

Day	Course Content	Topics	Sub Topics
<b>Induction - 1 days</b>			
Day 1		Induction	
<b>SQL - 6 Days</b>			
Day 2-7	SQL – Day 1	RDBMS - Normalization, ER Diagram	Relational database concepts Terminology Entiry Relationship Model Database anomalies Normalization types
	SQL – Day 2	SQL - DDL (Create, Alter, Drop), DM	Introduction to query Creating,Modifying and deleting tables Defining constraints Inserting,Updating and deleting records
	SQL – Day 3	SQL - Basic Select queries, Conversion Functions, Single row and Multirow Functions	Select statements Using where clause with select Implicit and explicit data type conversion General functions, Conversion Functions
	SQL – Day 4	SQL - Joins, groupBy, Aggregate Fun	Aggregation functions-AVG,SUM,MIN,MAX,COUNT etc. Using group by clause Joining multiple tables
	SQL – Day 5	SQL - Subqueries & Views	Writing single function subquery Using Group with subquery Creating/Modifying views
	SQL - Day 6	SQL - Indexs & Synonyms	Creating indexes Retrieving index information Concept of synonyms
<b>PLSQL - 5 days</b>			

Day 8 - 12	PLSQL – Day 1	PLSQL - Introduction, Variables & Blocks	Introduction to PLSQL Variables types Various types of blocks and their role Writing block
	PLSQL – Day 2	PLSQL - Procedures & Functions	Role of Procedures and functions Writing, Executing & Dropping Procedures & functions Differentiate between two IN OUT Parameters
	PLSQL – Day 3	PLSQL - Cursor & Exception Handling	Use of Cursor Types of Cursor Various actions of Cursor Creating Cursor Exception handling types of exceptions Raising exception
	PLSQL – Day 4	PLSQL - Triggers	Role of triggers Types of triggers Writing triggers
	PLSQL – Day 5	PLSQL - Collections & Packages	Concept of collections Collection types Package benefits Creating packages
<b>Java – 19 Days</b>			
Day 13 - 31	Java – Day 1	Introduction and fundamentals of java	Fundamentals - Variables, Data Types, Loops, Conditional Statements (if-else, switch case), methods, Comments, Arrays

	Java – Day 2	Classes and Objects in Java	Classes and Objects <ul style="list-style-type: none"> <li>- Introduction to OOPs Concepts</li> <li>- Class concept and creation of Class</li> <li>- Object, how to create object, how to access variables</li> <li>- Concept of getter/setters</li> <li>- Concept of private access specifier</li> <li>- Concept of Constructor</li> </ul>
	Java – Day 3	Classes and Objects in Java	Core Java - Classes and Objects <ul style="list-style-type: none"> <li>- Static variables and Methods</li> <li>- private Constructor</li> <li>- Singleton Object</li> <li>- Polymorphism : Method Overloading</li> <li>- String class</li> <li>- finally keyword</li> </ul>
	Java – Day 4	Inheritance and Composition	Inheritance & Composition <ul style="list-style-type: none"> <li>- Concept of is-a and has-a relationship</li> <li>- extends keyword, use of super to call constructor and super class methods</li> <li>- Polymorphism - Method Overriding</li> <li>- Concept of Upcasting and Downcasting</li> </ul>
	Java – Day 5	Inheritance and Composition	Inheritance <ul style="list-style-type: none"> <li>- Abstract Classes</li> <li>- Interfaces &amp; their uses</li> <li>- Composition &amp; Aggregation</li> </ul>
	Java – Day 6	Exception Handling	Core Java - Exception Handling <ul style="list-style-type: none"> <li>- Exception concept</li> <li>- Checked and Unchecked Exception</li> <li>- exception keywords - try,catch, finally, throw, throws</li> <li>- Exception propagation</li> <li>- Custom Exceptions</li> </ul>

	Java – Day 7	Packages	Core Java - packages - What are packages - Need for packages - In-built packages - How to use packages - Creating packages - Access specifiers (public, default, protected)
	Java – Day 8	Inner Classes	Core Java - Inner classes - Different Types of Inner Classes Static, Non-static, Method Local and Anonymous Inner Class - Uses of Inner Class
	Java – Day 9	Functional Programming	Core Java - Functional Programming - Concept of Functional Programming - Why it has been added - Lambda Functions - Anonymous class vs Lambda - Method references - Concept of Functional Interfaces - Predefined Functional Interfaces like Predicate, Supplier, Consumer
	Java – Day 10	Data Structure	Core Java - Data Structure - Different Data Structures and Sorting Algorithms - Different Data Structures available in Java
	Java – Day 11	Data Structure	Core Java - Data Structure - Implementation of LinkedList and Tree in Java - Implementation of Iterator Interface
	Java – Day 12	Collection Framework	Core Java - Collections - Collection Framework in Java - Different Interfaces and Classes in Collection Framework - Difference between different Collection Classes - Implementation of LinkedList and ArrayList - Sorting List using Comparable and Comparator - Use of forEach loop

