

## Generation Cognizant (GenC) Student Handbook (ADM Standard - Java - Suite)



### Why do we need this Academy enablement Program?

Academy enablement program engages young talents with a comprehensive learning pathway, giving these millennials an opportunity to interact with Subject Matter Experts (SME) and understand the corporate environment and groom themselves even before they join us.

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 3 Stages:

- Stage 1 – Programming Basics(6 Weeks)
- Stage 2 – Advanced Programming(5 Weeks)
- Project Simulation (1 Week)

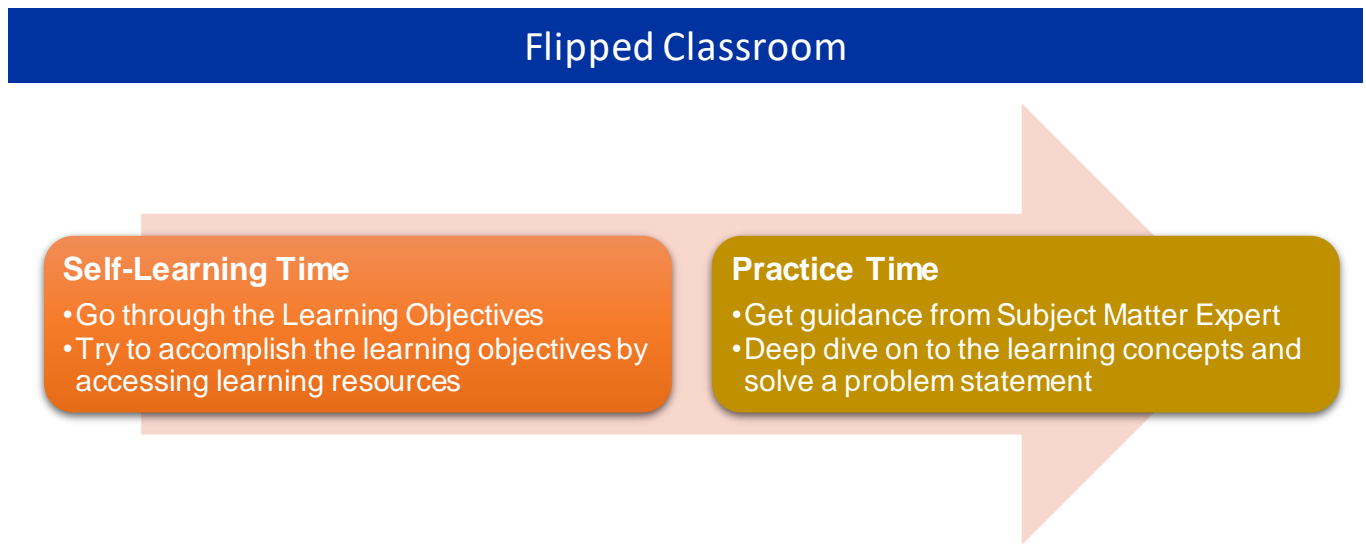
### Program Highlights

- 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.

# 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.



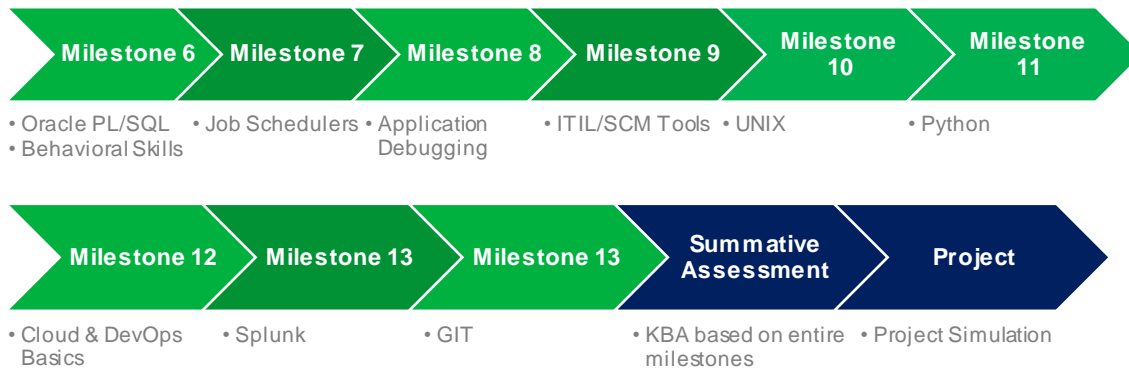
## Recommended Program Sequence

The learning journey starts with **5 days Icebreaker sessions** followed by a technical learning. The learning journey contains **2 stages**, followed by a **Project Simulation**.

- Stage 1 – Programming Fundamentals
- Stage 2 – Advanced Programming
- Project Simulation



