

# Digital Honors - ADM Java Program Guide

## What is the Digital Honors program?

Career aspirations are a huge motivator for success. We are pleased to launch GenC Digital Honors, a program dedicated to accelerated growth and career progression of self-driven, high performing GenC associates. This program is an opportunity for all GenCs at Programmer Analyst Trainee (PATs) and Programmer Analyst (PA) grade to get one step closer to the GenC Next / GenC Pro role, while fulfilling your career aspirations.

GenC Digital Honors provides eligible associates (GenCs), an opportunity to apply for a GenC Next / GenC Pro role and allows them to upskill during the program and help ready them to take on a new role with different, more challenging demands.

# Pre-requisite skills

The program expects the aspirants to have working knowledge on the following skills. These skills would be tested through a skill-based assessment to qualify to enter the program.

- Web User Interface – HTML5, CSS3, Javascript, Bootstrap, JQuery
- Database – MySql, Oracle PL/SQL
- Programming Languages – Core Java
- Core framework skills – Spring MVC using Spring Boot
- Testing – Junit

## Program detail

The Digital Honors program runs for a period of 13 weeks to enter the **Application Development and Maintenance (ADM)** Service Line from other Service lines. It is a 2-step process, where the aspirant prepares and takes up an assessment to qualify for the program. Once qualified the aspirant would have 13 weeks to complete the

### Following skills:

- Angular
- Code Coverage
- Logging
- Application Debugging
- DevOps and SCM Tools
- Spring Data JPA
- REST and Microservices
- Cloud – Standalone concepts and DevOps

### Through

1. Self-paced learnings with sufficient practice hands-on & Skill based assessments
2. Individual Cloud and DevOps based Project case study
3. HackerRank assessment

The aspirants would be registered to Vendor platform for the Hands-on practice, assessments and Project case study completion and evaluation. Cognizant Academy would provide self-paced learnings and guided hands-on to practice. The completion on the learning components will be through Multiple Choice Question (MCQ) type assessments, Project case study with Cloud deployment and DevOps. This will be followed by a HackerRank assessment covering the skills at code and knowledge levels. **A minimum of 70% average in all the MCQ type assessments which will gauge the learning, a minimum of 70% in the Project case study and a minimum of 50% in the HackerRank assessment.**

The MCQ assessments will be on CLearn. The CLearn course code is provided in the table below. Upon logging to 'Cognizant Learn' on OneCognizant and search for the course code. The code is available to take it up anytime as per the participant's convenience. Learning and hands-on

completion is recommended to take up the MCQ assessments. Three attempts will be given for every MCQ assessment. The last score of every assessment will be considered for completion score.

## Lab detail

Self-paced learning detail along with the sharepoint link containing Hands-on questions for practice is provided below. The participants are advised to use their machine to install and practice the hands-on. The list of softwares needed are available [here](#). OneIT request can be raised through OneCognizant portal to install the softwares.

GitHub is available for all Code work or project work to be put on a repository. You can follow the instructions to use GitHub, available [here](#), for reference.

Finally, once the project is complete, please upload your code to IIHT Git [url](#), follow the normal sign-up process using Cognizant email address.

Cloud lab access will be provided for a period of 60 days of \$100 credits to work on the hands-on and final project.

Note:

- Go through the skills in the same sequence as given in the Handbook.

Recommended sequence provided below.

Skill order	Skill (Assessment inclusive)	Recommended duration (Days)	Day range	Has Assessment or not?
1	Angular	12	1 to 25	Yes
2	Code Analysis and Code Coverage	3	26 to 28	
3	Application Debugging	1	29	
	DevOps and SCM Tools	2	30 to 31	
3	REST, Spring Data JPA and Microservices	17	32 to 53	Yes (2)
4	Cloud - AWS	12	54 to 68	
5	Cloud Project	15	69 to 91	
7	HackerRank assessment	1	92 to 95	
8	BU Interview	1		

## Angular

Scope:

- Refer to the below mentioned link for detailed list of topics and subtopics covered

[Angular Scope](#)

Note:

- Go through the skills in the same sequence as given in the Handbook.
- Few of the Practice Hands-on will contain reference to the exercises completed in the previous module.



## Angular – The complete guide

- Learn the sections listed below in this Udemy course
  - Section 1: Getting started
  - Section 2: The basics
  - Section 11: Changing pages with Routing
  - Section 15: Handling Forms in Angular Apps
  - Section 17: Using Pipes to Transform Output
  - Section 18: Making Http Requests
  - Section 20: Authentication & Route Protection in Angular
  - Section 23: Deploying an Angular App
  - Section 28: A Basic Introduction to Unit Testing in Angular Apps

Implement the examples along with the author.

