

Database

Introduction

- What Is Database?
- What is Database Management System (DBMS)?
- What is Relational Model?
- Introduction to RDBMS.
- Brief on E.F CODD.

Datatypes and Constraints

- What are Datatypes?
- Types and Examples.
- How to use.
- What are Constraints?
- Types and Examples.
- How to use.

Statements in SQL

- Data Definition Language (DDL)
- Data Manipulation Language (DML)
- Transaction Control Language (TCL)
- Data Control Language (DCL)
- Data Query Language (DQL)

Software installation

- Installing and set up of software
- Working on Oracle 10g.

Data Query Language (DQL)

- Select
- From
- Where
- Group By
- Having
- Order By

Operators

- Types and Examples

Functions in SQL

- Single Row Functions
 - Multi Row Functions
1. Max ()

2. Min ()
3. Sum ()
4. Count ()

Sub Query

- Introduction to Sub Query
- Working of Sub Query
- Query Writing and Execution
- Types of Sub Query
 1. Single Row Sub Query
 2. Multi Row Sub Query
- Nested Sub Query.

Pseudo Columns

- Introduction on Pseudo Columns
- ROWID
- ROWNUM
- Working and Usage.

JOINS

- What Is Join?
- Types of Joins.
- Cartesian Join
- Inner Join
- Outer Join
- Self-Join
- Queries and Examples.

Co- Related Sub Query

- Working and Examples

Data Definition Language (DDL)

- Create
- Rename
- Alter
- Truncate
- Drop

Data Manipulation Language (DML)

- Insert
- Update
- Delete

Transaction Control Language (TCL)

- Commit
- Save point
- Rollback

Data Control Language (DCL)

- Grant
- Revoke

Normalization

- Introduction to Normalization
- Types of Normal Forms
- Examples.

E R Diagrams

- Introduction to ERD
- Examples.

[Core Java](#)

Introduction to programming

- Introduction to java
- JDK installation
- Keywords, Identifiers, variables
- Operators
- Method/Functions
- Flow Control Statements
- Arrays
- Strings
- Interactive programs in java using Scanner

Object Oriented Programming System

- Classes and Objects
- Object creation
- Reference variable
- Global and local variables
- Constructors
- Aggregation
- Composition
- Inheritance
- Method Overloading
- Method Overriding

- Abstract classes
- Interfaces
- Typecasting
- JVM architecture
- Polymorphism
- Abstraction
- Java packages
- Access Specifies

Java Built-in packages and API

- Overview of java API
- Object class
- String, String Buffer and String Builder
- Exception Handling
- Threads and multithreading
- Wrapper Classes
- Data Structures
- Java Collection Frameworks
- File Handling
- Serialization
- Garbage Collector
- Encapsulation

[J2EE](#)

Introduction to JAVA EE:

- What is computer?
- What is an application?
- Types of application?
- What is standalone application?
- What is web application?
- What is network?
- What is internet?
- What is intranet?
- What is server?
- What is database?
- What is an api?
- What is J2ee?
- Types of api's
- JAVA EE 3-tier architecture
- JAVA EE 2-tier architecture.

JDBC:

- Introduction
- Steps to work with JDBC
- JDBC pre-requirements
- Installing MYSQL,DB server
- FIRST JDBC program

Drivers

- Introduction.
- What is a JAR file?
- About driver class
- How to load the driver class into the program
- Types of Driver

Db url

- What is url?
- Structure of db url

Connection interface

- Driver Manager class
- About the get connection method
- Connection object

JDBC objects and methods

- Introduction
- Dynamic and static sql queries
- Statement and prepared statement objects
- ExecuteQuery() and executeUpdate() methods

Result Set

- How to handle the result set object
- How to process the result set object

Closing of JDBC objects

- Why to close an object?
- How to close an object

SERVLET:

- Introduction
- What is web browser?
- What is web resources?
- Types of web resources
- What is web server?
- Installing of apache tomcat web server

About servlet

- Servlet introduction
- Creating the first servlet in web app
- Steps to create WAR file
- Build & Deployment process

Web URL

- Web url structure.
- Query string.
- HTTP & HTTPS protocols.
- Key elements of HTTP request and HTTP response
- HTTP methods.
- Difference between GET and POST.

Servlet Container

- About servlet containers & its advantages
- Request and response objects
- GetParameter() and getParameters() methods
- About XML
- About deployment descriptor(web.xml)

Servlet Hierarchy

- Generic servlet
- HTTP Servlet
- Difference between Generic servlet and HTTP Servlet
- Servlet life cycle
- Single thread model servlets
- Servlet context and servlet config
- Redirect, Forward and Include

Attributes

- What is an attribute?
- Need of attributes
- Types of attributes

Cookies

- Introduction
- Steps to create a cookie in the servlet
- Types of cookies
- Life cycle of cookies
- Application of cookies

Session

- Introduction
- Steps to create a session in the webapp

- Types of session
- Life cycle of session
- Application of session

JSP:

- Introduction
- How to create JSP
- Difference between Servlet and JSP

JSP Scripting Elements

- Scriptlet tag
- Expression tag
- Declaration tag

JSP implicit objects

- Request object
- Response object
- Config object
- Application object
- Session object