## Stage 2 - Advanced Programming



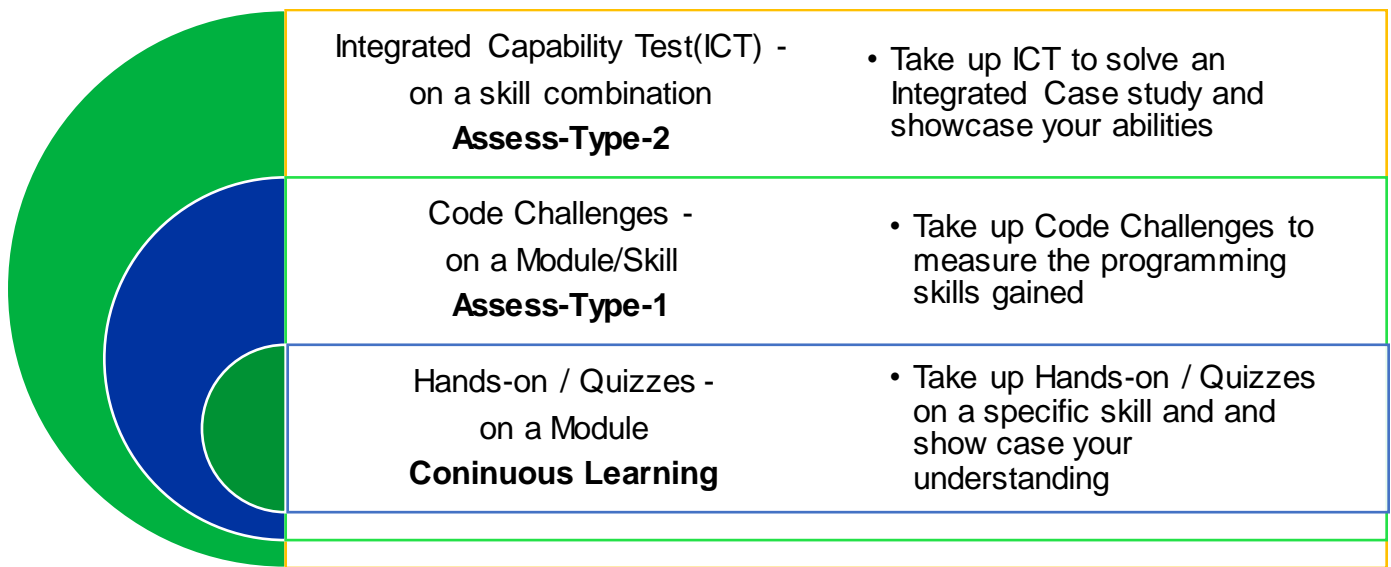
## Key Learning Components of the Program

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

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

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

You have to score a minimum of 70% in each of the key components.



**Note:** Throughout the learning path, all the Mandatory Learning Components will attribute to the Performance Health Score. Additional Learning Components will help you to enhance your expertise level.

## Icebreaker



Ice breaker 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.

## Icebreaker Session

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...

## Stage 1 - Milestone 1: Software Engineering Basics



**Overall Duration:** (1 Day)

This part of Stage 1 learning will be focusing on Software Support and Maintenance.

Udemy learnings are recommended in the Platform to understand the fundamental concepts. In addition to this, you can also learn from any other sources as they are mentioned in this handbook.

### Day 1

#### Software Support and Maintenance

##### Behavioral Training

- Behavioral Session

##### Continuous Learning: Technical Enablement



[Software Engineering 101: Plan and Execute Better Software.](#)

- Learn the sections listed below in this Udemy course and take up the Quizzes in each section in order to check your understanding about the subject.
  - Section 2: Software Lifecycle
  - Section 3: Requirements and Specifications
  - Section 4: Design: Architecture
  - Section 5: Design: Modularity
  - Section 6: Implementation and Deployment
  - Section 7: Testing
  - Section 8: Software Development Models
- Learn the basics of Software Maintenance from the following:
  - [Overview of Software Maintenance](#)

### Test Your Understanding

## Stage 1- Milestone 2: UI & Scripting Technology

### Overall Duration: (12 Days)

This part of Stage 1 learning will be focusing on UI & Scripting technologies such as HTML5, CSS3, JavaScript, Bootstrap4 and jQuery.

Udemy learnings are recommended in the Platform to understand the fundamental concepts. In addition to this, you can also learn from other sources as mentioned in this handbook.

### Day 2

### HTML5

Learn about HTML5

### Continuous Learning: Technical Enablement



[Responsive Web Design: HTML5 + CSS3 for Entrepreneurs 2018](#)

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Lets Learn Some HTML 5
  - PROJECT: Awesome Landing Page Website
- Implement the examples along with the author.

Go through the below topics to enhance the learning.

- Visual Studio Code Features



[Beginner VS Code](#)

- Google Chrome Developer tools



[Devtools Pro: The Basics of Chrome Developer Tools](#)

### Continuous Learning: Technical Hands-on

- Simple Calculator
- Learning Material Styling

## Day 3

### HTML5

Learn about advanced concepts in HTML5

#### Behavioral Training

- Behavioral Session

### Continuous Learning: Technical Enablement

Go through web pages for learning below specific topics

- [HTML5 Events:](#)
- [HTML5 - Geo location 1:](#)
- [HTML5 - Geo location 2:](#)
- [HTML 5: Web Forms 2.0:](#)
- [HTML5 - Web Storage:](#)
- [HTML5-Web SQL Database:](#)

### CSS3- RWD, Media Queries

Learn the basics of Responsive Web Design from the following:

- [https://www.w3schools.com/css/css\\_rwd\\_intro.asp](https://www.w3schools.com/css/css_rwd_intro.asp)
- [https://www.w3schools.com/css/css\\_rwd\\_viewport.asp](https://www.w3schools.com/css/css_rwd_viewport.asp)
- [https://www.w3schools.com/css/css\\_rwd\\_mediaqueries.asp](https://www.w3schools.com/css/css_rwd_mediaqueries.asp)

## Day 4

### CSS3

### Continuous Learning: Technical Enablement



#### Responsive Web Design: HTML5 + CSS3 for Entrepreneurs 2018

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 2: CSS3 & First Project
  - Section 3: PROJECT: Awesome Landing Page Website
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-on

- Feedback Details
- Bill Calculator
- Trainer Feedback Rating Chart

## Day 5

### JavaScript

Learn about JavaScript

### Continuous Learning: Technical Enablement



#### Javascript basics for beginners

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Getting Started
  - Basics
  - Operators
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-on

- Fixed And Reducing Interest Loan Estimator
- Word Play - Operators, Conditional Control Statements & Loops
- Find Unique Characters - Functions
- Placing Order For Cake - String & Math



## Technical Quizzes:

- Quiz 1 - HTML 5 & CSS3
- Quiz 2 - Java Script

## Day 6

### JavaScript

Learn about HTML DOM, Form Validation, JSON, and Regular Expression

#### Behavioral Training

- Behavioral Session

#### JavaScript – Html DOM, Form Validation, JSON, and Regular Expression

Go through the below topics to enhance the learning.



