

1. COURSE : Introduction to Database:

WEEK 1

- Course Introduction
- Database and Data
- Introduction to SQL

WEEK 2: CRUD OPERATIONS

- SQL Data Types
- Create and Read
- Update and Delete
- SQL operators
- Sorting and Filtering

WEEK 3: Database Design

- Designing database structure
- Relational database design
- Database normalization

Graded assignment and course wrap up

2. COURSE : Verssion Control and Linux Commands

WEEK 1:

- Course Introduction
- Introduction to version control

WEEK 2:

- Command Line
- Unix Commands

WEEK 3:

- Working with Git
- Git and Github
- Create and repository with forking

Assignment and work

3. COURSE : Database Structures and Management with MySQL

Week 1:

- Course intro
- Filtering data
- Joining tables
- Grouping data

Week 2:

- Updating and Inserting data
- Constraints
- Changing table structures
- Subqueries
- Virtual Tables

Week 3: Functions and Stored Procedures

- Functions in Mysql
 - Procedures
- Graded Assignment

4. **COURSE : Database Administration**

Week 1: Introduction to Database Management

- Overview of Database Management Tasks
- Server Objects and hierarchy
- PhpMyAdmin

Week 2:

- Monitoring and Optimization
- Troubleshooting and Automation
- Managing databases: backup and restore
- Security and user management

Graded Assignment

5. **COURSE : Advanced MySQL Topics**

Week 1: Function and Triggers

- Intro
- Advanced MySQL functions and Stored Procedures
- MySQL triggers and Events

Week 2: Database Optimization

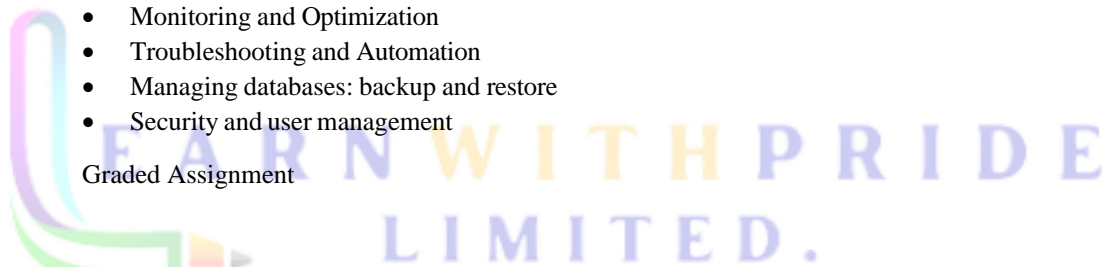
- Optimizing Queries
- Further Optimization Techniques

Week 3: MySQL for Data Analytics

- Evaluating MySQL for Data Analytics
- Performing data Analysis in MySQL

Assignment and project

6. **COURSE : Programming in Python**



Week 1: welcome to Python Programming

- Basics of python
- Control flow and conditionals

Week 2: Fundamentals of Programming with Python

- Functions and Data structures
- Errors, exceptions and handling

Week 3: Modules, packages, libraries and tools

- Modules
- Popular packages, Libraries and Frameworks

7. COURSE : Database Clients—Interacting with MySQL database using Python

Week 1:

- Course intro
- Establishing a MySQL/Python Connection and Creating Tables
- Working with cursors

Week 2: Performing queries in MySQL using Python

- Performing CRUD operations
- Advanced queries in MySQL database using Python

Week 3: Advanced database clients

- Implementing MySQL functions using Python
- Accessing MySQL stored procedures using Python
- Working with connection pools

Project

8. COURSE : Data Modeling and Advanced Data Modeling & management

Week 1:

- Course intro
- Data modeling
- MySQL Workbench

Week 2: Data warehousing

- What is a data warehouse?
- Dimensional data modeling

Week 3: Advanced Data Analytics

- Introduction to Data Analytics
- Advanced Data Analytics

Project

9. COURSE : Introduction to NoSQL Database: MongoDB

Week 1: Introduction to NoSQL

- Basics of NoSQL
- Working with Distributed Data

Week 2: Introducing Mongo DB

- Basics of MongoDB
- Getting started with MongoDB

Week 3:

- Interacting with MongoDB from Python
- Monitoring and Optimizing queries in MongoDB

10. COURSE : Capstone Project

Roles they can apply for after completing this course:

1. Database Administrator
2. Data Engineer
3. Data Architect
4. Database Developer
5. Database Analyst



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