Exception handling in JSP

- About is `ErrorHandler` and `errorPage`

Jstl

- Introduction
- JSTL core tags
- JSTL function tags

Frameworks

Hibernate

- Hibernate Overview
- Hibernate-ORM
- Hibernate Architecture
- Hibernate Environment Setup
- Hibernate Configuration
- Hibernate Session
- Hibernate Mapping Files
- Hibernate Mapping Types
- Hibernate Annotation
- Hibernate Query Language

Springs:

- Introduction

- Why spring
- Spring modulus
- Spring application
- Spring in eclipse

Spring IOC

- IOC container
- Dependency injection
- Constructor injection
- Constructor injection dependent object
- Constructor injection with collection
- Constructor injection with collection 2
- Constructor injection with map
- Constructor injection in inheritance been
- Setter injection
- Setter injection dependent object
- Setter injection with collection
- Setter injection with collection 2
- Setter injection with map
- Injection with map 2
- Constructor injection versus setter injection
- Auto wiring
- Factory method

Spring MVC

- MVC introduction
- Multiple view pages
- Multiple controllers
- Model interface
- Request Param annotation
- Form tag library
- Form text field
- Form radio field
- Form checkbox
- Form drop-down list
- JDBC Template Example
- PreparedStatement
- ResultSetExtractor
- MVC CRUD Example
- SPEL Examples
- Variable in SPEL
- Spring MVC Validation

Web Services

Web Services

- Webservices Introduction
- What is Webservices
- Why Webservices
- Real Time Examples of Webservices
- Different Webservices
- SOAP
- REST
- About HTTPS
- Understanding SOAP & REST Webservices
- Requirement of Webservices
- Advantage of Webservices
- Understanding XML & JSON
- JSON to Java Object and Vice-versa using GSON framework
- XML to Java Object and Vice-versa using JAXB framework
- Understanding Xpath
- SOAP Webservice using Spring & Apache CXF
- REST Webservice using Spring-REST & Apache Jersey

Web Technology

Web Technology

- Introduction to Web-technology
- What is web?
- What is network?
- What is internet?
- What is web-development?
- What is browser?
- What is web-server?
- What is http?
- What is the use of http?
- What is html?
- What is website?
- What is web-page?
- Structure of Web
- Definition of all the points
- Install of Editors
- How to write program using editors

HTML-5

- Introduction
- Structure of html
- What is tags?
- Types of tags
- Attributes
- All tags attributes
- How to apply all the attributes in web-pages

Table

- How to create table in Html
- Attributes of table
- Example

List

- How to create list
- Attributes of list
- Example

Audio/Video

- Attributes of audio/video tag
- How to create audio page
- How to create video page

I-frame

- What is nested web-page?
- How to create nested web-pages
- Attributes of nested web-pages

SVG

- How to define graphics in html
- Attributes of SVG

Form

- What is form
- How to create forms using html
- How to create log-in page
- How to create registration page using form
- Attributes of form

CSS-3

- Introduction
- What is css?



- What is the use of css?
- Types of css
- How to call css inside html pages

Background

- How to set background properties
- Attributes for background

Box-Model

- What is box-model in css
- How to work with box-model

Selectors

- What is selector?
- Types of selector
- How to apply selector

Combinators

- What is combinators?
- Types of combinators
- How it is related to selectors

Pseudo-class & Pseudo-elements

- What is pseudo-class?
- What is pseudo-elements
- Types of pseudo-class
- Types of pseudo-elements
- How to apply

Transition, Transform & Animation in css

- Applications of Transition, Transform & Animation
- Use of Transition, Transform & Animation
- Basic Project based on Transition, Transform & Animation.

Javascript

- Introduction
- What is javascript?
- What is the difference between java & javascript
- Application of javascript
- Advantages & Disadvantages of javascript
- Types of javascript
- Datatypes in javascript
- Looping Statement
- Conditional Statement

Function & Arrays

- What is function
- What is array
- Types of function
- Methods of array

String & Object

- What is string
- Methods of string
- What is object
- How to create object in js

Date & Math

- What is date method
- What is math method
- Methods of date & math

Collection in js

- What is collection
- Types of collection

Advanced array methods in js

- Javascript Closure
- DOM elements in javascript
- Json in javascript
- Ajax in javascript
- Canvas using javascript

Regular Expression in js

- What is regular expression
- How to create dynamic form in js

Bootstrap

- Introduction
- What is bootstrap
- How to apply bootstrap in web-pages
- Benefits of using bootstrap
- Grid system in bootstrap
- Classes in bootstrap
- How to create table using bootstrap-class
- How to create forms using bootstrap-class
- What is carousel in bootstrap
- How to apply all of this create one project.

Project Set-up

- Responsive project using Html, Css, Javascript & bootstrap

Remember that this is a detailed outline and can be adjusted based on the duration of the course, the depth of coverage desired for each topic, and the level of expertise of the participants. Additionally, as technology evolves, new tools and practices might emerge, so it's essential to keep the course content up-to-date to reflect the latest trends and best practices.

