

Curriculum

Full Stack Architecture

Certificate

Program



DACH
Dalilna Chools

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY I TO 5

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 1	Module 1 – Introduction to Programming	• Introduction to programming languages • Structure of memory • High Level programming languages history • Execution of program in memory	Concepts	-		Cases Study I – End to Java & Java Script in Programming
Day 2	Module 1 – Introduction to Java	• Object orientation • Class and objects • Methods and its types • Main Method in Java • Main Method in Python • Architecture of Java • Features of Java • Advantages and disadvantages of Java	Eclipse IDE, JDK	-		
Day 3	Module 1 – Introduction to Python	• Architecture of Python • Features of Python • Advantage & disadvantage of Python	Eclipse IDE, JDK	-		
Day 4	Module 2 - Basics of Java	• Variables • Literals • Identifiers • Loops • Identifiers	Eclipse IDE, JDK	Y		
Day 5	Module 2 – Basics of Java	Pattern based programming	Concepts	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 6 TO 10

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 6	Module 2 – Array data structures	• Introduction to array • 1D array • 2D array • 2D jagged array	Eclipse IDE, JDK	Y		
Day 7	Module 2 – Array data structures	• 3D array • 3D Jagged array • Arrays class	Eclipse IDE, JDK	Y		
Day 8	Module 3 – Strings in Java	• Memory segregation on RAM • Introduction to Java string • Immutable strings using string class	Eclipse IDE, JDK	Y		
Day 9	Module 3 – Strings in Java	• Mutable strings using StringBuffer class • Mutable strings using StringBuilder class • Practice programs on strings	Eclipse IDE, JDK	Y		
Day 10	Module 4 – Static Segment	• Method overloading • Static variable • Static block • Static methods	Eclipse IDE, JDK	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 11 TO 15

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 11	Module 5 – Pillars of object orientation	- Encapsulation - Constructors	Eclipse IDE, JDK	Y		
Day 12	Module 5 – Pillars of object orientation	- Inheritance in Java - Rules of inheritance - Types of methods in inheritance	Eclipse IDE, JDK	Y		
Day 13	Module 5 – Pillars of object orientation	- Delegation model - Constructor execution in inheritance	Eclipse IDE, JDK	Y		
Day 14	Module 5 – Pillars of object orientation	- Polymorphism - Abstraction	Eclipse IDE, JDK	Y		
Day 15	Module 6 – Interface	- Rules of interface - Abstract class vs interface	Eclipse IDE, JDK	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 16 TO 20

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 16	Module 7 – Exception handling	- Error vs exception - Exception handling mechanisms - Try catch block	Eclipse IDE, JDK	Y		
Day 17	Module 7 – Exception handling	- Ducking of exception - Rethorwing of exception - Custom exception	Eclipse IDE, JDK	Y		
Day 18	Module 8 – Multi-Threading	- Thread - Thread scheduler - Single threaded programming	Eclipse IDE, JDK	Y		
Day 19	Module 8 – Multi-Threading	- Multi-Threading using thread class - Multi-Threading using runnable interface	Eclipse IDE, JDK	Y		
Day 20	Module 8 – Multi-Threading	- Race condition - Daemon threads - Problem with multi-threaded programming - Thread groups	Eclipse IDE, JDK	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 21 TO 25

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 21	Module 8 – Multi-Threading	- States of thread - Dead lock - Producer and consumer problem	Eclipse IDE, JDK	Y		
Day 22	Module 9 – Collections	- ArrayList - LinkedList	Eclipse IDE, JDK	Y		
Day 23	Module 9 – Collections	- ArrayDeque - PriorityQueue - TreeSet - HashSet - LinkedHashSet	Eclipse IDE, JDK	Y		
Day 24	Module 9 – Collections	- Sorting complex objects - Comparable interface - Comparator interface	Eclipse IDE, JDK	Y		
Day 25	Module 9 – Collections and maps	- Collections class - HashMap - LinkedHashMap - TreeMap	Eclipse IDE, JDK	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 26 TO 30

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 26	Module 10 – Java 8 features	• Functional interface • Creating object of interface and abstract class • Optional classes • Stream API • Data and time API	Eclipse IDE, JDK	Y	Capstone Project I – Exploring JAVA	
Day 27	Project	Collection based project	Eclipse IDE, JDK	Y		
Day 28	Project	Collection based project	Eclipse IDE, JDK	Y		
Day 29	Module 11 – Mysql	• - Introduction to databases • - History of database • - DBMS and its features • - DBMS disadvantages • - RDBMS and its features • - MySQL as RDBMS	Mysql version 8.0 and SQL Yog	Y		
Day 30	Module 11 – CRUD operations (table and database level)	• Create database • View Databases • Drop database • Create table • Alter table • Truncate table • Drop table	Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 31 TO 33

