

# IT3090E – Database (Lab)

# General Information

- Working with a DBMS – SQL Server
- Schedule

Date	Content	Note
15/5/2022	<ul style="list-style-type: none"><li>- Introduction to DBMS (SQL Server)</li><li>- Creating a Database</li><li>- Writing queries</li><li>- Administration tools (backup, restore..)</li></ul>	
30/5/2022	<ul style="list-style-type: none"><li>- Writing queries (nested queries, function,...)</li><li>- Function, Procedures</li><li>- Index</li></ul>	Submission
20/6/2022	<ul style="list-style-type: none"><li>- Query Explain</li><li>- Trigger</li><li>- Test</li></ul>	Test

# Introduction to DBMS

# Database Management System

Wikipedia	A software to facilitate the creation and maintenance of a database
Techtarget	The DBMS provides users and programmers with a systematic way to create, retrieve, update and manage data



# Functions of DBMS

- Defining ~ specifying types of data
- Constructing ~ storing & populating
- Manipulating ~ querying, updating, reporting



# A comparison

	PostgreSQL	MySQL	MariaDB	SQL Server	Oracle
Licensing	Open-source	GNU Generally Public License	GNU Generally Public License	Proprietary	Proprietary
Data Structure	Relational Object-relational.	Relational	Relational	Relational	Relational Multi-model
Other data structure	NoSQL	N/A	NoSQL	NoSQL	NoSQL
Scalability	Vertical	Vertical complex	Vertical	Vertical complex	Vertical
Query language	SQL	SQL	SQL	T-SQL	PL SQL
Transaction	ACID	ACID	ACID	ACID	ACID

<https://www.digitalocean.com/community/tutorials/sqlite-vs-mysql-vs-postgresql-a-comparison-of-relational-database-management-systems>

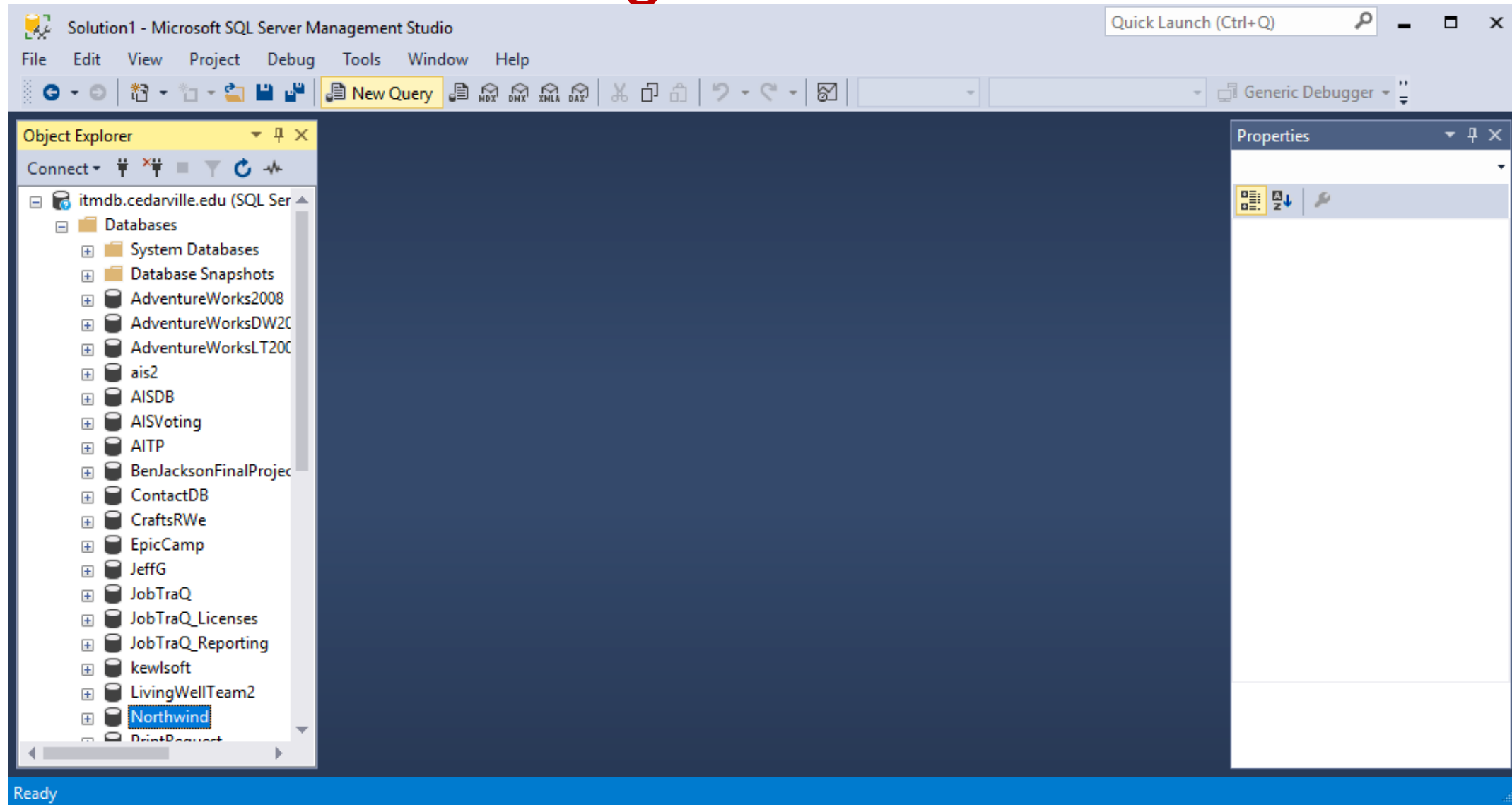
[https://en.wikipedia.org/wiki/Comparison\\_of\\_relational\\_database\\_management\\_systems](https://en.wikipedia.org/wiki/Comparison_of_relational_database_management_systems)

<https://www.altexsoft.com/blog/business/comparing-database-management-systems-mysql-postgresql-mssql-server-mongodb-elasticsearch-and-others/>

# SQL Server Links & Documents

- <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>
- <https://docs.microsoft.com/en-us/sql/?view=sql-server-ver15>

# SQL Server Management Studio





# SQL Server Administrative Duties

