A close-up of a card

Description automatically generated

1. Logical View of DB

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term Table | |  | Index | |  | Documents | |  |  | Category | |
| PK | Term: text |  | PFK | Term: text |  | PK | Doc\_id: integer |  | | PK | id: int |
|  | Num\_chars: int |  | Doc\_id: int |  |  | Text: text |  |  |  | Name: text |
|  |  |  |  | Count: int |  | Title: text |  |  |  |  |
|  |  |  |  |  |  |  | Num\_chars: int |  |  |  |  |
|  |  |  |  |  |  | FK | Date: text  Category\_id: int |  |  |  |  |

1:N N:1 N:1

2a. SELECT COUNT(\*) FROM Documents

2b. SELECT COUNT(\*) FROM Documents JOIN Category ON Documents.category \_id = Category.id WHERE Category.name = “Sports”

2c. SELECT DISTINCT count(Term) FROM Index

2d. SELECT COUNT(\*) FROM Index JOIN Documents ON Index.Doc\_id = Documents.Doc\_id WHERE Documents.title = “Arizona”

2e. SELECT COUNT(\*) FROM Index JOIN Documents ON Index.Doc\_id = Documents.Doc\_id JOIN Category ON Documents.category\_id = Category.id WHERE Category.name = “Seasons”

2f. SELECT SUM(count) FROM Index WHERE term = “months”

2g. SELECT Documents.title, SUM(Index.count) FROM Index JOIN Documents ON Index.Doc\_id = Documents.Doc\_id HAVING MAX(SUM(Index.count)) WHERE Index.Doc\_id = Documents.Doc\_id

2h. SELECT Index.term, SUM(Index.count) FROM Index JOIN Documents ON Index.Doc\_id = Documents.Doc\_id WHERE Index.Doc\_id = Documents.Doc\_id HAVING MAX(SUM(Index.count))

3. <https://github.com/Skyhorizon2021/CS4250/blob/master/Assignment2/db_connection.py>

4. MongoDB Modeling

Document

{

“Doc\_id”: int

“Text”: text

“Title”: text

“Num-chars”: int

“Date”: text

“Category”: text

“Index”: [

{

“term\_1”: text, “num\_chars”: int, “count”: int

},

{

“term 2”: text, "num\_chars": int, “count”: int

}

]

}

5a. db.Documents.aggregate([{$count: “total”}])

5b. db.Documents.aggregate([{$match: {“Category”: “Sport”}},{$count: “Doc\_from\_Sports”}])

5c. db.Documents.distinct(“Index”,[{$count: “distinct”}])

5d. db.Documents.aggregate([{$match:{“title”: “Arizona”}},{$count: “total”}}])

5e. db.Documents.aggregate([{$match:{“Category”: “Seasons”}},{$count: “total”}}])

5f. db.Documents.aggregate([{$match:{“Index”: “months”}, “total”:{$sum: ‘$count’}}])

5g. db.Documents.aggregate([{“total”:$max:[{$sum: ‘$count’}],{$group:{“tittle”: text, “total”: ”:$max:[{$sum: ‘$count’}]}])

5h. db.Documents.aggregate(“Index”, {“total”: $max:[{$sum: ‘$count’}]}, {$group:{“Index”[“term”]: text, “total”: ”: $max:[{$sum: ‘$count’}]}}

6. <https://github.com/Skyhorizon2021/CS4250/blob/master/Assignment2/db_connection_mongo.py>