

Course Name	Introduction to SQL Databases
Course Code	10985-C
Course Duration	3 Days
Course Structure	Instructor-Led
Course Overview	This three-day instructor-led course is aimed at people looking to move into a database professional role or whose job role is expanding to encompass database elements. The course describes fundamental database concepts including database types, database languages, and database designs.
Audience Profile	The primary audience for this course is people who are moving into a database role, or whose role has expanded to include database technologies.
Course Prerequisites	This is a foundation level course and therefore only requires general computer literacy.
Course Outcome	<p>After completing this course, students will be able to:</p> <ul style="list-style-type: none"> • Describe key database concepts in the context of SQL Server 2016 • Describe database languages used in SQL Server 2016 • Describe data modelling techniques • Describe normalization and denormalization techniques • Describe relationship types and effects in database design • Describe the effects of database design on performance • Describe commonly used database objects
Assessment/Evaluation	<p>This course will prepare delegates to take the exam Introduction to SQL Databases</p> <p>Successfully passing this exam will result in the attainment of the Introduction to SQL Databases and Certificate of Attendance issued by IT-IQ Botswana</p>

Course Details	
Topic	<p>Topic 1: Introduction to databases This Topic introduces key database concepts in the context of SQL Server 2016.</p> <p>Lessons</p> <ul style="list-style-type: none">• Introduction to relational databases• Other types of database• Data analysis• Database languages in SQL Server <p>Lab: Exploring and querying SQL Server databases</p> <p>After completing this Topic, you will be able to:</p> <ul style="list-style-type: none">• Describe what a database is• Understand basic relational aspects• Describe database languages used in SQL Server• Describe data analytics <p>Topic 2: Data Modelling This Topic describes data modelling techniques.</p> <p>Lessons</p> <ul style="list-style-type: none">• Data modelling• ANSI/SPARC database model• Entity relationship modelling <p>Lab: Identify components in entity relationship modelling</p> <p>After completing this Topic, you will be able to:</p> <ul style="list-style-type: none">• Understand the common data modelling techniques• Describe the ANSI/SPARC database model• Describe entity relationship modelling

	<p>Topic 3: Normalization This Topic describes normalization and denormalization techniques.</p> <p>Lessons</p> <ul style="list-style-type: none">• Fundamentals of Normalization• Normal form• Denormalization <p>Lab: Normalizing data</p> <p>After completing this Topic, you will be able to:</p> <ul style="list-style-type: none">• Describe normalization benefits and notation• Describe important normalization terms• Describe the normalization levels• Describe the role of denormalization <p>Topic 4: Relationships This Topic describes relationship types and effects in database design.</p> <p>Lessons</p> <ul style="list-style-type: none">• Introduction to relationships• Planning referential integrity <p>Lab: Planning and implementing referential integrity</p> <p>After completing this Topic, you will be able to:</p> <ul style="list-style-type: none">• Describe relationship types• Describe the use, types, and effects of referential integrity <p>Topic 5: Performance This Topic introduces the effects of database design on performance.</p> <p>Lessons</p> <ul style="list-style-type: none">• Indexing• Query performance
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- Concurrency

Lab: Performance issues

After completing this Topic, you will be able to:

- Discuss the performance effects of indexing
- Describe the performance effects of join and search types
- Describe the performance effects of concurrency

Topic 6: Database Objects

This Topic introduces commonly used database objects.

Lessons

- Tables
- Views
- Stored procedures, triggers and functions

Lab: Using SQL server

After completing this Topic, you will be able to:

- Describe the use of tables in SQL Server
- Describe the use of views in SQL Server
- Describe the use of stored procedures in SQL Server
- Describe other database objects commonly used in SQL Server