##### Form Validation

- JavaScript Form Validation
- JavaScript can validate numeric input
- Data Validation
- [Form Submission Example](#)

##### String Methods

- String Length
- The substring() Method
- String.trim()

##### JavaScript HTML DOM

- The HTML DOM (Document Object Model)
- What is DOM?
- What is the HTML DOM?

##### Window alert() Method

- Definition and Usage
- Example

##### JavaScript isNaN() Function

- Definition and Usage
- Example

##### JavaScript Arrays

- All topics except Associative Arrays

JSON

Regular Expression  
Regular Expression  
indexOf function

### Continuous Learning: Technical Hands-on

- Validate Email - Regular Expression & test Function
- Greetings - DOM
- Employee Experience Details - Class and Object & Date

### Assess-Type-1: Code Challenge

- Assess-Type-1: Code Challenge - HTML5 and CSS3
- Assess-Type-1: Code Challenge - JavaScript

## Day 7

### Bootstrap

Learn about Bootstrap4

### Continuous Learning: Technical Enablement

#### The Bootstrap 4 Bootcamp

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 3: Getting Started With Bootstrap 4
  - Section 4: Bootstrap 4 Basics
- Implement the examples along with the author.

### Visual Studio Code Features

#### Beginner VS Code

### Continuous Learning: Technical Hands-On

- Contact Us - V1

## Day 8

### Bootstrap

Learn about Forms in Bootstrap4

## Behavioral Training

- Behavioral Session

## Continuous Learning: Technical Enablement



- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 5: Super Useful Utilities
  - Section 6: Forms
- Implement the examples along with the author.

## Continuous Learning: Technical Hands-On

- BS Feedback Form - V1

### Day 9

## Bootstrap

Learn about Navbars and Grid System

## Continuous Learning: Technical Enablement



- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 7: Navbars and Flexbox!
  - Section 8: The Magical Grid System
  - Section 9: Cards and List Groups
  - Section 10: Other Components
- Implement the examples along with the author.

## Continuous Learning: Technical Hands-On

- Page Layout - V1
- Responsive Web Page - V1
- Bootstrap's Navigation Bar - V1

### Day 10

## Bootstrap

Learn and Practice Bootstrap4

## Continuous Learning: Technical Enablement

### jQuery

Learn about the basics of jQuery

#### Continuous Learning: Technical Enablement



[The Complete jQuery Course: From Beginner To Advanced!](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 1: Introduction
  - Section 3: Element Selectors
  - Section 4: Manipulating the DOM I – Inserting, Replacing and Removing Elements
- Implement the examples along with the author.

#### Continuous Learning: Technical Hands-On

- Load jQuery
- Welcome Message

### Day 11

### jQuery

Learn about HTML DOM manipulation

#### Behavioral Training

- Behavioral Session

#### Continuous Learning: Technical Enablement



[The Complete jQuery Course: From Beginner To Advanced!](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 5: Manipulating the DOM II – Changing Element Data and CSS
- Implement the examples along with the author.

#### Continuous Learning: Technical Hands-On

- Three Divisions
- Select the Boxes
- Customer Data

### Day 12

## jQuery

Learn about Event Handling in jQuery

### Continuous Learning: Technical Enablement



[The Complete jQuery Course: From Beginner To Advanced!](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 6: Events I – Handling Mouse Events & Keyboard Events
  - Section 7: Events II - Forms
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-On

- Vertical Menu
- Get JSON Data
- Error Message
- Login Form
- Alternate Rows - Selectors
- Ice Cream Flavours - Selectors

## Day 13

## jQuery

Learn about Ajax with jQuery

### Behavioral Training

- Behavioral Session

### Continuous Learning: Technical Enablement



[The Complete jQuery Course: From Beginner To Advanced!](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 8: Ajax with jQuery
- Implement the examples along with the author.

### jQuery – AJAX:

Go through the below mentioned topics on JQuery Ajax

- [Introduction](#)
- [Load\(\)](#)
- [Post\(\)](#)

## Stage 1 - Milestone3: Oracle SQL

**Overall Duration (Including Behavioral Modules): 3 days**

This part of the training will be focusing on **Oracle SQL** along with Behavioral skills \*

Udemy learnings are recommended in the Platform to understand the fundamental concepts. In addition to this, you can also learn from other sources as mentioned in this handbook.

Day 14

### Oracle SQL

Learn the fundamentals of Oracle SQL

#### RDBMS Concepts

##### Continuous Learning: Technical Enablement

- [Introduction to DBMS](#)
- [Introduction to NoSQL](#)

##### Test Your Understanding

#### ANSI SQL using Oracle 12c

##### Continuous Learning: Technical Enablement



- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 15: Data Definition Language (DDL) Statements
  - Section 16: Data Manipulation Language (DML) Statements
  - Section 17: Constraints
- Implement the examples along with the author.

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

## Data Definition Language - Hands-Ons

- Create Department table
- Create Student table
- Create Staff table
- Modify the datatype
- Alter table buses
- Add a constraint to Course Table
- Drop Student Table

### Test Your Understanding

## Data Manipulation Language - Hands-Ons

- Insert Records - Tickets
- Insert Records into Student table
- Update Buses table
- Update Fees for short courses
- Remove Registration Details

### Test Your Understanding

Day 15

## Oracle SQL

Learn about SELECT statement, Function - Scalar & Aggregate in Oracle SQL

### Continuous Learning: Technical Enablement

 [The Complete Oracle SQL Bootcamp \(2022\)](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 3: Retrieving Data
  - Section 4: Restricting Data
  - Section 5: Sorting Data
  - Section 7: Single-Row Functions
  - Section 8: Conversion Functions
  - Section 9: Conditional Expressions
  - Section 10: Group Functions
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-on

#### SELECT Statement – Hands-Ons

- List Department names
- Department name based on block number
- Display Students Details

- Students Name based on Start and Ending Character
- Display User details
- List Schedule details

### Test Your Understanding

### Function - Scalar & Aggregate - Hands-Ons

- List Department Name
- Password Generation
- Formatting Date
- Number of departments
- Minimum Mark

### Test Your Understanding

## Day 16

### Oracle SQL

Learn Joins and Subqueries and Plan table in Oracle SQL

### Behavioral Training

- Behavioral session

### Continuous Learning: Technical Enablement



[The Complete Oracle SQL Bootcamp \(2022\)](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 12: Joining Multiple Tables
  - Section 13: Using Subqueries
- Implement the examples along with the author.

