score which will be considered for the final PHS of the GenC.

### 2. Final Project Evaluation (FPE)

In this evaluation, the BU Mentor will be verifying the skills of a GenC on a project perspective. End of this evaluation, the BU Mentor will score the GenC's work based on various evaluation criterions.

## How to learn each day?

Each day has a set of learning objectives. These learning objectives can be met by going through the Udemy courses and by completing the hands-on exercises mentioned in the daily plan.

The below strategies will help you decide the learning approach.

## Learning Strategy & Approach

Find below few imaginary profiles. For each of these profiles we have defined a recommended learning approach. This is not an exhaustive list. The approaches below might help invent a new way of learning.

**Profile #1**

### Harry Reacher

**Engineering Discipline:** Electronics

**Skills:** Python, Ruby on Rails, nginx

**Project:** Mining Crime Data to get Route Cause Insights

**Learning Approach to Programming Languages:** I do not want to waste my time learning. I am more practice oriented. I want to work on the problem immediately

### What will work for me?

- Directly complete hands on exercises
- Refer Internet or Udemy Courses
- If hands on are implemented early, clarify your friends questions and troubleshoot their issues

**Profile #2**

### Olivia Richards

**Engineering Discipline:** Computer Science

**Skills:** Java, C, C++

**Project:** Library Management System

**Learning Approach to Programming Languages:** I have interest, but I don't know where to start.

### What will work for me?

- Go through the recommended Udemy Course
- Try completing the hands on exercises
- Get your clarifications solved with help from Tech SME
- Get help from other learners in your batch whom had already completed

**Profile #3**

### Greg Anderson

**Engineering Discipline:** Civil

**Skills:** C

**Project:** Fiber reinforced concrete

**Learning Approach to Programming Languages:** I am scared of programming languages. I haven't got my hands dirty with coding

### What will work for me?

- Go through the recommended Udemy Course
- Implement the coding along with the author of the Udemy Course
- Try completing the hands on exercises
- Clarify queries with SME
- Troubleshoot programming issues with help from SME or learner from your classroom whom had already completed

## FAQ

1. Who can participate in this program?

   Students who have enrolled for Full Internship Program (or) the Cognizant on-boarded GEN Cs can participate in this program.

2. Is there any pre-learning I should do?

   No. This program is open to all students from any academic discipline.

3. How will I know my RAG status?

   It will be shown to you in the GEN C learn Platform, in your Home Page.

4. Whom do I reach out in case of any queries?

   Coach is your point of contact.

5. What is the significance of Hands-on in the overall learning journey?

   Hands-on focuses on specific topics in a Skill, which you can try and execute in the Platform. Group of such Hands-on exercises will be packaged together as a Code Challenge. This Code Challenge will allow you to benchmark your skills in the learning journey. Hands On/ Code Challenges/ ICT are learning components which will help you in understanding the skills better.

6. What is Code Challenge?
   A problem statement will be provided to you and you need to solve it using a single skill.

7. What is Integrated Capability Test (ICT)?
   A case study problem statement will be provided to you, that you may need solve using the combination of Skills learnt in the given stage.

8. How many attempts are provided for the Coding challenge and ICTs? Is it open all the time for practice?
   The Coding challenges and ICTs are open and there are 3 attempts to take them up.

9. What is the entry criteria for qualifier?
   A minimum of 70% hands-on completion and attempt in the CC & ICT is the eligibility criteria for qualifier.

10. What skills are covered in the qualifier?
    The skills of Stage 1 are covered in the qualifier. Only ONE attempt is provided to clear with a minimum score of 70%

11. What if I fail in the Interim evaluation?
    Your coach will notify your performance in the Interim evaluation. However you can continue with the learning.
12. How many chances will I get in the Final evaluation?
    You'll get 2 chances in the Final evaluation which covers ALL the skills in the learning journey.

13. Whom do I reach out in case of any queries?
    Coach is your point of contact.