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Celebrating 20 Years

L&OD - Fresher Induction

ILT – Course Catalogue

A Larsen & Toubro
Group Company

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TSL

Module Details

Module Name	Duration (Days)
RDBMS	2
Core Java	2
Manual Testing	3
Selenium Testing	6
Jira, Cucumber, API Testing	3
DevOps	1
Project	5
Project Gladiator SME Evaluation	1
Communication Session	3
Total Duration	**26**

Assessment Framework

Training	Topic	No. of Tests	Passing criteria	No. of Re-attempts allowed	Remarks
Boot Camp Phase	RDBMS, Core Java, Manual Testing	1	>= 65%	1	Trainees will be separated if they are not able to clear retest attempt with average score of 65% and above
Specialization Phase	Selenium, JIRA, Cucumber, API Testing and DevOps	1	>= 65%	1	Trainees will be separated if they are not able to clear retest attempt with average score of 65% and above
Project Gladiator	Team + Individual Performance	1	>=65%	1	Trainees will be separated if they are not able to clear the project re-evaluation with average score of 65% and above

Course Content

Bootcamp Phase

Communication Training (3 Days)
- o Spread across 3 weeks / 1 day per week

RDBMS
Duration: 2 Days

RDBMS
- o Overview of RDBMS and SQL
- o Key aspects of Normalization

- o Case-study:
    - Normalizing the schema from a De-normalized structure provided
    - Designing the schema in the Database
    - Applying various constraints and checks
    - Implementing SELECT queries in the above schema
- o Introduction to PL/SQL
    - Understanding the need for writing pl/sql blocks
    - Different ways of writing PL/SQL blocks
    - Implementing stored procedures and functions
    - Writing business logic for the case-study

Core Java
Duration: 2 Days

Core Java
- o Overview of Java
- o Key features of Java programming language
- o Understanding JDK, JRE, JVM, GC and others
- o Object Oriented Programming
- o Exception handling
- o Collections Overview
- o JDBC
- o Case-study:
    - Designing a Student Management System from scratch
    - Implementing OO concepts, exception handling, collections and JDBC in the above case-study

Manual Testing
Duration: 3 Days

- o Introduction to Testing
    - What is testing?
    - Why to do Testing?
    - Why Testers are required?
    - Software Development Life Cycle & Types
    - Software Testing Life Cycle (Fundamental Test Process)
    - Cost of Quality
    - QA, QC & QMS
- o Verification & Validation
    - Difference between Verification & Validation
    - Techniques of Verification
    - Techniques of Validation / Levels of Testing
    - Life Cycle Testing
    - V-model
- o Types of Testing
    - Testing Related to Change
        - ReTesting/ Confirmation Testing

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- - - Regression Testing
  - Testing Related to Function
    - Smoke Testing
    - Sanity Testing
  - Testing Related to Non-Function
    - Performance Testing
    - Compatibility Testing
    - Usability Testing
    - User Interface Testing
- Test Planning
  - What is need of Test Planning
  - When to start Test Planning
  - IEEE 829 format of Test Planning
- Test Design Techniques
  - Black Box Test Design Techniques
  - White Box Test Design Techniques
- Defect Management
  - What is Defect & its Type
  - Severity & Priority of Defect
  - Defect Life Cycle
  - Defect Reporting Attributes
  - Tools for Defect Reporting

Mini Project + Assessment

Specialization Phase

Selenium
Duration: 6 Days

Introduction to Selenium
- Selenium overview
- Selenium Fundamentals
- Selenium components - IDE, Server, Grid
- Difference Between RC and WebDriver

Locators in Selenium
- Concept of DOM and Webtables
- Selenium Locator Strategies
- Locator and DOM related tools
- Structure dependent and attributes based locators
- Installing and Configuring Selenium WebDriver in Eclipse
- Various flavors Chrome, IE and Firefox

Handling
- Handling JavaScript alerts()
- Windows
- iframes

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Handling AJAX and Test Synchronization using
- o Implicit wait
- o Explicit wait