Learn about Plan Table from the following link:

- [Oracle Plan Table](#)

### Continuous Learning: Technical Hands-on

- Subject with Staff Details
- Department with Student Count
- Department has least Student Count
- Student with Minimum mark
- Student mark in particular subject
- Maximum mark in Subject with Staff name

### Test Your Understanding



## Stage 1- Milestone 4: C++

**Overall Duration (Including Behavioral Modules): 3 days**

This part of the training will be focusing on **C++** along with Behavioral skills \*

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-On exercises as recommended below.

### Day 17

#### C++

Learn about Basics, Operators, Conditions and Arrays in C++

#### Continuous Learning: Technical Enablement



[C++: From Beginner to Expert](#)

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 2: Basics
  - Section 3: Operators
  - Section 4: Conditions
  - Section 5: Arrays
  - Section 6: Loops
- Implement the examples along with the author.

#### Continuous Learning: Technical Hands-on

##### Control Structures – Hands-Ons

- Display ASCII

##### Arrays and Strings – Hands-Ons

- Lowest Mark in Each Semester
- Multiply first and last integer

#### Assess-Type-1: Code Challenge

- Assess-Type-1: Code Challenge – Oracle SQL

## Day 18

### C++

Learn about Functions, Object-Oriented Programming in C++

#### Behavioral Training

- Behavioral session

#### Continuous Learning: Technical Enablement



##### C++: From Beginner to Expert

- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 7: Functions
  - Section 11: Structures and Classes – Object Oriented Programming
- Implement the examples along with the author.

#### Continuous Learning: Technical Hands-on

##### Functions – Hands-Ons

- Divide Numbers

##### Object oriented Programming – Hands-Ons

- Shop
- Player
- MonthlyExpense
- Country
- BankAccount
- Amusement Park
- Discount Sales

## Day 19

### C++

Learn about Pointers and Advanced Concepts in C++

#### Continuous Learning: Technical Enablement



- Learn the sections listed below in the Udemy course and complete the corresponding hands-on coding given below.
  - Section 9: Pointers
  - Section 13: Advanced C++
- Implement the examples along with the author.

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

### **Pointers – Hands-Ons**

- String Length

### **Advanced Concepts – Hands-Ons**

- Element Replication
- Admission Eligibility

## Stage 1 - Milestone 5: Java

**Overall Duration (Including Behavioral Modules): 11 days**

This milestone we will be focusing on Java Programming along with behavioral skills\*

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

**Note:** You'll find the hands-on in the current learning path's module as per the names specified below.

Day 20

### Core Java

#### Continuous Learning: Technical Enablement

Overview, First Java Program, Variables, Datatypes, Literals, Operators, Expressions and Conditional Statements.

#### Learn and Practice



##### [Java In-Depth: Become a Complete Java Engineer!.](#)

- Java: A High-level Overview
- Skip installation steps.
- Implement the HelloWorld Program along with the author.

##### [Core Java Made Easy \(Covers the latest Java 15\)](#)

- Datatypes, Literals, Variables, Type Conversion, Casting & Promotion
- Operators and Assignments
- Flow Control Statements
  - Flow Control Statements Introduction
  - IF-ELSE
  - Assignment 2: If Else Ladder

## Continuous Learning: Technical Hands-on

- Display Characters
- Fuel Consumption Calculator
- Highest Placement

### Assess-Type-1: Code Challenge

- Assess-Type-1: Code Challenge – C++

## Day 21

### Behavioral Training:

- Behavioral Session

## Core Java

### Continuous Learning: Technical Enablement

Overview, String, Arrays, Looping Statements, Methods, Class, Object, static.

#### Learn and Practice



#### Core Java Made Easy (Covers the latest Java 15)

- Flow Control Statements
  - Switch, While, Do-While, For Loop, Break, Continue
- Static Members and their execution control flow.
- Non-Static Members and their execution control flow.

#### Java In-Depth: Become a Complete Java Engineer!.

- Classes, Objects and their Members.
  - Chapter Introduction
  - Class & Objects

#### Core Java Made Easy (Covers the latest Java 15)

- String Handling
- Arrays

### Continuous Learning: Technical Hands-on

- Least offer
- String Concatenation
- Ticket Price Calculation – Static
- Student Details - Constructor

## Core Java

### Continuous Learning: Technical Enablement

Access Modifiers, Packages, Inheritance, Abstraction.

#### Learn and Practice

Go through below mentioned sections and implement the examples along with the author.



#### Core Java Made Easy (Covers the latest Java 15)

- Access Modifiers
- Packages
- Event Management Use case
- Inheritance
- Abstraction

### Continuous Learning: Technical Hands-on

- Contact Details of Hosteller
- Account Manipulation - Abstract class

### Additional Learning:

#### Technical Quizzes:

- Quiz - Java Operator, Control flow statement
- Quiz - Applying Object Oriented Concepts in java

### Behavioral Training:

- Behavioral Session

## Core Java

## Continuous Learning: Technical Enablement

Polymorphism, Encapsulation, Interface, Object Methods

### Learn and Practice

Go through below mentioned sections and implement the examples along with the author.



