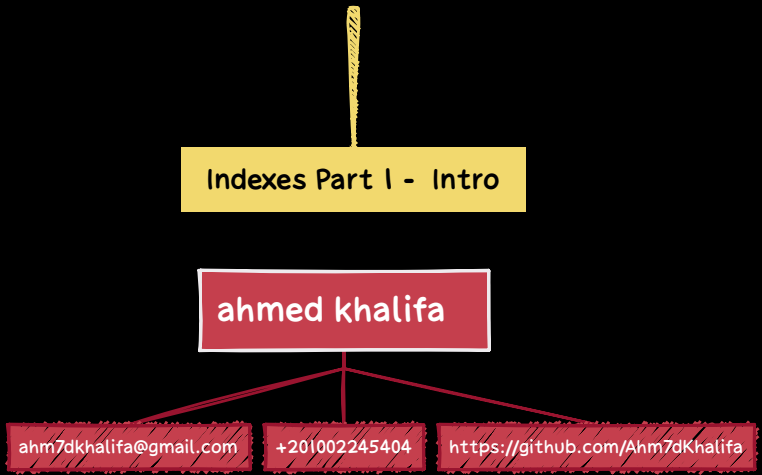
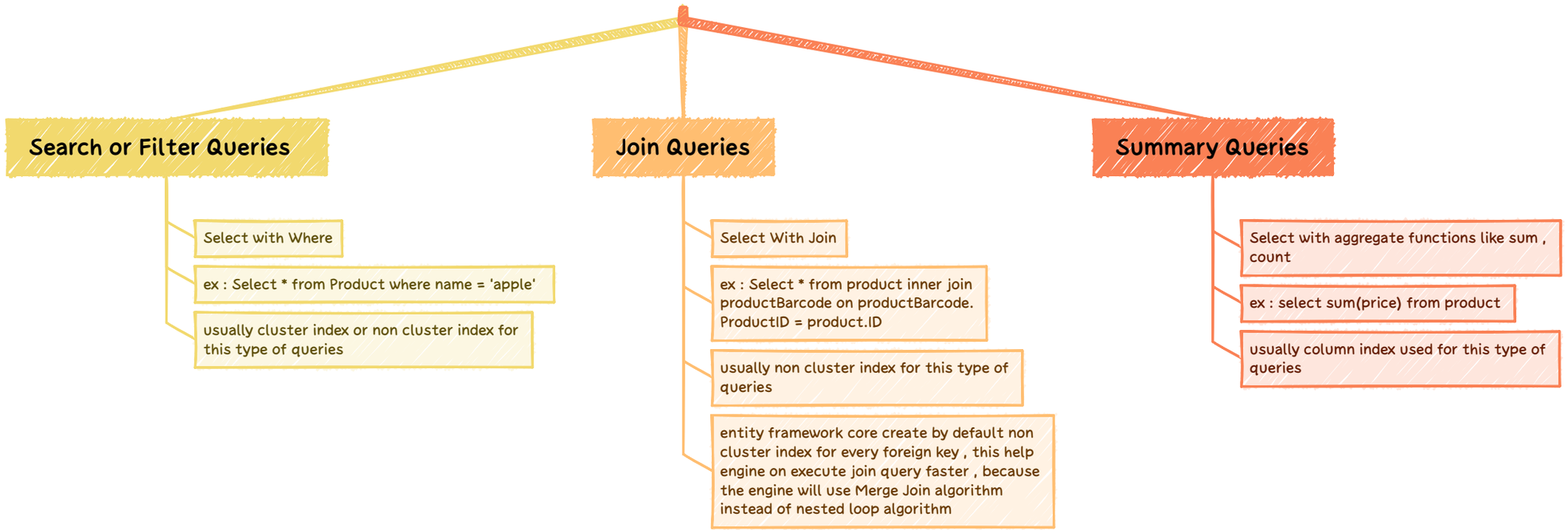
Physical Database Design



What is index ?

- Data structure associated with a table or view to help database engine to retrieve data very fast
- Type of data structure :
  - usually but not always the data structure is B-tree
  - the type of data structure is depend on some factors like : type of index , type of sql provider like : oracle , sql server or mysql ... and so on

Types Of SQL Queries That Can Use Indexes :



Advantages Of indexes :)

- Help database engine to retrieve data or execute select queries very fast with high performance
- Help database engine to load minimum number of pages or rows from disk to memory
- save database server memory or buffers space as possible

Disadvantages of indexes :(

- indexes increase performance of read queries but when there a lot of indexes this will be decrease performance of write queries like : insert , update , delete.
- indexes need extra space
- the two previous problems can be solved if you design your index correctly and understand your business and needs

Main Types Of indexes :