WebDriver in various scenarios
- o Handling common objects such as Checkbox, Radio buttons, Dropdown,Autocomplete
- o Dealing with mouse hover in WebDriver
- o WebDriver user defined actions and keyboard entries
- o Controlling browser attributes and navigation
- o Validating on CSS attributes of objects
- o Find broken images/links in website
- o Reading test related variables from properties file
- o JavaScript action for scroll

Data-Driven Testing:
- o Using Excel
- o Using DataBase
- o Using CSV

Page Object Model & Page Factory
- o Page Factory and POM for better maintenance and reusability
- o Combing Page Factory with Data driven test
- o Updating the existing tests in POM model

Maven
- o Maven Introduction
- o Installing Maven
- o Adding dependencies using pom.xml

TestNG & Junit:
- o Using TestNG to
  - Selectively run tests,
    - Run tests in parallel on different browsers
    - Grouping & prioritizing tests
    - Using data provider with excel integration to read data for data parameters in tests
    - Test Fixtures and Annotations
    - Taking screenshots and trigger on error
    - TestNG Test Suites
- o Using Junit to**:**
    - Create Junit Test
    - Creating Junit Test Suites

Reports
- o TestNG Report
- o Using Extent reports for reporting results including writing test step results to the report

Testing Frameworks for Selenium:
- o Data-Driven Testing
- o Keyword Driven Testing
- o Hybrid Framework concepts

- o Difference between Keyword driven and Hybrid Frameworks
- o Reporting results back to the framework

Cucumber, JIRA, API
Duration: 3 Days

Selenium & BDD with Cucumber
Cucumber
- o What is Cucumber Testing Tool?
- o Downloading & Installing cucumber
- o What is Feature File & Step Definition
- o What is Gherkin & write Gherkin Test in Cucumber
- o Writing Cucumber Script
- o Selenium Integration with Cucumber BDD
- o Passing Parameters in cucumber Scripts
- o Performing Data-Driven Testing in Cucumber-Selenium

API Testing:
- o Introduction to Web Service & API
- o Tools available for API Testing
  - • Postman
    - ▪ Download & Install PostMan
    - ▪ Postman Navigation
    - ▪ Create Requests in Postman
    - ▪ Passing Parameters in PostMan
    - ▪ Basic Authentication in PostMan
    - ▪ Environment Variables & Collections in PostMan
    - ▪ How to debug & Run from command Line
  - • Rest Assured
    - ▪ Configuring Eclipse with Rest-Assured
    - ▪ Making Simple Get Requests
    - ▪ Validate Response status code, Header, & Body using Rest Assured
    - ▪ Making Post Request using Rest Assured
    - ▪ Authentication & Authorization
    - ▪ JSON basic

JIRA
- o Introduction to Jira & How to use Jira on Cloud
- o How to Create Project & How to add users in Jira
- o How to create Epic & User stories
- o Create Sprint in JIRA & Adding User stories to sprint
- o Create Test Cycles, Update Test Cases & checking Test Reports

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DevOps
Duration: 1 Days

Overview of Dev-Ops & Git
- o Application Lifecycle Management
- o Traditional Responsibility Silos
- o What is DevOps
- o Developers Role
- o Testers Role
- o Operations Role
- o Continuous Integration
- o Continuous Deployment
- o The Workflows:
- o Continuous Integration
- o Continuous Build
- o Continuous Delivery & Deployment

DevOps – Git
- o Git Overview
- o Git Installation
- o Git Basics
- o Git Merge
- o Git Branches
- o Git Workflows
- o Git Hosting

DevOps - Deployment (Maven)
- o Maven Installation
- o Maven Basics
- o Maven Demo
- o Maven Eclipse Demo
- o Maven lifecycle
- o Maven Repositories
- o Multi-Module projects
- o Maven Summary
- o Create a maven project

DevOps – Jenkins
- o Jenkins Installation
- o Jenkins Basics
- o Jenkins Distributed Builds
- o Create Jenkins Job

Assessment

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Project Gladiator Phase
Duration: 5 Days

Project Gladiator

Project Gladiator Evaluation