#### Core Java Made Easy (Covers the latest Java 15)

- Polymorphism
- Encapsulation
- Object class methods

## Continuous Learning: Technical Hands-on

Mandatory Hands-on

- BankAccountDetails
- Employee Loan Eligibility – Polymorphism
- Vehicle-Loan-Insurance - Use Interface

Day 24

## Core Java

## Continuous Learning: OOAD Workshop

The workshop will help in understanding a problem using real world concepts instead using adhoc function concepts. We intent to learn OOAD approach for the following reason. Promotes better understanding of user requirements, leads cleaner design flexibility.

## Continuous Learning: Technical Enablement

Collection Framework, ArrayList, Map, Set.

### Learn and Practice

Go through below mentioned sections and implement the examples along with the author.



#### Core Java Made Easy (Covers the latest Java 15)

- Collections with Generics
  - Collections Introduction
  - List Introduction
  - ArrayList Hands On
  - Restricting the ArrayList Type
  - Inserting and Replacing Objects

- addAll and contains Methods
- size get and remove Methods
- Set Introduction
- Using HashSet
- Different Set Classes
- Iterator
- ListIterator
- Comparable and Comparator
- Create a StringBuffer Comparator
- Sort Strings by Length
- Sorting Objects
- Create a Object Comparator
- Map Introduction
- HashMap Demo
- Arrays and Collections Classes
- Collections Sort
- Reversing a List
- Arrays sort()
- Array to List conversion
- Generics
- Generic class structure
- Create your own Generic Class

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

- Insurance Bazaar
- Number of New Words
- Phone Book Manipulation

### **Additional Learning:**

### **Technical Quizzes:**

- Quiz - Collections Framework

## **Day 25**

### **Core Java**

### **Continuous Learning: Technical Enablement**

File Handling, Annotation, Threads and Garbage Collections, Exception Handling, Enums.

### **Learn and Practice**



Go through below mentioned sections and implement the examples along with the author.



### Core Java Made Easy (Covers the latest Java 15)

- IO Streams (File IO)
  - IO Streams Introduction
  - Read a File Using FileInputStream
  - Copy A File using FileOutputStream
  - Using Reader And Writer
- Java Annotations
  - Introduction
  - Using @Deprecated
  - Using @Override
  - Using @SuppressWarnings
- Multithreading
- Garbage Collection & Types Of Objects
- Exception Handling and Assertions
- Enums

### Continuous Learning: Technical Hands-on

- Array Manipulation - Use try with multi catch
- Employee Promotion
- Register a Candidate - User defined Exception (with throw and throws)
- Retrieving Data from file

## Day 26

### Behavioral Training:

- Behavioral Session

### Core Java

### Continuous Learning: Technical Enablement

Java 8 Features - Lambda Expressions, Streams, Filters, java.time.

### Learn and Practice

Go through below mentioned sections and implement the examples along with the author.



### Core Java Made Easy (Covers the latest Java 15)

- Java 8 Features

### Java In-Depth: Become a Complete Java Engineer!.

- Date & Time API ~ Covers Java 8 & also Legacy API

## Continuous Learning: Technical Hands-on

### Hands-on

- Mall Parking System
- Validate Name
- Travel Agency
- Fruit Basket Estimation

## Day 27

### Core Java

## Continuous Learning: Technical Enablement

Java 8 Features - Streams and Optionals. Asynchronous and Parallel Programming in Java 8

Go through web pages for learning below specific topics

[Serial and Parallel Sorts in Java](#)

[Streams](#)

[Optionals](#)

## Continuous Learning: Technical Hands-on

- Employee Loan Eligibility
- Placement Enrollment Count
- Auditing

### Additional Learning:

### Technical Quizzes:

- Quiz - Advanced Java Concepts

## Day 28

### Behavioral Training:

- Behavioral Session

### JDBC

### Continuous Learning: Technical Enablement

Introduction, Connection, Statement, Prepared Statement, Callable Statement, Transactions and Meta Data.

#### 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

- Add Flight using JDBC
- Search for Trains – JDBC

## Day 29

### JDBC

### Continuous Learning: Technical Enablement

Introduction, Connection, Statement, Prepared Statement, Callable Statement, Transactions and Meta Data.

#### Learn and Practice



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

### Continuous Learning: Technical Hands-on

- Player Selection System\_JDBC
- **Assess-Type-1: Code Challenge - Group 1**
- **Assess-Type-1: Code Challenge - Group 2**

## Day 30

### Additional Learning:

Assess-Type-2 Preparation

**Java Assess-Type-2 : Mock**

## Stage 1: Milestone 6: Unit Testing

**Overall Duration (Including Behavioral Modules): 2 days**

This module deals with JUnit and Code Quality aspects.

## Day 31

### JUnit

### Continuous Learning: Technical Enablement

Writing basic tests, Assert Statements, Testing Exceptions, Comparing Arrays, Parameterized Tests, Test Suites.

.

### Learn and Practice



[Learn Java Unit Testing with Junit & Mockito in 30 Steps](#)

- Introduction
- Unit Testing with Junit
  - JUnit Step 1 : Why is Unit Testing Important?

- JUnit Step 2 : Setting up your first JUnit
- Step 03:First Successful JUnit.
- Step 04 : Refactoring Your First JUnit Test
- Step 05 : Second JUnit Example assertTrue and assertFalse
- Step 06 : @Before @After
- Step 07: @BeforeClass @AfterClass
- Step 08 : Comparing Arrays in JUnit Tests
- Step 09 : Testing Exceptions in JUnit Tests
- Step 10 : Testing Performance in JUnit Tests
- Step 11 : Parameterized Tests
- Step 12 : Organize JUnits into Suites

## Continuous Learning: Technical Hands-on

- Electricity Bill
- Testing using Assertion
- Parameterized
- Product Login Test Suite

## Day 32

### Behavioral Training:

- Behavioral Session

## Test Driven Development

### Continuous Learning: Technical Enablement

Test Automation, Test Code Optimization and Test-Driven Development

#### Learn and Practice



Learn TDD in 24 Hours

- Getting started with automated tests.
- Taking care of the test code
- Test-Driven Development

## Code Quality

### Continuous Learning: Technical Enablement

The concepts include importance of code quality and coding standards.

