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Roll No! - 05

Sub! - DBMS

Practical No 11

Title! — Design and develop mongoDB queries using aggregation and indexing with suitable example using MongoDB.

Objective! —

① To Develop skill to handle NoSQL Database
② To learn understand and execute process of software application development.

Hardware! — intel is ubuntu operating system

Software! - mongoDB Atlas

Theory! —

Aggregation! — Aggregation operations process data records of document and return computered results it collects values from various document and them together and then different types of operation grouped data like sum, average, maximum etc. to return computed result.

Stages! - each stage starts from operators which are! -

① $match :- It is used for filter document that given input to next stage

② $project :- It is used to select some specific fields from a collection.

③ $group :- It is used to group document based on some value.

④ $sort :- It is use to sort the document

⑤ $skip :- It is used to skip first n number of document and passes the remaining them.

⑥ $limit :- It is used to pass first n no of document thus limiting them.

* Accumulators :- These are basically used in the group stage

- Sum : It sums numeric values for the document in each group.

- count :- It counts total number or document.

- Avg :- It calculates the average of all give values from the document.

- min :- It gets the minimum value from all the document

- max :- It gets the maximum value from the document

- first :- It get the first document from grouping

- last :- It gets the last document from grouping.

Indexing :- Indexs supports the efficient resolution of queries without indexes mongoDB must scan every document of a collection to select those document that match the query statement. This scan is highly inefficient and require mongoDB to pro.cindexes are special data structure that store a small portion of the dataset in an easy to traverse from the index stores the value of a specific field or set of fields ordered by the value of the field as specified in the index.

* Create Index method :- The create on index we need to use createIndex() method of mogoDB.

Syntax :- db.collectionNAME.createIndex()

* The drop indexes method :-

This method deletes multiple (specified) indexes on a collection

Syntax :-

```
db.collection_Name.dropIndex( )
```

* The getIndexes method :-

This method returns the description of all indexes in the collection.

Syntax :-

```
db.collection_Name.getIndexes()
```

Conclusion :- Hence we studied about mongoDB indexing and Aggregations.