Hands-on are available [here](#) for your practice.

### **Angular Knowledge Based Assessment:**

**Enroll and complete the CLearn code mentioned below.**

#### **Note:**

You will have 3 attempts for every assessment. PLEASE PREPARE for the assessment and then utilize the attempt. DO NOT WASTE AN ATTEMPT.

Course code	Assessment name
ATHDH224907	DigitalHonors_Angular–Knowledge Based Assessment [101-Angular]

## Code Analysis and Code Coverage

### Scope:

- Refer to the below mentioned link for detailed list of topics and subtopics covered

[LoggingCodeQuality Scope](#)

### **Lombok and SONAR**

[Lombok link1](#)

[Lombok link2](#)

[Sonar link1](#)

[Sonar link2](#)

### **ECL Emma**

[ECL Emma link](#)

Hands-on practice

[Hands on link](#)

## Application Debugging

Scope:

- Refer to the below mentioned link for detailed list of topics and subtopics covered

### [Application Debugging Scope](#)

- Go through the video and download the code from the Hands-on link. Debug the application as per the video and do the hands-on

#### Demo Video:

1. [Eclipse Debugging.mp4](#) - Basic application debugging concepts using eclipse

#### Additional Learning:



[Eclipse Debugging Techniques And Tricks](#)

- Go through the entire course.

#### Hands-On:

- [Debugging\\_HOL\\_001](#) – The application to debug and fix errors are available [here](#) to download and work.

## DevOps and SCM Tools

### Scope - Jenkins:

Refer to the below mentioned link for detailed list of topics and subtopics covered

- [Jenkins](#).
- Refer the objectives with Topic Id **Jenkins-T01** of the learning objectives.



[Jenkins - The Complete Tutorial | Master CI/CD and DevOps](#)

- Go through the entire course.

#### Hands-On:

- [Jenkins Java](#)

### Scope - Jira :

Please go through the learning [Jira for Beginners - Detailed Course to Get Started in Jira](#) to understand the basic and use of Software Configuration Management tool Jira.

### Scope - GIT :

Download the Learning objectives of **Git-Objectives** from [here](#).

- Refer the objectives with Topic Id GIT-T01, GIT-T02, GIT-T03 of the learning objectives.

### Hands-On:

Hands-on are available [here](#).

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

## REST, Spring Data JPA and Microservices

### Scope:

- Refer to the below mentioned link for detailed list of topics and subtopics covered

[Spring REST Scope](#)  
[Spring Data JPA Scope](#)  
[Microservices Scope](#)

### Note:

- Go through the skills in the same sequence as given in the Handbook.
- Few of the Practice Hands-on will contain reference to the exercises completed in the previous module.

## Spring REST using Spring Boot



### [Master Java Web Services and RESTful API with Spring Boot](#)

- Learn the sections listed below in this Udemy course
  - Section 6: RESTful Web Services with Spring and Spring Boot

Implement the examples along with the author.

[MockMVC](#)

[Angular Restful Webservice Integration](#)

[Performance Testing of Restful Webservice](#)

[JWT Authentication for RESTful Web Service using Spring Security](#)

Hands-on practice

- [Hands-on Link](#)

## Microservices and Docker



### [Master Microservices with Spring Boot and Spring Cloud](#)

- Learn the sections listed below in this Udemy course

Section 6: Microservices with Spring Cloud - V2

Implement the examples along with the author.

### [Need and Benefit of Microservice](#)

### [Docker for the Absolute Beginner - Hands On - DevOps](#)

- Learn the sections listed below in this Udemy course

Section 1: Introduction

Section 2: Docker Commands

Section 3: Docker Run

Section 4: Docker Images

Section 5: Docker Compose

Implement the examples along with the author.

### [Hosting a MySQL server with schema creation using docker](#)

### [Hosting a REST API Microservice using docker](#)

### [Docker Compose](#)

Hands-on Practice

- [Hands on link](#)

## Spring REST and Microservices Knowledge Based Assessment:

**Enroll and Complete the CLearn code mentioned below.**

### **Note:**

You will have 3 attempts for every assessment. PLEASE PREPARE for the assessment and then utilize the attempt. DO NOT WASTE AN ATTEMPT.