- [PMD rulesets](#)

- [Checkstyle](#)
- [SONAR](#)
- [Findbugs](#)

### Continuous Learning: Technical Hands-on

- LMS Refactoring

## Stage 2 - Milestone 7: Oracle PL/SQL

### Overall Duration: 5 days

In this part of training, you will focus on Oracle PL/SQL along with behavioral skills\*.

Udemy learnings are recommended in the Platform to understand the fundamental concepts. Apply the concepts learned and solve the Hands-On exercises as recommended below.

### Where to practice Oracle PL/SQL?

You can practice oracle hands-on in your local machine after installing the requisite software. It is not mandatory to have these software in your computer though. For getting real-time experience, you can try out the hands-on exercises outside the Tekstac learning platform.

### Oracle SQL Developer

Oracle SQL Developer is a free, integrated development environment that simplifies the development and management of Oracle Database in both traditional and Cloud deployments. Get Oracle SQL Developer from [here](#).

You can download Oracle Software from [here](#)

If you have an Oracle account, try [Oracle Live SQL](#)

### Day 33

### Oracle PL/SQL

Learn about PL/SQL Basics, Processing Data via PL/SQL

### Continuous Learning: Technical Enablement



- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 2: PL/SQL Basics
  - Section 3: Processing Data via PL/SQL
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-on

- Insert Record using Anonymous Block
- Update Location
- Area of a Circle

### Assess-Type-2: Integrated Capability Test (ICT)

- Java, JDBC, Oracle SQL – 4 hours

## Day 34

### Oracle PL/SQL

Learn about Blocks, Exceptions, Working with Records.

### Behavioral Training

- Behavioral Session

### Continuous Learning: Technical Enablement



- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 4: PL/SQL Blocks
  - Section 5: Exceptions
  - Section 7: Working with Records
- Implement the examples along with the author.

### Continuous Learning: Technical Hands-on

- Insert credit - Procedure
- Select city – Procedure

- Procedure with Exception Handling

## Day 35

### Oracle PL/SQL

Learn about Cursors, Triggers in Oracle PL/SQL

#### Continuous Learning: Technical Enablement



[PL/SQL by Example - Beginner to Advanced PL/SQL](#)

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 8: Cursors
  - Section 10: Triggers
- Implement the examples along with the author

#### Continuous Learning: Technical Hands-on

- Display department names using Cursors
- Insert a Record – Triggers

## Day 36

### Oracle PL/SQL

Learn about Packages, Collections

#### Continuous Learning: Technical Enablement



[PL/SQL by Example - Beginner to Advanced PL/SQL](#)

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 6: Packages
  - Section 9: Collections
- Implement the examples along with the author

#### Continuous Learning: Technical Hands-on

- Package with a Procedure to update salary

## Day 37

### Oracle PL/SQL



### Behavioral Training

- Behavioral Session

### Continuous Learning: Technical Enablement



[PL/SQL by Example - Beginner to Advanced PL/SQL](#)

- Learn the sections listed below in this Udemy course and complete the corresponding hands-on coding given below.
  - Section 11: Advanced Topics – Bulk Processing
  - Section 12: Advanced Topics – Dynamic SQL
  - Section 13: Advanced Topics – Table Functions
- Implement the examples along with the author

### Test your understanding

## Stage 2 – Milestone 8: Job Schedulers

**Overall Duration:** 3 days

**Day 38**

### Job Schedulers

#### Continuous Learning: Technical Enablement

The concepts include Java Watch directory, Windows services, Task scheduler and Quartz scheduler.

#### Learn and Practice

[Watching Directory](#)

[Watch folder/Directory in Java](#)

#### Continuous Learning: Technical Hands-on

- JOBS-HOL-001

#### Learn and Practice

Running Java Application as Windows service – usage of WinSW.

[Java Application as Windows Service](#)

## Continuous Learning: Technical Hands-on

- JOBS-HOL-002

### Assess-Type-1: Code Challenge of Oracle PL/SQL

## Day 39

### Job Schedulers

#### Learn and Practice

Schedule Emails using Java, Java Task scheduler.

[Java Mail Scheduler](#)

[Run Automated Task – fixed interval](#)

## Continuous Learning: Technical Hands-on

- JOBS\_HOL\_003
- JOBS\_HOL\_004

## Day 40

### Job Schedulers

#### Learn and Practice

Quartz Scheduler Java.

[Quartz scheduling](#)

## Continuous Learning: Technical Hands-on

- JOBS\_HOL\_005

## Stage 2 – Milestone 9: Application Debugging

**Overall Duration: 2 days**

In this part of training, you will focus on Application Debugging.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

## Day 41,42

### Application Debugging

Go through the video and download the code from the Tekstac platform. Debug the application as per the video in the Milestone and do the hands-on.

#### Learn and Practice



#### Eclipse Debugging Techniques And Tricks

- Go through the entire course.

