WYDAJNOŚĆ ZŁĄCZEŃ I ZAGNIEŻDŻEŃ DLA SCHEMATÓW ZNORMALIZOWANYCH I ZDENORMALIZOWANYCH

1. Parametry komputera, na którym przeprowadzono testy:

• CPU: Intel(R) Core(TM) i5-8265U CPU @ 1.60GHz 1.80 GHz

RAM: 12,0 GBDYSK: SSD

• S.O.: Windows 10

2. Systemy zarządzania bazami danych:

• PostgreSQL, wersja 13.2

• SQL Server, wersja 15.0.2000.5

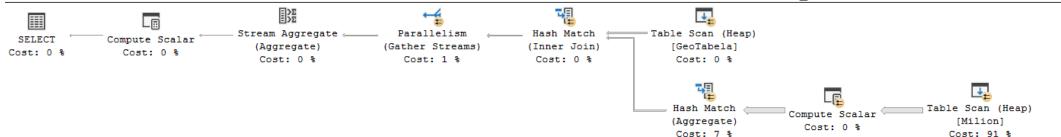
3. Wyniki testów. Każdy test wykonano 10 razy, następnie znaleziono wartość najmniejszą oraz średnią.

Tabela 1. Czasy wykonania zapytań 1 ZL, 2 ZL, 3 ZG i 4 ZG [ms]

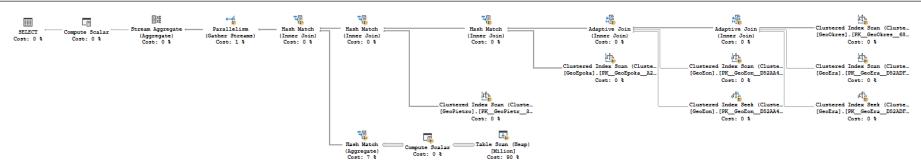
	1 ZL		2 ZL		3 ZG		4 ZG	
BEZ INDEKSÓW	MIN	ŚR	MIN	ŚR	MIN	ŚR	MIN	ŚR
PostgreSQL	180	231	328	365	11973	12106	183	221
SQL Server	32	36	34	39	3819	3898	36	41
Z INDEKSAMI								
PostgreSQL	192	228	246	269	12327	12777	193	234
SQL Server	29	34	62	65	3659	3741	28	32

- 4. Wyniki użycia opcji Display Estimated Execution Plan dla bazy danych SQL Server.
 - Bez indeksów

Query 1: Query cost (relative to the batch): 1% SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoTabela ON ((Milion.liczba%77)=(GeoTabela.id_pietro))



Query 2: Query cost (relative to the batch): 1%; SELECT COUNT(*) FROM geochro.Milion INNER JOIN geochro.GeoPietro ON ((Milion.liczba%77)=GeoPietro.id_pietro) JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpoka.id_..



Query 3: Query cost (relative to the batch): 97% ; SELECT COUNT(*) FROM geochro.Milion WHERE (geochro.Milion.liczba%77) = (SELECT id pietro FROM geochro.GeoTabela WHERE (geochro.Milion.liczba%77) = (id pietro)) 35E 個 4 **₩** Stream Aggregate Parallelism Stream Aggregate ___ Nested Loops (Table Scan SELECT Compute Scalar Filter Compute Scalar (Aggregate) (Gather Streams) (Aggregate) (Inner Join) [Milion] Cost: 0 % Cost: 1 % **1** Stream Aggregate Table Scan

Assert

Cost: 0 %

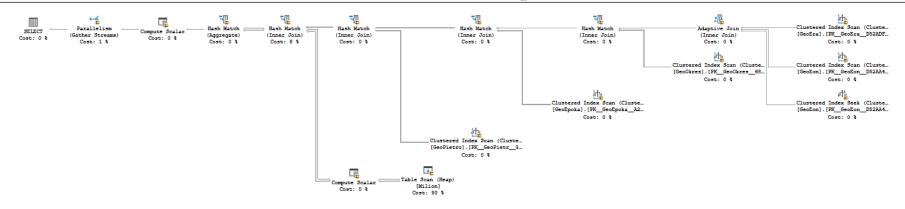
(Aggregate)

Cost: 24 %

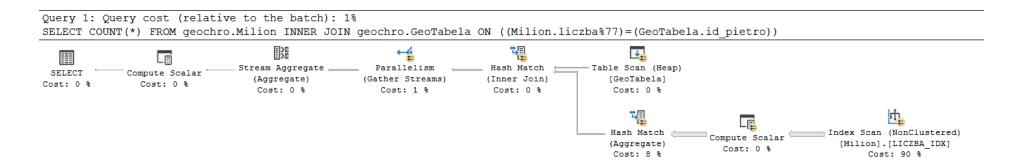
[GeoTabela]

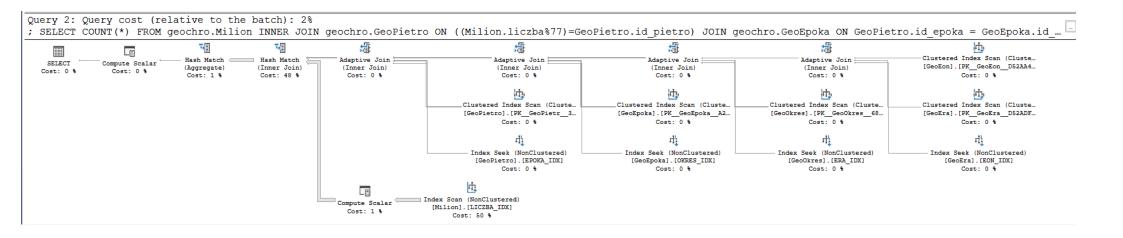
Cost: 74 %

Query 4: Query cost (relative to the batch): 1%; SELECT COUNT(*) FROM geochro.Milion WHERE (Milion.liczba%77) IN (SELECT GeoPietro.id_pietro FROM geochro.GeoPietro JOIN geochro.GeoEpoka ON GeoPietro.id_epoka = GeoEpoka...



Z indeksami





Query 3: Query cost (relative to the batch): 96% ; SELECT COUNT(*) FROM geochro.Milion WHERE (geochro.Milion.liczba%77) = (SELECT id pietro FROM geochro.GeoTabela WHERE (geochro.Milion.liczba%77) = (id pietro)) 35 偑 Stream Aggregate Parallelism Stream Aggregate Nested Loops Index Scan (NonClustered) SELECT Compute Scalar Filter Compute Scalar (Aggregate) (Gather Streams) (Aggregate) (Inner Join) [Milion].[LICZBA IDX] Cost: 0 % Cost: 1 % 瑿 **_** Stream Aggregate Table Scan Assert (Aggregate) [GeoTabela] Cost: 0 % Cost: 24 % Cost: 74 %

