# Exam 98-364

## Database Fundamentals

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**Languages:** English, Chinese (Simplified), Chinese (Traditional), French, German, Italian, Japanese, Korean, Portuguese (Brazil), Russian, Spanish, Spanish (Latin America)

**Audiences:** Academic

**Technology:** Microsoft SQL Server 2008

**Credit towards certification:** MTA

# Skills measured

This exam measures your ability to accomplish the technical tasks listed below. The percentages indicate the relative weight of each major topic area in the exam. The higher the percentage, the more questions you are likely to see on that content area in the exam.

**Please note that the questions may test on, but will not be limited to, the topics described in the bulleted text.**

Hide all

**Understanding core database concepts (20–25%)**

Understand how data is stored in tables

- Understand what a table is and how it relates to the data that will be stored in the database; columns/fields, rows/records

Understand relational database concepts

- Understand what a relational database is, the need for relational database management systems (RDBMS), and how relations are established

Understand data manipulation language (DML)

- Understand what DML is and its role in databases

Understand data definition language (DDL)

- Understand how T-SQL can be used to create database objects, such as tables and views

**Preparation resources**

Designing tables

3 - Implementing a relational database

Data Manipulation Language (DML) statements (Transact-SQL)

**Create database objects (20–25%)**

Choose data types

- Understand what data types are, why they are important and how they affect storage requirements

Understand tables and how to create them

- Purpose of tables; create tables in a database by using proper ANSI SQL syntax

Create views

- Understand when to use views and how to create a view by using T-SQL or a graphical designer

Create stored procedures and functions

- Select, insert, update or delete data

**Preparation resources**

Publishing data and database objects

CREATE TABLE (Transact-SQL)

How to: Create views (Visual Database Tools)

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**Manipulate data (25–30%)**

Select data

- Utilise SELECT queries to extract data from one table, extract data by using joins, combine result sets by using UNION and INTERSECT

Insert data

- Understand how data is inserted into a database, how to use INSERT statements

Update data

- Understand how data is updated in a database and how to write the updated data to the database by using the appropriate UPDATE statements, update by using a table

Delete data

- Delete data from single or multiple tables, ensure data and referential integrity by using transactions

**Preparation resources**

Selecting data using the SqlDataSource control

Walkthrough: Retrieving, updating, inserting, and deleting data with the LinqDataSource and DetailsView controls

How to: Delete rows from the database (LINQ to SQL)

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**Understand data storage (15–20%)**

Understand normalisation

- Understand the reasons for normalisation, the five most common levels of normalisation, how to normalise a database to third normal form

Understand primary, foreign and composite keys

- Understand the reason for keys in a database, choose appropriate primary keys, select appropriate data type for keys, select appropriate fields for composite keys, understand the relationship between foreign and primary keys

Understand indexes

- Understand clustered and non-clustered indexes and their purpose in a database

**Preparation resources**

Working with keys

How to: Handle composite keys in queries (LINQ to SQL)

Working with indexes

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**Administer a database (10–15%)**

Understand database security concepts

- Understand the need to secure a database, what objects can be secured, what objects should be secured, user accounts and roles

Understand database backups and restore

- Understand various backup types, such as full and incremental, importance of backups, how to restore a database

**Preparation resources**

Security considerations for a SQL Server installation

SQL Server security (ADO.NET)

Backing up and restoring databases in SQL Server

# Preparation options

Show all

**Instructor-led training**

**Practice test**

**From the community**

# Who should take this exam?

Candidates for this exam are seeking to prove introductory knowledge of and skills with databases, including relational databases, such as Microsoft SQL Server. It is recommended that candidates be familiar with the concepts of and have hands-on experience with the technologies described here, either by taking relevant training courses or by working with tutorials and samples available on MSDN and in Microsoft Visual Studio. Although minimal hands-on experience with the technologies is recommended, job experience is not assumed

for these exams.

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