

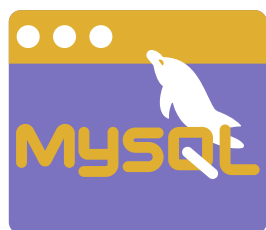


IDM TECHPARK

GUIDE'S FOR PERFECT CAREER PATHWAY



MYSQL Course Syllabus



N.S.D.C.
National
Skill Development
Corporation



1

About Us

IDMTECHPARK global retail & corporate training solutions provider in Coimbatore, Erode, Trichy & Salem that offers a comprehensive range of training and placement services for both fresher's and professionals seeking new opportunities. The company commenced its IT training business in 2016. A pioneer in IT education, over the years, we have trained over 50k students. Idmtechpark has a wide range of courses, maintains education standards & provides placement assistance.

www.idmtechparkcoimbatore.com
www.idmtechparkerode.com

+91 9585305700

**2**

About IDMTECHpark Education Quality

IDMTECHPARK is managed and developed by industry specialists with more than 8 years of expertise in the field. IDMTECHPARK offers a staff of highly skilled professional trainers who deliver effective IT training in a friendly setting, concentrating on the needs of each individual to help them succeed in a demanding work world. In the book of career and success, our staff never leaves a page unturned.

www.idmtechparkcoimbatore.com
www.idmtechparkerode.com

+91 9585305700

IDMTECHPARK's versatile instructor-led training class rooms and lower-class sizes enable people to engage more easily and absorb knowledge, resulting in remarkable results for both themselves and the organizations for which they work. Our training programmes are adaptable and customizable to ensure that each participant gets the most out of their time with us. IDMTECHPARK focuses in providing hands-on IT training in over 30 different courses.

- We teach in-demand courses
- We provide impactful learning material
- Our teachers are well-selected & trained
- We follow world-class teaching methods
- Our courses include E-Projects
- We conduct technical workshops
- Exams are held and based on Exams providing Certification
- Certificates are recognized the world over
- Our course timings are flexible



3

Our Recent Placement

Idmtechpark assists students in getting job placements on successful completion of their courses. Idmtechpark also provides recruitment assistance to organizations. Idmtechpark students are shortlisted based on the organization's requirement. To make students job-ready, Idmtechpark conducts workshops e.g. How to do Group Discussions, how to behave in a Personal Interview. From time to time, job fairs & campus recruitments are conducted. Workplace skills such as time management, making effective presentations and communication skills are also provided. All this helps students find appropriate jobs in the IT industry while also helping save companies recruitment costs.

Krishnaveni M

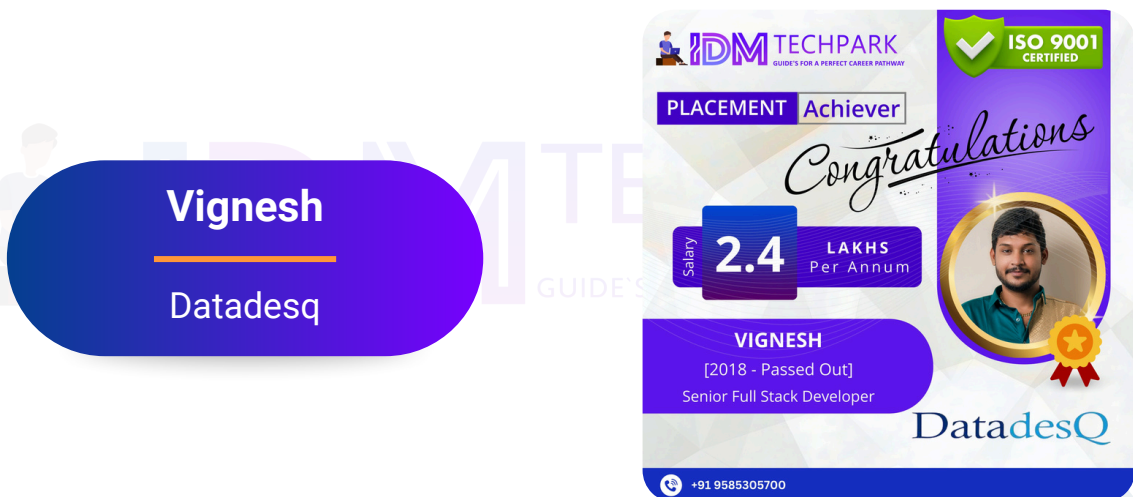
Frutterlabs





Joshwa

Xccessor



Vignesh

Datadesq



Madhumitha

Accenture

Keerthana

AJS



Brindha Boopathi

AJS



Kavin Kumar

AJS

Ajithkumar

AJS



Gowthami

Genpact



Surya

ZUCI

Pavithra

Vel Info Tech



Poovitha

Gray Matter



Ramesh

TDT

Siva Sankar
ST Cloudspark tech



Nabeel Hisham
VTail



Kalayarasan
Violet Infotech

4

Our Alumni Working At



MODULE 1

Introduction to Databases and MySQL

- Overview of Databases
- Introduction to RDBMS (Relational Database Management System)
- Installation of MySQL
- Basic MySQL Architecture
- MySQL Client and Command-Line Interface (CLI)

MODULE 2

MySQL Database Basics

- Introduction to MySQL Database
- Creating and Managing Databases
- Overview of MySQL Data Types
- Viewing Database Information and Tables
- Understanding Database Structure (Schemas, Tables)

MODULE 3

SQL Basics – Select and Insert

- SELECT Statement: Retrieving Data
- Using WHERE Clause for Filtering
- Using DISTINCT to Avoid Duplicates
- INSERT INTO Statement for Adding Data
- Inserting Multiple Rows into Tables

