

POLITECHNIKA ŚLĄSKA

WYDZIAŁ ELEKTRYCZNY

Katedra Mechatroniki

**PRACA DYPLOMOWA  
MAGISTERSKA**

**SQL**

**SQL prep**

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Studia: Stacjonarne II stopnia  
Kierunek: Mechatronika

Specjalność: Zastosowania mechatroniki w inżynierii elektrycznej

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Gliwice 2019

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# Słowniczek

NSG – Network Securty Group – coś jak firewall

Azure Active Direcotry – to taki Azurowy Identity Store

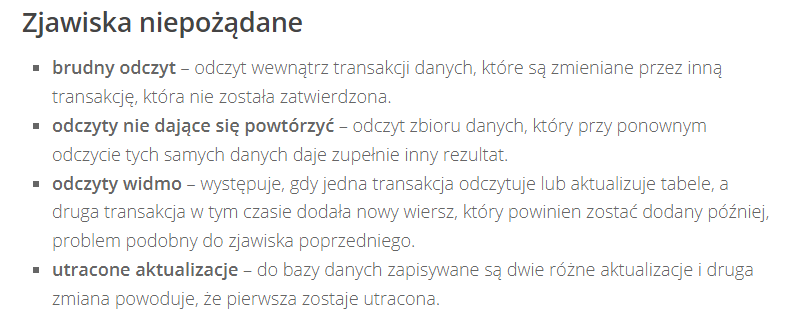
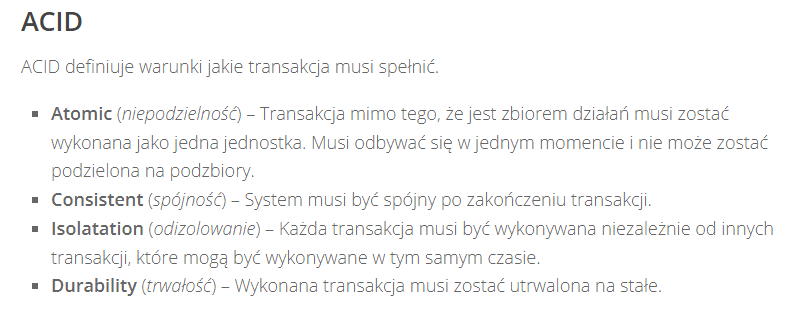
# Informacje ogólne

Każdy resource w Azurze musi być przypisany do „Resource Group".

Stop w Azurze – dealokuje VMa z fizycznego hosta w infrastrukturze Azure

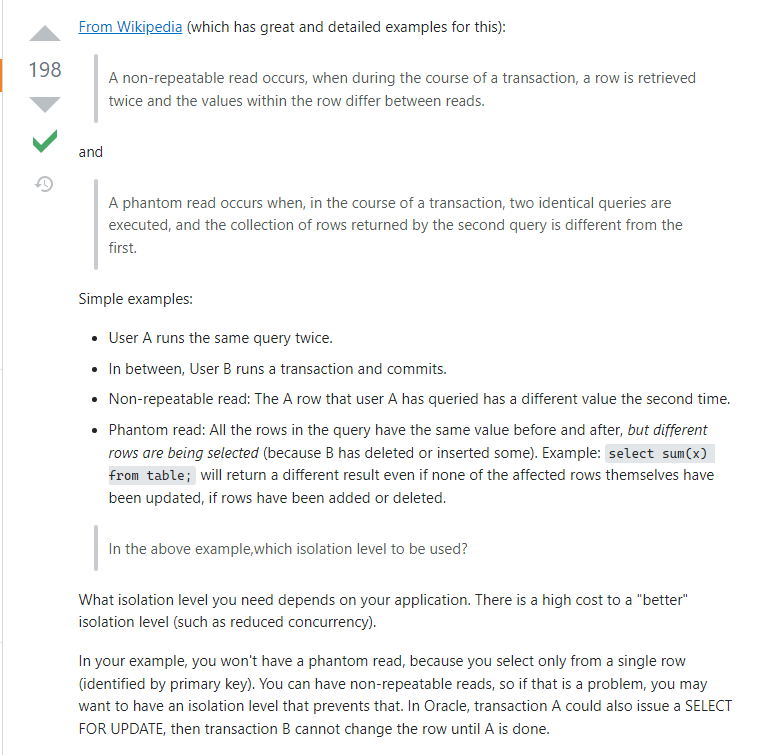
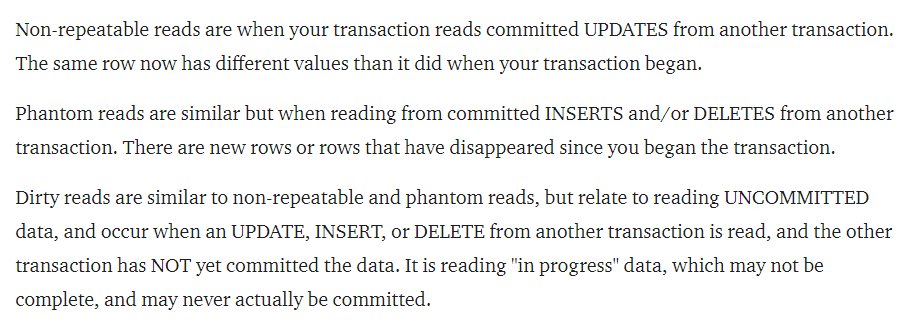
Shutdown na poziomie OS – wyłączy VMa, ale on dalej będzie hostowany w infrze Azure