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 31	Module II – DML statement	- Types of Statements in SQL, revision on DDL - DML statements (insert), DML statements (update), DML statements (delete)	Mysql version 8.0 and SQL Yog	Y		Case Study 2 – Exploring My SQL Vs No SQL
Day 32	Module II – DQL statement	- DQL statements (select), operators in MySQL - DL statements (select with order by clause) - DQL statements (select with distinct clause)	Mysql version 8.0 and SQL Yog	Y		
Day 33	Module II – DQL statement	- DQL statements (select with aggregate functions) - Aliases in MySQL, Wildcards / pattern matching, DQL statements	Mysql version 8.0 and SQL Yog	Y		
Day 33	Module II – DQL statement	(Select with IN & NOT IN clauses), conditional statements - DQL Statements (select with group by clause) - DQL Statements (select with group by and having clause) - DQL Statements (select with between clause) - Keys and types of keys, normalization in MySQL	Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 34 TO 35

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 34	Module 11 – DQL statement	• DQL Statements (select with group by clause) • DQL Statements (select with group by and Having clause) • DQL Statements (select with between clause) • Sub Queries, Left Join • Right Join • Self Join • Inner Join	Mysql version 8.0 and SQL Yog	Y		
Day 35	Module 12 – Advanced SQL	• Introduction to views • Creating views • Introduction to Indexes • Creating index • Stored procedure • Triggers ○ For each statement in SQL (in coding how to insert ,delete and update) ○ SQL features, (make connection to the database, how to use insert, delete and update in backend)	Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 36 TO 40

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 36	Module 13 – HTML basics	- The HTML, head, title, & body tags - Headings, paragraphs, & lists - The strong & em tags - The doctype, the lang attribute	VS Code	Y	Capstone Project 2 – MySQL	
Day 37	Module 13 – HTML basics	- The meta tag & the Unicode character set - Anchor tags & hrefs - Linking to other websites - Linking to pages within a website - Opening a link in a new browser window/tab, the break tag	VS Code	Y		
Day 38	Module 13 – HTML basics	- The image tag & source attribute, Using the width, height, & alt attributes - Using horizontal rules, the style tag, Tag selectors - The font-size, font-family, color, & line-height properties, Hexadecimal color codes	VS Code	Y		
Day 39	Module 14 – CSS selectors	- The class attribute - CSS class selectors - The span tag CSS opacity	VS Code	Y		
Day 40	Module 14 – Div tags, ID selectors, & basic page formatting	- Dividing up content with the div tag, Assigning IDs to divs - Setting width & max-width, CSS background-color - Adding padding inside a div, centering content, CSS borders, CSS shorthand & the DRY principle	VS Code	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 41 TO 45

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 41	Module 14 – Using browser developer tools	- Opening the DevTools in Chrome - Editing HTML in the DevTools elements panel - Enabling, disabling, & editing CSS in the DevTools - Using DevTools to fine-tune your CSS - Hexadecimal shorthand	VS Code	Y		
Day 42	Module 15 – JavaScript	- What is JavaScript, JavaScript history? - Relation between JavaScript and ECMAScript, Versions of JavaScript - Syntax review, Keywords and reserved words, Variable declaration, Variable scope, Block scope, Primitive values, reference values, types, type conversion	VS Code	Y		
Day 43	Module 15 – JavaScript	- Expressions (arithmetic, relational, logical, assignment and others) - Operators overview - Flow control and conditionals - Loops and iteration - Jumps	VS Code	Y		
Day 44	Module 15 – JavaScript	- Error handling, Throwing errors - Error handling, number literals, number object, number methods - Math object, date object, working with numbers	VS Code	Y		
Day 45	Module 15 – JavaScript	- String literals, string object, string methods - Working with strings, creating and populating arrays - Array methods, working with arrays	VS Code	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 46 TO 50

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 46	Module 16 – JavaScript functions	- Defining functions, calling functions, functions as values, arguments and parameters, function scope, closures - Arrow functions, set object type, map object type, JSON	VS Code	Y	Capstone Project – 3 - JavaScript	
Day 47	Module 17 – Document object model	- Document structure - Selecting document elements and query selectors - Moving thorough DOM tree - HTML elements and attributes - Creating, changing and deleting nodes	VS Code	Y		
Day 48	Module 17 – Handling events, Ajax	- Event propagation - Event handlers registering and invocation, event object - Types of event, JavaScript and HTTP communication, synchronous and asynchronous requests	VS Code	Y		
Day 49	Module 18 – Angular	- Introduction to AngularJS, MVC Architecture & modular architecture - Conceptual overview of both the architecture - Setting up the Environment, first application, understanding ng attributes	VS Code	Y		
Day 50	Module 18 – Angular	- Number and string expressions - Object binding and expressions - Working with arrays, forgiving behavior, understanding data binding	VS Code	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 51 TO 55