#### Demo Video:

1. Eclipse\_Debugging.mp4 - Basic application debugging concepts using eclipse

#### Hands-On:

- Debugging\_HOL\_001

## Stage 2: Milestone 10: ITIL/SCM Tools

#### Overall duration: 3 days

In this part of training, you will focus on ITIL, Service Now, Jira.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

## Day 43

### ITIL

Learn about ITSM (IT Service Management)

#### Continuous Learning: Technical Enablement



## Introduction to Service Management with ITIL 4

- Learn the sections listed below in this Udemy course
  - All Sections
- Implement the examples along with the author

### Technical Quiz

- ITIL Quiz

## Day 44

### Jira

Learn about Jira

### Continuous Learning: Technical Enablement



## Jira for Beginners - Detailed Course to Get Started in Jira

- Learn the sections listed below in this Udemy course
  - All Sections
- Implement the examples along with the author

## Day 45

### ServiceNow

Learn about ServiceNow

### Continuous Learning: Technical Enablement



## The Complete ServiceNow System Administrator Course

- Learn the sections listed below in this Udemy course
  - Section 2: ServiceNow Overview
  - Section 6: User Administration
  - Section 7: Core Applications
  - Section 8: System Administration
- Implement the examples along with the author

## Stage 2 - Milestone 11: UNIX

### Overall Duration: 3 days

In this part of training, you will focus on UNIX and Shell Scripting.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

### Where to Practice?

#### Best Online Linux Terminals to Practice Linux Commands

- [JSLinux](#)
- [Copy.sh](#)
- [Webminal](#) (User registration is required)
- [Tutorialspoint Unix Terminal](#)
- [Codeanywhere](#) (User registration is required)

#### Best Online Bash Editors

- [Tutorialspoint Bash Compiler](#)
- [JDOODLE](#)
- [ShellCheck](#)

Day 46

### UNIX

Learn about Basic Linux Commands

#### Continuous Learning: Technical Enablement



[The Linux Command Line Bootcamp: Beginner To Power User](#)

- Learn the sections listed below in this Udemy course

- Section 2: Introduction
  - Section 3: Command Basics
  - Section 4: Getting Help
  - Section 5: Navigation
  - Section 6: Creating Files & Folders
  - Section 8: Deleting, Copying, & Moving
- Implement the examples along with the author

### Continuous Learning: Technical Hands-on

- List of Files 2
- List of Files 3
- Copy File - 6
- Copy File 5

## Day 47

### UNIX

Learn about File Commands in UNIX

### Continuous Learning: Technical Enablement



[The Linux Command Line Bootcamp: Beginner To Power User](#)

- Learn the sections listed below in this Udemy course
  - Section 8: Deleting, Copying, & Moving
  - Section 10: Working With Files
  - Section 11: Redirection
  - Section 15: Grep
  - Section 16: Permission Basics
  - Section 17: Altering Permissions
- Implement the examples along with the author

### [Linux/Unix Process Management](#)

### Continuous Learning: Technical Hands-on

- Copy Directory
- Copy Complete Directory
- Move File 1
- Move File 2
- Find string 7
- Find string 8
- Grep Command - 1

- Grep Command - 2

## Day 48

### Shell Scripting

Learn about Shell Scripting in UNIX

#### Continuous Learning: Technical Enablement



[Bash Scripting and Shell Programming \(Linux Command Line\)](#)

- Learn the sections listed below in this Udemy course
  - All Sections
- Implement the examples along with the author

#### Continuous Learning: Technical Hands-on

- Script - Pattern Printing
- ShellScripting
- Script to Count

## Stage 2 - Milestone 12: Python

### Overall Duration: 5 days

In this part of training, you will focus on Python.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

### Where to Practice?

You can practice Python programming using Tekstac Editor. However, for getting real-time programming experience you can try out various other software tools and they are the following.

#### Python-Specific Editors and IDEs

- [PyCharm](#)
- [Spyder](#)
- [Thonny](#)

#### General Editors and IDEs with Python Support

- [Eclipse + PyDev](#)
- [Sublime Text](#)
- [Atom](#)
- [Vi / Vim](#)
- [Visual Studio](#)

- [Visual Studio Code](#)

**\*Note:** Download the additional learning content from the LP under the section – **Learning**.

## Day 49

### Python

Learn about Python Introduction, Datatypes, Functions.

#### Continuous Learning: Technical Enablement

- Learn the sections listed below in this Udemy course
  - Section 2: Getting Setup with Python
  - Section 3: Variables and Types
  - Section 8: Python Program Flow
  - Section 13: Python Functions
- Implement the examples along with the author



[Complete Python Programming Masterclass Beginner to Advanced](#)

#### Continuous Learning: Technical Hands-on

- Alien's Visit
- Income Tax
- News Report Generation
- Palindrome

## Day 50

### Python

Learn about Python Operators and Collections

#### Continuous Learning: Technical Enablement

- Learn the sections listed below in this Udemy course
  - Section 4: Python Operators
  - Section 5: Python Collections
  - Section 14: Python Object Oriented Programming (OOP)
  - Section 15: Handling Error in Python
- Implement the examples along with the author



[Complete Python Programming Masterclass Beginner to Advanced](#)

#### Continuous Learning: Technical Hands-on

- Search Student Data
- Password Protection
- Pass or Fail
- AEIMA's Online Courses
- Arrange Names



## Day 51

### Python

Learn about Python Modules and Files

#### Continuous Learning: Technical Enablement

- Learn the sections listed below in this Udemmy course
  - Section 10: Working with Files
  - Section 7: Python Modules
  - Section 12: Python OS Module
- Implement the examples along with the author



[Complete Python Programming Masterclass Beginner to Advanced](#)

#### Continuous Learning: Technical Hands-on

- Copy the File
- Store Student Data
- Farewell
- Rhythm Composer
- Time Table Planning

#### Test Your Understanding

## Day 52

### Django

Learn about Python Web Framework, Django

#### Continuous Learning: Technical Enablement



[Python Django - The Practical Guide](#)

- Learn the sections listed below in this Udemmy course
  - Section 1: Getting Started
  - Section 2: Course Setup
  - Section 3: URLs & Views
  - Section 4: Templates & Static Files
  - Section 6: Data & Models
- Implement the examples along with the author

## Day 53

## Django

Learn about Python Web Framework, Django

### Continuous Learning: Technical Enablement



[Python Django - The Practical Guide](#)

- Learn the sections listed below in this Udemy course
  - Section 10: Forms
  - Section 11: Class Views
  - Section 12: File Uploads
  - Section 13: Sessions
- Implement the examples along with the author

[Django Tutorial](#)