	Java – Day 13	Collection Framework	Core Java - Collections <ul style="list-style-type: none"> <li>- Implementation of HashSet</li> <li>- use of Equals and hashCode</li> <li>- Implementation of TreeSet</li> <li>- HashMap &amp; TreeMap implementation</li> </ul>
	Java – Day 14	Multithreading	Core Java - multithreading <ul style="list-style-type: none"> <li>- Concept of Multithreading</li> <li>- Java as multithreading Language</li> <li>- Creating Thread using Thread Class &amp; Runnable Interface</li> <li>- Lifecycle of Thread</li> <li>- Use of different Thread methods</li> <li>- Synchronization concept</li> <li>- Mutual Exclusion &amp; Cooperation among threads</li> </ul>
	Java – Day 15	IO	Core Java - IO <ul style="list-style-type: none"> <li>- Input Output in Java</li> <li>- Different Classes available for IO</li> <li>- File Reading and Writing</li> <li>- Serializable concept</li> </ul>
	Java – Day 16	Maven	Core Java - Maven <ul style="list-style-type: none"> <li>- Maven as a build tool</li> <li>- Concept of Dependency Management</li> <li>- POM.xml and its components</li> <li>- How to create a JAR file using Maven and use it</li> </ul>
	Java – Day 17	Junit	Core Java - Junit <ul style="list-style-type: none"> <li>- Concept and Unit Testing and its requirement</li> <li>- Junit Framework as Defacto Java Unit Testing Framework</li> <li>- Creation of Test Cases</li> <li>- Assert Methods</li> <li>- Test Fixtures like setup and TearDown</li> <li>- Exception Handling in Test Cases</li> <li>- Test Case Timeout</li> </ul>

	Java – Day 18	JDBC	Core Java - JDBC <ul style="list-style-type: none"> <li>- Need of JDBC</li> <li>- JDBC Architecture and Interfaces</li> <li>- JDBC Drivers</li> <li>- Establishing Connection and Executing Database commands</li> <li>- Retrieving result from Database and processing it using ResultSet</li> </ul>
	Java - Day 19	JDK 11 Features	"Core Java - JDK 11 Features <ul style="list-style-type: none"> <li>- Running Java File with single command</li> <li>- New utility methods in String class</li> <li>- Local-Variable Syntax for Lambda Parameters</li> <li>- Nested Based Access Control</li> <li>- A No-Op Garbage Collector "</li> </ul>
<b>Web Technologies – 10 Days</b>			
Day 32 - 41	Web – Day 1	HTML, CSS	HTML, CSS <ul style="list-style-type: none"> <li>- HTML 5 Structure</li> <li>- Different HTML tags</li> <li>- Form Tags</li> </ul> CSS Styling <ul style="list-style-type: none"> <li>- Different ways of creating and adding CSS</li> <li>- CSS Selectors</li> <li>- CC Styles</li> </ul>

	Web – Day 2	JavaScript	JavaScript - JavaScript as Scripting Language, Uses of JavaScript - script tag, External JavaScript file - Variables, datatypes, loops, conditional Statements, methods - Event Handling - Form Validation
	Web – Day 3	jQuery & BootStrap	jQuery & Bootstrap - jQuery as JavaScript Library - Adding jQuery to HTML page - \$document.ready() function - jQuery Datatable Bootstrap - Bootstrap CSS library
	Web – Day 4	Introduction to JEE Architecture & Basics of Servlet	Introduction to JEE Architecture & Basics of Servlet
	Web – Day 5	Basic Request-Response processing, Headers, Error Handling	Basic Request-Response processing, Headers, Error Handling
	Web – Day 6	Servlets - Request forward & include, ServletContext, ServletConfig	Servlets - Request forward & include, ServletContext, ServletConfig
	Web – Day 7	Servlets - Session Management	Servlets - Session Management
	Web - Day 8	JSP - Basics of JSP, Implicit Objects	JSP - Basics of JSP, Implicit Objects,
	Web - Day 9	JSP - Expression Language, Custom tags	JSP - Expression Language, Custom tags
	Web - Day 10	JSP - JSTL, MVC Architecture	JSP - JSTL, MVC Architecture
<b>Spring-Hibernate– 15 Days</b>			

Day 42 - 56	Spring – Day 1	Spring Core	<p>Spring Core</p> <ul style="list-style-type: none"> <li>- What Spring Framework is?</li> <li>- Uses and Benefits of Spring Framework</li> <li>- Different Modules available</li> <li>- Concept of IOC and Dependency Injection</li> </ul>
	Spring – Day 2	Spring Core	<p>Spring Core</p> <ul style="list-style-type: none"> <li>- BeanFactory and ApplicationContext</li> <li>- Spring XML Configuration</li> <li>- Concept of Manual and Auto Wiring of beans</li> <li>- Property Editors</li> <li>- Lifecycle of Beans</li> </ul>
	Spring – Day 3	Spring Core	<p>Spring Core</p> <ul style="list-style-type: none"> <li>- Introduction to Annotations for Configuration</li> <li>- @Required, @Autowire annotations</li> <li>- Java Configuration</li> <li>- ComponentScan</li> <li>- @Configuration, @Component, @Service, @Repository Annotations</li> </ul>