# Transaction isolation level



## Non-repeatable reds vs Phantom reads

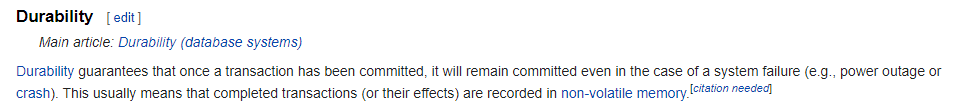
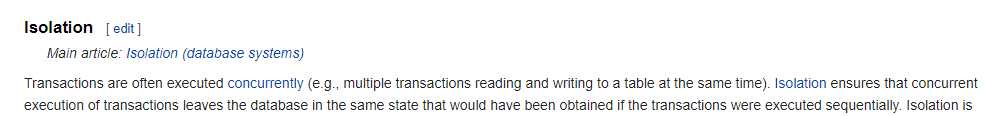
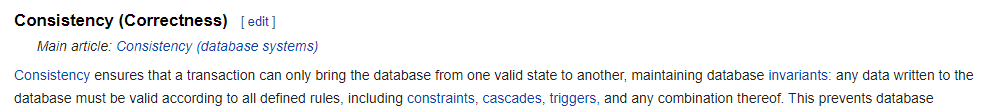
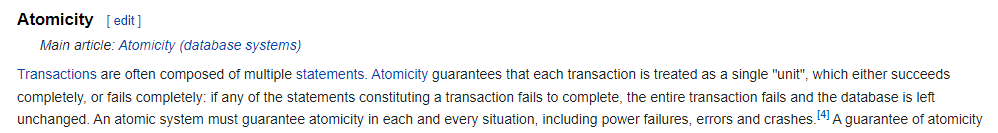
Non-repetable reads vs Phantom reads:



## Isolation levels

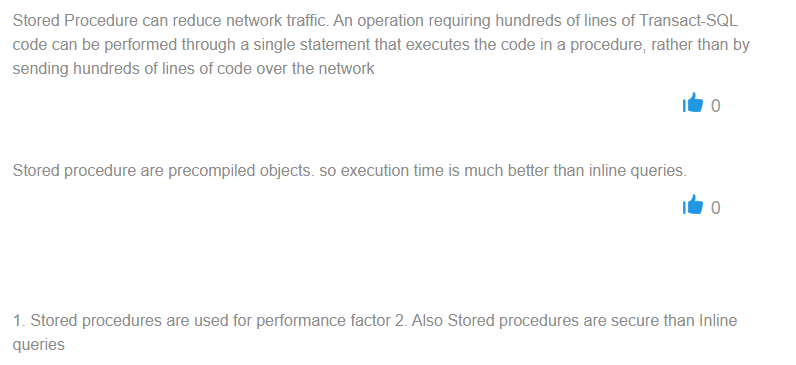


# ACID



# SQL

## Stored procedures vs SQL inline queries



## Pytania rekrutacyjne

<https://datacraze.pl/sql-bez-tajemnic-pytania-rekrutacyjne/>

<https://www.plukasiewicz.net/Pytania_i_odpowiedzi/SQLQA>

https://stormit.pl/pytania-rekrutacyjne-sql/#przykladowe-zapytania

## Types of indexes

- Single Column – Most frequently used column in the query

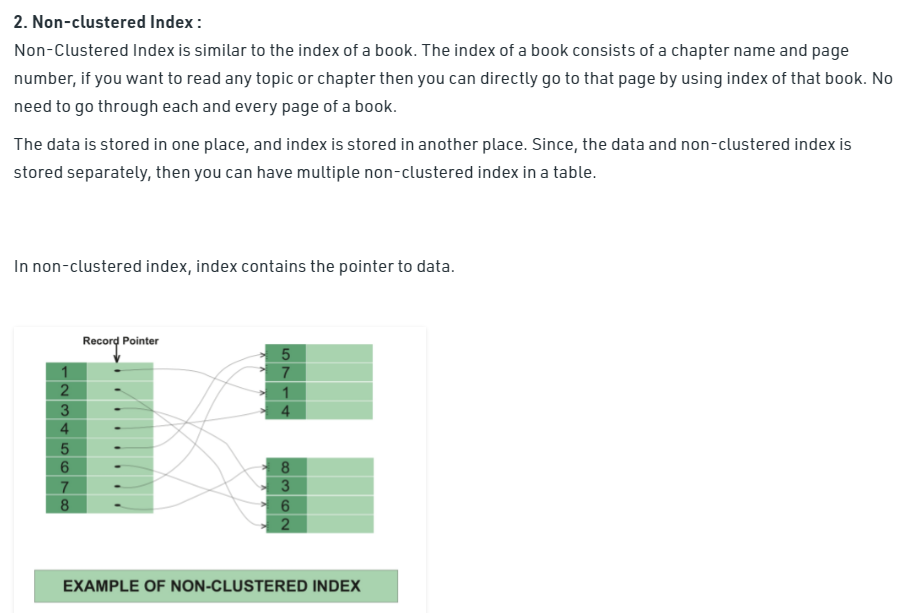
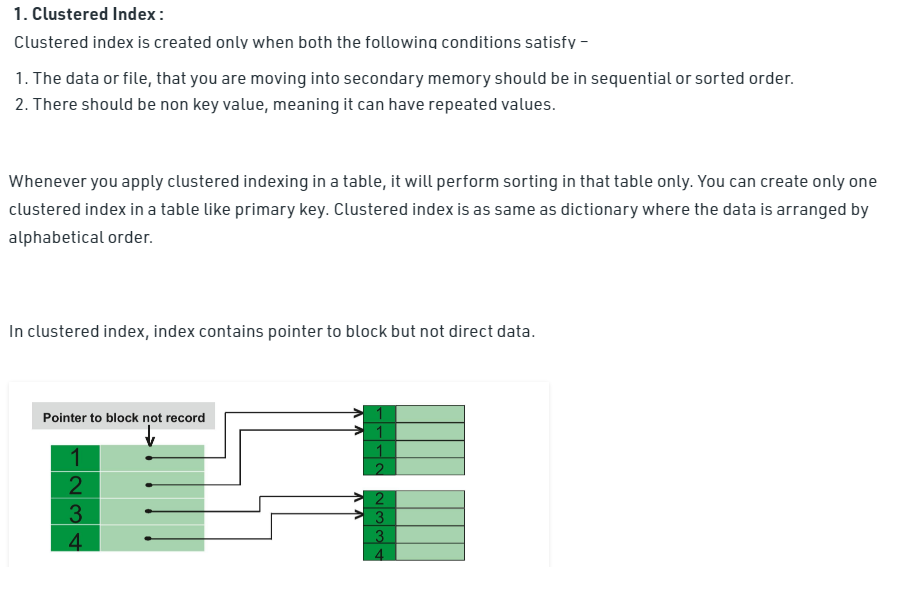
- Multi-Column – same as single column but aplied to multiple columns (use is to multiple columns that happen to apear in the where clause)

- Unique – for speed and integrity (for unique columns)

- Partial – index for a subset of a table

- Implicit Indexes – automatically created by database (primary key, unique key)

## Clustered vs non clustered index:



## When to use indexes

- Index foreign keys

- Index primary keys and unique columns

- Index on Columns that end up in the order by/where clause often

## When to use indexes

- Dont add an index just to add an index

- Dont use indexes on small tables

- Dont use on tables that are updated frequelty

- Dont use on columns that contain null values

- Dont use on columns that have large values

## Index algorithms

Postgres provides several types of index algorithms:

- B-TREE (default) – best used for comparisons with: „ <, <=, =, =>, BETWEEN, IN, IS NULL, IS NOT NULL”

- HASH – can handle only equality checks „ = „

- GIN – generalized inverted index – best used when multiple values are stored in a single field

- GIST – generelized search tree – useful in indexing geometric data and full-text search

## Stored procedures vs SQL inline queries