research.md

1-Window Functions vs GROUP BY:

GROUP BY reduce number of rows as it take some rows and the result is only one row
Window function :doesn't reduce number of rows but also it put the result of aggregation to each row

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2-Clustered vs Non-Clustered Indexes:

Clustered :order thw data and it's allowed to have one clustered ondex per table becuase data can't be order twice or more
Non-Clustered:saves data in without order

3-Filtered & Unique Indexes:

-Filtered Index:it mangae dealing with only subset of a table instead of crossing all the table and it makes search fast and decrease usage of memory
-Unique Index:it physically slow down INSERT statements becaise it must check all the indices as it must be distinct
while while speeding up SELECT statements becuase every thing has a unique index and it doesn't have to cross all the table to search the value.

Choosing the Right Index:

using non-clustered index is the best because ordered data is not very important in this case and non-clustered is faster than clustered

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Database Transactions (ACID):

means that data is like one unit at any time operation failed any changes before it ignored (that's before commit)