## Stage 2 - Milestone 13: Cloud & DevOps Basics

**Overall Duration:** 2 days

This module deals with Cloud and DevOps

Day 54

### Cloud

Introduction to Cloud, Characteristics, Deployment model, advantages of Cloud Computing, AWS Fundamentals

### Continuous Learning: Technical Enablement

#### Learn and Practice



[Introduction to Cloud Computing on Amazon AWS for Beginners](#)

Go through entire course

**Additionally, please go thru links on**

[Introduction to Cloud Computing](#)

### Continuous Learning: Technical Hands-on

- CloudComputing-AWS-HOL\_001

- CloudComputing-AWS-HOL\_002

## Assess-Type-1: Code Challenge

- Assess-Type-1: Code Challenge - Python

Day 55

## DevOps

### Learn and Practice



[The DevOps Essentials - The Handbook](#)

- Go thru all the sections in the course

## Stage 2 - Milestone 14: Splunk

**Overall Duration: 2 days**

In this part of training, you will focus on Splunk.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

Day 56

## Splunk

Learn about Introduction to Splunk, Machine data, benefits, installation of Splunk, Uploading the test file data to Splunk, indexing, monitoring input

### Continuous Learning: Technical Enablement



[The Complete Splunk Beginner Course \[2021\]](#)

- Learn the sections listed below in this Udemy course
  - Section 1: Introduction
  - Section 2: Planning Your Splunk Deployment
  - Section 3: Installing Splunk
  - Section 4: Getting data In
- Implement the examples along with the author

## Learning Objectives

Download the learning objectives from the platform and plan your learning accordingly

- Refer the Objectives with Topic ID: Splunk-T01, Splunk-T02, Splunk-T03

### Day 57

## Splunk

Learn about refining the search, searching by fields, exporting the search results, best practices, SPL fundamentals, Commands (Top, Rare, Status), Functions (Count, DC, Sum, Avg, List, Value), Search and reporting in real time project data

### Continuous Learning: Technical Enablement



#### [The Complete Splunk Beginner Course \[2021\]](#)

- Learn the sections listed below in this Udemy course
  - Section 5: Searching and Reporting
  - Section 6: Visualizing Your Data
  - Section 7: Advanced Splunk Concepts
- Implement the examples along with the author

## Learning Objectives

Download the learning objectives from the platform and plan your learning accordingly

- Refer the Objectives with Topic ID: Splunk-T04, Splunk-T05, Splunk-T03

### Assess-Type-2: Integrated Capability Test (ICT) – KBA

- Summative (stage 1 + stage2) skills

## Stage 2 - Milestone 15: GIT

### Overall Duration: 1 day

In this part of training, you will focus on GIT.

Learn the concepts from the given sources, apply the concepts learned and solve the Hands-on as recommended below.

**Important Note:** DO NOT create public **GitHub** for practice with your **Cognizant ID**. You may practice using your personal account outside Cognizant premises.

## Day 58

### GIT

Learn about basics of GIT and its basic operations.

#### Continuous Learning: Technical Enablement



[Git Complete: The definitive, step-by-step guide to Git](#)

- Learn the sections listed below in this Udemy course
  - Section 1 to 8
- Implement the examples along with the author

#### Continuous Learning: Technical Hands-on

- Git-T02-HOL\_001
- Git-T02-HOL\_002
- Git-T03-HOL\_001
- Git-T03-HOL\_002
- Git-T03-HOL\_003
- Git-T03-HOL\_005

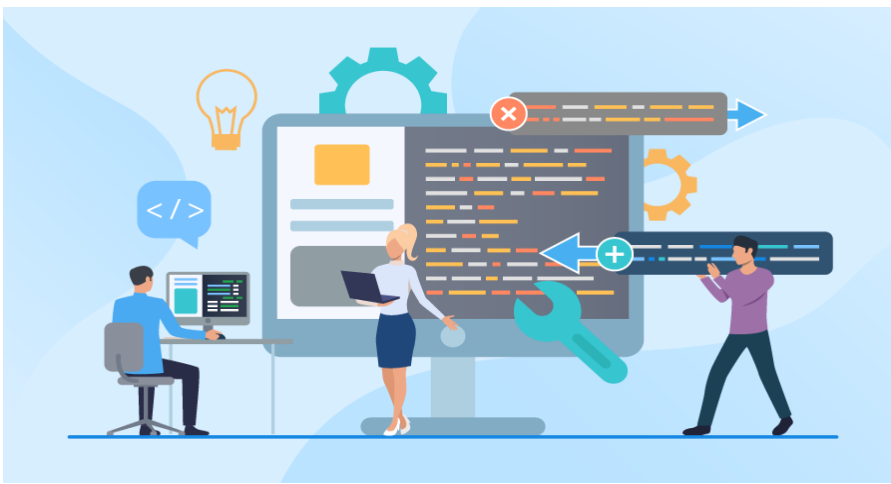
## Project

### Project Simulation

**Overall duration: (4 days)**

Maintenance of software projects is an important phase in software engineering. Application maintenance is not just about fixing defects but modifying a software product after delivery to correct faults, as well as to improve performance.

Application maintenance and enhancement to existing applications begin with a thorough study of existing applications to identify areas of improvement.



As part of the project phase, a fully developed project will be made available in the GitLab server and you will be given access to it. It is a team project and the team size is restricted to 4 members including the team lead. The team will be known as PoD. The project mentor/trainer will be assigned tickets to you and you will be resolving the issues and mark the progress.

Tickets can either be defect or a feature development. Each member of the PoD will be assigned with a minimum of 5 tickets of varying complexities during this project phase.

There will be a final evaluation upon the completion of this project phase and the parameters are of the following.

- Source Code
- Functionality Completion, Usage of Features, Code Quality
- Demo of Output
- Viva Voce on Technical Aspects (of the skills learnt so-far)

## 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. What is Assess-type-1?

A problem statement will be provided to you and you need to solve it using a single skill.

5. What is Assess-type-2?

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.

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

Coach is your point of contact.