	Spring – Day 4	Spring AOP	<p>Spring AOP</p> <ul style="list-style-type: none"> <li>- Introduction to AspectOriented Programming</li> <li>- Need for AOP</li> <li>- AOP Frameworks</li> <li>- Aspects, PointCuts, Advice, JoinPoints terms</li> <li>- Integration of AspectJ framework with Spring</li> <li>- Configuration using Annotations and XML</li> </ul>
	Spring – Day 5	Spring MVC	<p>Spring MVC</p> <ul style="list-style-type: none"> <li>- Spring MVC Architecture</li> <li>- Concept of FrontController (DispatcherServlet)</li> <li>- Controller Mappings</li> <li>- Creating first Spring MVC application</li> <li>- ViewResolver Configuration</li> <li>- Difference between forward and Redirect</li> <li>- Model, ModelMap &amp; ModelAndView</li> </ul>
	Spring – Day 6	Spring MVC	<p>Spring MVC</p> <ul style="list-style-type: none"> <li>- Getting Data from Query String</li> <li>- @RequestParam, @PathVariable Annotations</li> <li>- Getting Form Data and Mapping it with ModelAttribute</li> <li>- Spring Form Tags</li> <li>- Binding Spring Bean to Form</li> <li>- Validation using Validator Interface and Annotations</li> </ul>

	Spring – Day 7	Spring MVC	Spring MVC <ul style="list-style-type: none"> <li>- Binding PropertyEditors</li> <li>- Internationalization</li> </ul>
	Spring – Day 8	Spring Security	Spring Security <ul style="list-style-type: none"> <li>- Introduction to Spring Security Framework</li> <li>- Basic Authentication and Authorization Concepts</li> <li>- Spring Security - Basic Authentication</li> <li>- Redirect to different pages after login</li> <li>- Logout</li> <li>- AccessDenied Page</li> <li>- Default passwordEncoder</li> </ul>
	Spring – Day 9	Spring Security	Spring Security <ul style="list-style-type: none"> <li>- Form Based Security - Error Handling</li> <li>- Custom Login Form</li> <li>- JDBC Authentication</li> </ul>

	Hibernate – Day 10	Introduction to Hibernate	<p>Introduction to Hibernate</p> <ul style="list-style-type: none"> <li>- Introduction to ORM Frameworks</li> <li>- Need and Benefits of ORM Frameworks</li> <li>- Hibernate as an ORM Framework</li> <li>- Hibernate Architecture</li> <li>- Hibernate Configuration using hibernate.cfg.xml</li> <li>- Concept of Dialects</li> <li>- SessionFactory and Session</li> <li>- States of Objects in Hibernate Session</li> <li>- First Hibernate Example</li> <li>- Concept of Entity and Annotations</li> </ul>
	Hibernate – Day 11	Crud Operations & Mappings	<p>Crud Operations &amp; Mappings</p> <ul style="list-style-type: none"> <li>- Session Methods like save, update, delete, get</li> <li>- Getting complete table data</li> <li>- How to map List, Set and Map using Element Collection</li> <li>- Primary Key generation techniques</li> <li>- Composite Primary Key</li> <li>- Embedded and Embeddable</li> </ul>

	Hibernate – Day 12	Mappings in Hibernate	<p>Mappings in Hibernate</p> <ul style="list-style-type: none"> <li>- OneToOne, OneToMany, ManyToMany mappings</li> <li>- Difference between Eager and Lazy Fetching</li> <li>- Cascade Types and Their Effects</li> </ul> <p>Inheritance Mapping</p> <ul style="list-style-type: none"> <li>- Different Inheritance Strategies and their pros and cons</li> <li>- MappedSuperclass</li> </ul>
	Hibernate – Day 13	Hibernate Query Language	<p>Hibernate Query Language</p> <ul style="list-style-type: none"> <li>- HQL for getting different Type of Data</li> <li>- Query Parameters and NamedParameters</li> <li>- Named Queries</li> <li>- Native SQL Queries</li> <li>- Joins</li> </ul>

	Hibernate – Day 14	Caching & Spring-Hibernate Integrat	<p>Caching &amp; Spring-Hibernate Integration</p> <p>Spring - Hiberante Intergation</p> <ul style="list-style-type: none"> <li>- Configuration of LocalSessionFactoryBean</li> <li>- Executing Queries and displaying Results</li> </ul> <p>Caching</p> <ul style="list-style-type: none"> <li>- Need and Benefits of Caching</li> <li>- Session as First-Level Cache</li> <li>- SessionFactory Second-Level Cache</li> <li>- Configuring Second-Level Cache providers</li> <li>- Query Cache</li> </ul>
	Hibernate – Day 15	Transaction Management	<p>Spring Transaction Management</p> <ul style="list-style-type: none"> <li>- Need for Spring Transaction Management</li> <li>- @Transactional Annoation</li> <li>- Propagation Levels</li> <li>- Isolation Levels</li> <li>- Configuration Hibernate Transaction Manager with Spring</li> </ul>