Course code	Assessment name
ATHDH224908	DigitalHonors_Spring REST and Microservices–Knowledge Based Assessment [101-Basics]

## Spring Data JPA



### [Master Hibernate and JPA with Spring Boot in 100 Steps](#)

- Learn the sections listed below in this Udemy course

Section 5: JPA and Hibernate in Depth

Section 6: Establishing Relationships with JPA and Hibernate - OneToOne

Section 7: Let's review with a few FAQs about Hibernate and JPA

Section 8: Establishing Relationships with JPA and Hibernate – OneToMany

Section 9: Inheritance Hierarchies with JPA and Hibernate

Section 10: Queries with Entities using JPQL  
Section 11: Queries using Java API - Criteria Queries  
Section 13: Spring Data JPA & Spring Data REST

Implement the examples along with the author.

[HQL](#)

[Restful Webservice – Spring Data JPA Integration](#)

[UserDetailsService](#)

Hands-on Practice

[Hands on link](#)

### Spring DataJPA Knowledge Based Assessment:

**Enroll and Complete the CLearn code mentioned below.**

#### Note:

You will have 3 attempts for every assessment. PLEASE PREPARE for the assessment and then utilize the attempt. DO NOT WASTE AN ATTEMPT.

Course code	Assessment name
ATHDH224906	DigitalHonors_SpringDataJPA–Knowledge Based Assessment [101-Basics]

## Cloud - AWS

#### Scope:

- Refer to the below mentioned link for detailed list of topics and subtopics covered

[Cloud and AWS Scope](#)

#### Note:

- Go through the skills in the same sequence as given in the Handbook.
- Few of the Practice Hands-on will contain reference to the exercises completed in the previous module.

### Introduction to Cloud, EC2, S3, DynamoDb, RDS and CI/CD

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



- Learn the sections listed below in this Udemy course
  - Section 2: The Building blocks of Cloud Computing
  - Session 3: Introduction to Cloud Computing
  - Section 4: Demystifying Cloud Architecture
  - Section 5: AWS Basics
  - Section 6: Amazon Elastic Compute Cloud(EC2)
  - Section 7: AWS Storage Services



- Section 8: AWS Databases

Implement the examples along with the author.

More learning material:

[Link 1](#)

[Link 2](#)

[Link 3](#)

## DevOps CI/CD



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

- Learn the sections listed below in this Udemy course
  - Section 10: DevOps on AWS - Creating a Code Pipeline

Implement the examples along with the author.

More learning material:

[Link 1](#)

## Hands-on Practice

- Hands on links
  - [Hands-on 1](#)
  - [Hands-on 2](#)
  - [Hands-on 3](#)
  - [Hands-on 4](#)
  - [Hands-on 5](#)
  - [Hands-on 6](#)

## Spring REST with DynamoDb backend

[Link 1](#)



[Link 2](#)

## Hands-on Practice

- [Hands on link](#)
- [Hands on link](#)

## ECS

### [Docker in AWS - Deploy Java Spring Boot to AWS Fargate & ECS](#)



- Learn the sections listed below in this Udemy course
  - Section 1: Deploying Spring Boot Microservices with ECS and AWS Fargate
  - Section 3: Getting Started with ECS and AWS Fargate
  - Section 5: Introduction to Microservices
  - Section 6: Deploying Currency Exchange Microservice with H2 to AWS Fargate

Section 7: Deploying Currency Exchange Microservice with MySQL to AWS Fargate

Section 8: Deploying Currency Conversion Microservice to AWS Fargate

Section 11: Implement Auto Scaling and Load Balancing with AWS Fargate

Section 13: Implement CI and CD with AWS Code Pipeline

[Link 1](#)

Hands-on Practice

- [Hands on link](#)

## EKS



[Kubernetes for Beginners: Google Cloud, AWS & Azure](#)

- Learn the sections listed below in this Udemy course  
Section 12: Kubernetes on AWS with EKS

## Swagger



[Link 1](#)

Hands-on Practice

- [Hands on link](#)

## Developer Tools: DevOps, AWS Code Commit, AWS CI/CD

Hands-On:

- [HandsOn Link1](#)
- [HandsOn Link2](#)
- [HandaOn Link3](#)

## Note:

Please note that you would be provided with Cloud lab access for a period of 60 days. **\$75 for 30 days credit and another 30 days with \$100 credit.** Hence please use the Cloud resources very carefully. **Delete the resources by the end of the day ONCE COMPLETED. Leaving any resource unutilized will lead to credits usage unnecessarily and might end up no credits for the final project.**

# Cloud Project

There is a set of Project requirements available here, that involves the usage of Microservices and its consumption thru an Angular application. Cloud deployment must be done for the Microservices, with CI/CD pipeline setup, Docker containerization and Kubernetes orchestration. You can choose any one from that to complete it within the 3-month program duration.