MODULE 4

Data Types and Constraints

- Overview of MySQL Data Types (Numeric, Date, String, etc.)
- Working with Constraints (NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY)
- Default Values in Tables
- Auto-Increment Fields

MODULE 5

Updating and Deleting Data

- UPDATE Statement for Modifying Data
- DELETE Statement for Removing Data
- Conditional Updates and Deletes
- Transactions and Rollbacks

MODULE 6

Advanced SELECT Queries

- Sorting Data using ORDER BY
- Limiting Results with LIMIT
- Aggregate Functions (COUNT, AVG, MIN, MAX, SUM)
- Grouping Data with GROUP BY
- Filtering Grouped Data with HAVING

MODULE 7

Joins in SQL

- Introduction to Joins
- INNER JOIN, LEFT JOIN, RIGHT JOIN
- FULL OUTER JOIN (Simulated in MySQL)
- Self Joins and Cross Joins
- Using Aliases in Joins

MODULE 8

Subqueries

- Introduction to Subqueries
- Subqueries in SELECT, INSERT, UPDATE, and DELETE
- Correlated vs. Non-Correlated Subqueries
- Using EXISTS, IN, and NOT IN with Subqueries

MODULE 9

Indexing and Optimization

- Introduction to Indexes in MySQL
- Types of Indexes (Primary, Unique, Composite)
- Creating and Dropping Indexes
- Query Optimization Techniques using Indexes
- Analyzing Query Performance with EXPLAIN

MODULE 10

Views in MySQL

- What Are Views?
- Creating and Managing Views
- Advantages of Using Views
- Updating Data Through Views
- Dropping Views

MODULE 11

Stored Procedures and Functions

- Introduction to Stored Procedures
- Creating, Modifying, and Deleting Stored Procedures
- Input and Output Parameters in Stored Procedures
- Writing Functions in MySQL
- Error Handling in Stored Procedures

MODULE 12

Triggers in MySQL

- Introduction to Triggers
- Types of Triggers: BEFORE, AFTER
- Creating Triggers for INSERT, UPDATE, DELETE Operations
- Triggering Multiple Actions in a Single Trigger
- Dropping Triggers

MODULE 13

Transactions and ACID Properties

- Introduction to Transactions
- ACID Properties (Atomicity, Consistency, Isolation, Durability)
- COMMIT, ROLLBACK, and SAVEPOINT
- Using Transactions for Data Integrity
- Isolation Levels in MySQL

MODULE 14

Normalization and Relationships

- Introduction to Database Normalization
- First, Second, and Third Normal Forms (1NF, 2NF, 3NF)
- Fourth Normal Form and Boyce-Codd Normal Form
- Relationships in Databases (One-to-One, One-to-Many, Many-to-Many)
- Foreign Keys and Referential Integrity

MODULE 15

Data Import and Export

- Importing Data into MySQL (CSV, Excel)
- Exporting Data from MySQL to Different Formats
- Using the LOAD DATA INFILE Command
- Using mysqldump for Database Backup and Restore
- Importing and Exporting via phpMyAdmin

MODULE 16

Advanced Data Types and Features

- Working with JSON Data Type
- Using ENUM and SET Data Types
- Full-Text Indexing and Searching
- Using Spatial Data Types (for GIS applications)
- Working with Time Zones in MySQL

MODULE 17

User Management and Security

- Managing MySQL Users and Permissions
- Granting and Revoking Privileges
- Securing MySQL Database (Password Hashing, SSL Connections)
- Managing MySQL Roles
- Best Practices for Database Security

MODULE 18

Backup and Recovery

- Introduction to MySQL Backup Strategies
- Full and Incremental Backups
- Using mysqldump for Backup and Restoration
- Point-in-Time Recovery with Binary Logs
- Automating Backup Tasks

MODULE 19

MySQL Replication

- Introduction to Replication in MySQL
- Setting up Master-Slave Replication
- Configuring Multi-Master Replication
- Managing Replication in Large Scale Environments
- Monitoring and Troubleshooting Replication

MODULE 20

Partitioning in MySQL

- Introduction to Table Partitioning
- Types of Partitioning (Range, List, Hash, Key)
- Creating Partitioned Tables
- Benefits of Partitioning in Large Databases
- Managing and Dropping Partitions

MODULE 21

Performance Tuning and Monitoring

- Understanding Query Performance
- Using the SHOW STATUS Command
- Query Profiling with EXPLAIN
- Optimizing Complex Queries and Index Usage
- MySQL Performance Schema

MODULE 22

Advanced SQL Techniques

- Window Functions (ROW_NUMBER, RANK, NTILE)
- Recursive Queries and Common Table Expressions (CTEs)
- Handling NULL Values and Conditional Aggregates
- Using CASE and COALESCE for Conditional Logic
- Writing Complex SQL Queries for Reports

MODULE 23

High Availability and Clustering

- Introduction to High Availability in MySQL
- Setting up MySQL Cluster
- MySQL Group Replication
- Load Balancing in MySQL
- High Availability vs. Fault Tolerance

MODULE 24

MySQL on Cloud

- Introduction to Cloud Databases (AWS RDS, Google Cloud SQL)
- Setting up MySQL on Cloud Providers
- Configuring Backup and Monitoring on Cloud
- Auto-scaling and High Availability in Cloud Databases
- Security Best Practices for Cloud Databases

MODULE 25

MySQL in Production Environments

- Preparing MySQL for Production Use
- Database Monitoring and Alerts
- Handling Data Growth and Archiving
- Scaling MySQL for High-Traffic Applications
- Troubleshooting Common Issues in Production

Thank You

+91 9585305700

www.idmtechparkcoimbatore.com

www.idmtechparkerode.com