Learning Objectives and Syllabus

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Learning Objectives

In this course, you will learn:

- Create and access a database instance on cloud
- Write basic SQL statements: CREATE, DROP, SELECT, INSERT, UPDA
- Filter, sort, group results, use built-in functions, compose nested que
- Access databases from Jupyter using R and SQL to query real-world

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Syllabus

Module 1 - Getting Started with SQL

- Module Introduction and Learning Objectives
- Welcome to SQL for Data Science
- SELECT Statement
- Ungraded Plugin: SELECT statement examples
- Simple SELECT Statements
- COUNT, DISTINCT, LIMIT
- Hands-on Lab: COUNT, DISTINCT, LIMIT
- INSERT Statement
- UPDATE and DELETE Statements
- Hands-on Lab: INSERT, UPDATE, and DELETE
- Summary & Highlights
- Practice Quiz
- Graded Quiz: Basic SQL

Module 2 - Introduction to Relational Databases and Tables

- Module Introduction and Learning Objectives
- Introduction to Databases
- Relational Database Concepts
- How to create a Database instance on Cloud
- Sign up for IBM Cloud, Create Db2 service instance and Get started with the Db2 console
- Types of SQL statements (DDL vs. DML)
- CREATE TABLE Statement
- ALTER, DROP, and Truncate tables
- Examples to CREATE and DROP tables
- Hands-on Lab: CREATE, ALTER, TRUNCATE, DROP
- Hands-on Lab: Create and Load Tables using SQL Scripts
- Summary & Highlights
- Practice Quiz

Module 3 - Intermediate SQL

- Module Introduction and Learning Objectives
- Using String Patterns and Ranges
- Sorting Result Sets
- Grouping Result Sets
- Hands-on Lab : String Patterns, Sorting & Grouping
- Summary & Highlights
- Practice Quiz
- Graded Quiz: Refining Your Results
- Built-in Database Functions
- Date and Time Built-in Functions
- Hands-on Lab: Built-in functions
- Sub-Queries and Nested Selects
- Hands-on Lab: Sub-queries and Nested SELECTs
- Working with Multiple Tables
- Hands-on Lab: Working with Multiple Tables
- Summary & Highlights
- Practice Quiz
- Graded Quiz: Functions, Sub-Queries, Multiple Tables

Module 4 - Getting Started with Database using R

- Module Introduction and Learning Objectives
- Why use R with Relational Databases
- R Persistence Options
- Terminology Comparison
- Mapping Data between R and RDBMS
- Database Design Considerations
- Hands-on Lab: Review using Jupyter and R Dataframes
- Hands-on Lab: Create Db2 Service Credentials
- Summary & Highlights
- Practice Quiz
- Graded Quiz: R and Relational Databases
- Connectivity Options
- Connecting with RJDBC
- Connectivity using ODBC
- RODBC in Detail
- Metadata Discovery
- Hands-on Lab: Accessing Your Database using RJDBC
- Hands-on Lab: Accessing your Database with RODBC

- Hands-on Lab: Accessing your Database with RODBC

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