Synergetics IT services india pvt. ltd.

Learning Plan for Transforming Testers to Developers for JP Morgan Chase



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Learning Plan for transforming Testers to Developers

# Objectives

The core objective of the below Learning Plan is as below

* Skill and Enable Testing team to understand requirements and write code effectively
* Ensure Code quality with usage of UML Diagrams and Design Patterns
* Ensure end-to-end understanding and implementation of Agile Methodology using Java Technologies

# Pre-requisites

The participants attending this must have the knowledge & skills on the following technologies that are pre-requisites for attending the modules of this course.

* Basic Programming Skills
* Java Basics
* Web Fundamentals
* Devops Fundamentals

# Skill Gap Analysis:

* Skill Gap Analysis would be done using a pre-requisites assessment before the start of the program delivery
* Any corrections to the curriculum or delivery will be done based on the results of the pre-program assessments
* After every module completion there would be a Post Assessment to ensure success of knowledge transfer and identify gaps for corrective measures

# Delivery Methodology

The delivery methodology would be broken up into multiple sections focussing on below aspects:

* **Knowledge Transfer** – The knowledge transfer would be done using effective mechanism of Concept Visuals, Active Experimentation and Active Development. They would also be provided extra reading material as industry recognized web sources and documentation on respective topics to reinforce learning. The sessions would be interactive with understanding, implementation and code assignments. The session would be interlaced with technical videos and games which would ensure participation of every participant.
* **Skilling** – Team based learning and implementation approach would help to get the real-world exposure of projectized delivery mechanism and challenges faced during development. Teams would be presenting their module and project implementation to the entire team. Their presentations would involve discussions and debates about choosing a specific architecture or design pattern.
* **Aptitude** – Regular summative assessment at end of every module would validate the ensure the learning and understanding has happened correctly. Coding standards would be introduced at every level and would be checked during the code reviews by the trainer.
* **Attitude** – Detailed Participant evaluation captures various soft skills and behaviour exhibited during the implementation of various modules assigned to the team. There would be specific hunt assignments and self-learning topics assigned to teams to work on during every module.

# Learning Plan – Knowledge Building and Skilling

The learning plan is made up of different modules covering the technologies & tools required to be a developer for the Java Learning Plan. The technology curriculum and learning objectives are given below along with the duration for each module.