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 51	Module 18 – Angular	- Conditional directives - Styles directives - Mouse and keyboard events directives	VS Code	Y		Case Study 3 – Understanding Express Vs Node Vs Angular Vs React
Day 52	Module 18 – Angular	- Understanding controllers, programming controllers & \$scope object - Adding behavior to a scope object, passing parameters to the methods - Having array as members in controller scope, nested controllers and scope inheritance, multiple controllers and their scopes	VS Code	Y		
Day 53	Module 18 – Angular	- Built-In filters, uppercase and lowercase filters, currency and number formatting filters, order by filter - Filter - Creating custom filter	VS Code	Y		
Day 54	Module 19 – J2EE - JDBC	- Introduction to JDBC - Types of drivers, statement interface - ResultSet interface, prepared statement interface	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 55	Module 19 – J2EE - JDBC	Crud operations using statement interface	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 56 TO 60

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 56	Module 19 – J2EE - JDBC	Crud operations using prepared statement interface	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y	Capstone Project 4 – J2EE & JDBC	
Day 57	Module 19 – J2EE - JDBC	Transaction management in JDBC	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 58	Module 20 – J2EE - Servlets	Web application architecture servlet chaining	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 59	Module 20 – J2EE - Servlets	Servlet chaining using MVC sessions	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 60	Module 20 – J2EE - Servlets	Servlet JDBC cookies	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 61 TO 65

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 61	Module 21 – Hibernate	- Architecture of Hibernate - Crud operations	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 62	Module 21 – Hibernate	Mapping in Hibernate	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 63	Module 21 – Hibernate	Mapping in Hibernate	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 64	Module 22 – Servlet Hibernate	Project based on Servlet Hibernate	Eclipse IDE, JDK Mysql version 8.0 and SQL Yog	Y		
Day 65	Module 23 – Spring Core	- Architecture of spring - EJB - Inversion of control	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 66 TO 70

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 66	Module 23 – Spring Core	• Dependency Inject using setters • Dependency Inject using constructors	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 67	Module 23 – Spring MVC	Spring MVC architecture and example	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 68	Module 23 – Spring Boot	• Annotations • Eureka server integration	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 69	Module 23 – Spring Boot	Spring boot JDBC template	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 70	Module 23 – Spring Boot	Spring data JPA	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 71 TO 75

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day 71	Module 23 – Spring Boot	Spring rest STS, Java 8 and above	Mysql version 8.0 and SQL Yog	Y	Capstone Project 4 – Spring Boot	
Day 72	Module 23 – Spring Boot	Spring rest	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 73	Module 23 – Spring Boot project	Project based on spring boot and JPA/JDBC template	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day 74	Module 23 – Spring Boot project	Project based on spring boot and JPA/JDBC template	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		
Day75	Module 23 – Spring Boot project	Project based on spring boot and JPA/JDBC template	STS, Java 8 and above Mysql version 8.0 and SQL Yog	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 76 TO 80

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day-76	Module 24 – MongoDB	- What in NoSQL? - Difference between NoSQL and RDBMS - Benefits of NoSQL - Design goals - The mongo shell - JSON introduction - JSON structure	MongoDB Community Server and MongoDB Compass	Y	Capstone Project – 5 – Exploring DBMS	
Day-77	Module 24 – MongoDB	- What in NoSQL? - Difference between NoSQL and RDBMS - Benefits of NoSQL - Design goals - The mongo shell - JSON introduction - JSON structure	MongoDB Community Server and MongoDB Compass	Y		
Day-78	Module 24 – MongoDB	- What in NoSQL? - Difference between NoSQL and RDBMS - Benefits of NoSQL - Design goals - The mongo shell - JSON introduction - JSON structure	MongoDB Community Server and MongoDB Compass	Y		
Day-79	Module 24 – MongoDB	- Performance using indexes - Monitoring and understanding performance - Performance in sharded environments	MongoDB Community Server and MongoDB Compass	Y		
Day-80	Module 24 – MongoDB	- Performance using indexes - Monitoring and understanding performance - Performance in sharded environments	MongoDB Community Server and MongoDB Compass	Y		

TRAINING MODULES- FULL STACK ARCHITECTURE PROGRAM – DAY 81

Days	Main Topics	Subtopic	Tools – Software's or Templates	Assignment (Y/N)	Capstone Project (Y/N)	Research / Case Studies
Day-81	Final Assessment	Final Assessments - online - 3 hours - pass mark based on group grading Vs market benchmarking				
	Capstone Project Discussion	Project discussion				

Thank You

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