## [Project Requirement Repository Link](#)

1. Spend one week for Application local development and deployment. Follow the requirements to create the Web application and the Microservices. Follow best coding standards and practices, logging etc. as per the requirement.
2. Use the second week for Cloud deployment of the Microservices. Use CICD for DevOps.
  - Continuous Integration and deployment to be done using Code commit, Code Build and Code Pipeline
  - Containerization to be done using Docker and Orchestration to be implemented using AWS ECS

**Note:** Implement the HandsOn given in cloud section, which contains detailed instruction on how to perform Cloud deployment of the Microservices.

Minimal trainer support will be provided for query clarification on the learning and Project. This opportunity can be utilized well.

There would be a detailed demo and Viva Voce with the Vendor evaluator to check the completion, through Teams meeting. The aspirant would receive meeting invite for the project review based on the evaluator availability.

The Project evaluation templates placed [here](#). Go through them to understand the aspects of check in the evaluation. Do a self-evaluation of the project based on the parameters in every layer.

Finally, once the project is complete, please upload your code to IIHT Git [url](#), follow the normal sign-up process using Cognizant email address. This will help the evaluator to go through your code for easier evaluation.

## Quick Checklist

1. Reserve a minimum \$70 for the project cloud deployment.
2. MFPE walkthrough video is available [here](#). Please go through for detailed understanding.
3. **The aspirant is recommended do a self-evaluation of the project through the self-evaluation templates. Recommendation to self-evaluate on ALL the layers as per the evaluation template. This helps the candidate to know the set of aspects that the evaluator would check on so that during the evaluation there won't be any confusion.**
4. A minimum of 70% is required to score an overall 70% in the project evaluation. The worksheet 'FSD Layer Analysis' for your self-analysis score.
5. Upload your code to IIHT Git [url](#) for the vendor evaluation.

# HackerRank assessment pattern

HackerRank assessments will be conducted to complete the knowledge on the skills learnt. This is a component of the EE SL Accreditation. A mock assessment followed by Actual assessment will be conducted based on the participant availability. Shown below is the assessment pattern.

Mock HackerRank assessment			
Java sections	Duration (In minutes)	DotNet sections	Duration (In minutes)
Section 1: Data Structures and Algorithms - Coding	60	Section 1: Data Structures and Algorithms - Coding	60
Section 2: Java - Multi Choice Questions	10	Section 2: WebApi - Multi Choice Questions	5
Section 3: Microservices - Multi Choice Questions	5	Section 3: Microservices - Multi Choice Questions	5
Section 4: Spring Boot - Multi Choice Questions	5	Section 4: Problem Solving - Coding	60
Section 5: Problem Solving - Coding	50	Section 5: Angular	50
Section 6: Angular	50		
<b>Total</b>	<b>180</b>	<b>Total</b>	<b>180</b>

Final HackerRank assessment			
Java sections	Duration (In minutes)	DotNet sections	Duration (In minutes)
Section 1: Data Structures and Algorithms - Coding	35	Section 1: Data Structures and Algorithms - Coding	35
Section 2: Problem Solving - Coding	50	Section 2: Problem Solving - Coding	50
Section 3: Java - Multi Choice Questions	15	Section 3: C# - Multi Choice Questions	15
Section 4: Microservices - Multi Choice Questions	15	Section 4: Microservices - Multi Choice Questions	15
Section 5: Spring Boot - Multi Choice Questions	30	Section 5: WebApi - Multi Choice Questions	30
Section 6: Angular	50	Section 6: Angular	50
<b>Total</b>	<b>195</b>	<b>Total</b>	<b>195</b>

**1. All program details are available [here](#).**

**2. Are the learnings mandatory to take up the MCQ assessments?**

A. No. The learnings are recommendation only and not mandatory. If you're confident to take up the assessments without the learning, it can be done.

**3. Are there multiple attempts for the MCQ assessment? If so, which score will be considered?**

A. Yes, three attempts will be given for every MCQ assessment. The last score of every assessment will be considered for completion score.

**4. Can I work on the project from Day 1?**

A. Yes, you can. Git Lab is available from Day 1. Hence coding can be done and saved in the repository.

**5. Whom do we contact for any query?**

A. KBA & Project case study requirement – [GenCDigitalHonors@cognizant.com](mailto:GenCDigitalHonors@cognizant.com)

**6. What is the passing criteria for ADM FSE0 as part of this program?**

A. The program has 2 steps of completion. The first part is to enter ADM Service Line (SL). This can be achieved by getting a minimum average of 70% in the MCQ type assessment, a minimum of 70% in the Project case study and a minimum of 50% in the HackerRank assessment. All these individual components put together forms the passing criteria.

**7. Will there be trainer support during the project phase?**

A. Yes, there would be minimal trainer support for the query clarification before/during the project phase.