|  |  |  |
| --- | --- | --- |
| **Topics** | **Objectives** | **Days** |
| **Module 1 - Programming Fundamentals****and implementation using Java** | | **6** |
| Programming Fundamentals | Participants will understand the basic programming elements through Pseudocode and Flow charts | 1 |
| Object Oriented Programming with Java - I | Participants will understand the implementation of earlier discussed programming constructs using Java Programming Language. Focus here would be on language constructs, IO and Collections. | 4 |
| **Assessment**  *MCQ - Test the knowledge acquired foundational concepts*  *Design Challenge – Create basic applications using Java Collections* | | 1 |
| **Module 2 - OO Programming with Java** | | **6** |
| RDBMS Fundamentals | Participants will understand the Foundational aspects of RDBMS and relevance of data sources in enterprise applications. | 2 |
| Object Oriented Programming with Java - II | Participants will get knowledge of developing database driven application using Java | 2 |
| Unit Testing using JUnit | Learn usage of Junit with developed Java classes and methods | 1 |
| **Assessment**  *MCQ - Test the knowledge acquired on Java programming fundamentals*  *Code Challenge – Test implementation understanding by giving small scenarios to write code* | | 1 |
| **Module 3 – Building Web Development Foundation** | | **6** |
| Web Concepts | Understand the foundational aspects and purpose of Web components. | 3 |
| Client-Side Programming | Understand the foundational aspects Client-Side  Programming | 2 |
| **Assessment**  *MCQ - Test the knowledge acquired on Web Concepts*  *Code Challenge – Test UI development and implementation skills using a web project* | | 1 |
| **Module 4 - Developing Java EE applications** | | **6** |
| Developing Java EE Application | Participants will be understanding the code resources for Developing Java EE Application focusing on Servlets and JSPs. | 5 |
| **Assessment**  *MCQ - Test the knowledge acquired on Java EE application*  *Code Challenge – Test Server-side core services and components implementation skills using Layered Architecture* | | 1 |
| **Module 5 – Application Design with OOAD and UML** | | **6** |
| Overview of OO Analysis and Design | Learn the importance of Analysis and Designing before developing complex applications | 1 |
| UML and modelling | Standardized modelling using UML diagrams and implement using tool like Star UML | 2 |
| Design Patterns | Understand and Implement GOF design Patterns | 2 |
| **Assessment**  *MCQ - Test the knowledge acquired on OOAD, UML*  *Code Challenge – Test design and implementation skills using a complex project and implement assigned design patterns* | | 1 |
| **Module 6 – Project Readiness initiation and using ORM for Development** | | **6** |
| Project Assignment and primary resource creation | Understand the case study and create primary resources like ER Diagrams, UML – Use Case, Activity and Class Diagrams. | 2 |
| Object Relational Mapping using JPA | Understand and implement Object Relational Mapping using JPA | 3 |
| **Assessment**  *MCQ - Test the knowledge acquired on ORM using JPA*  *Code Challenge – Test core services implementation skills using ORM and JPA* | | 1 |
| **Module 7 - Development using Spring 5** | | **6** |
| Spring 5 | Understand and implement core resources of Spring 5 | 2 |
| Spring 5 Security for Java EE Web Application | Understand and implement Spring 5 Security for Java EE Web Application | 0.5 |
| Java Bean Validation (JSR 349) | Understand Java Bean Validation (JSR 349) | 0.5 |
| Spring Boot | Understand and implement Spring Boot components | 1 |
| Web Service Essentials and REST | Understand and implement Web Service Essentials and REST | 1 |
| **Assessment**  *MCQ - Test the knowledge acquired on Spring Framework Components*  *Code Challenge – Test core services implementation skills using Spring Framework* | | 1 |
| **Module 8 – UI Development using Angular 7** | | **6** |
| Responsive Web Designing with Angular 7 | Understand and implement Responsive Web Designing with Angular 7 | 4 |
| Integration of Angular 7 with Spring REST | Understand and resolve integration challenges between Angular 7 and Spring REST | 1 |
| **Assessment**  *MCQ - Test the knowledge acquired on Angular Framework Components*  *Code Challenge – Test UI implementation skills using Angular Framework* | | 1 |
| **Module 9 – Agile Development and Testing** | | **6** |
| Agile Development | Learn significance of Agile methodology and mapping with real life challenges. | 2 |
| Code Repository using Git Hub | Understand and implement code repository using Git Hub | 1 |
| UI testing with Selenium | Understand and implement UI testing with Selenium | 1.5 |
| Cucumber and BDD | Implement testing using Cucumber and BDD | 1 |
| **Assessment**  ***MCQ*** *- Test the knowledge acquired on Selenium, Cucumber, BDD and on Agile concepts* | | 0.5 |
| **End to end mini project design and implementation – Final Assessment** *– Test knowledge and skills acquired by asking participants to develop a complete project design and implementation using DevOps Practices* | | **6** |

# Learning Delivery & Assessment Details

## Learning Delivery

The training will be delivered as a combination of concepts and Hands on. We follow a methodology of CV/AE/AD

* Concept Visualization – to explain the use of the technology feature – why, when, where to use it
* Active Experimentation – implementation of the technology feature, with code assignments
* Application Development – use of the feature in an application scenario

## Knowledge/Skills Assessment

The assessment strategy will comprise of the following:

### Module based assessments

This will be used to judge and score the conceptual understanding and implementation skills the students would have gained at the end of each major technology module. This will consist of the following types of assessment:

* Code Assignment – these will be code challenges that need to be completed by each individual student and rated by the trainer
* Written assessment – Exam comprising of about 25-30 MCQ questions on module

### End of course Assessment

This assessment will prepare the students for the real-world application scenarios and help build implementation skills in design, coding, and integration of the different technology and tools learnt. A Case study will be given and students will need to design and implement the solution using the tools and technologies learnt. We will use Role play and introduce change management also as part of the delivery.

### Assessment Reports

Assessment reports would be shared weekly on Tuesday’s which would have details of Formative and Summative Assessments conducted for the participants during the week. The report would contain details participant status as on date, previous week results, graph of the entire batch performance, ranking of participants. The complete score card for an individual can be retrieved from the report.

### Delivery Plan Execution Tracking

There will be a designated Project Manager assigned to the project who would keep track of execution and ensure smooth delivery as planned. Any escalations would be handled by the Project Manager and would be discussed with SPOC from customer side.