PRACTICAL N0 – 4

Aim: Indexing using Mongodb

1. Mongo DB indexing
a. Create index in Mongo DB
b. Finding the indexes in a collection
c. Drop indexes in a collection
d. Drop all the indexes

```
use students
db.createCollection("studentgrades")
db.studentgrades.insertMany(
 [
 {name: "Barry", subject: "Maths", score: 92},
 {name: "Kent", subject: "Physics", score: 87},
 {name: "Harry", subject: "Maths", score: 99, notes: "Exceptional Performance"},
 {name: "Alex", subject: "Literature", score: 78},
 {name: "Tom", subject: "History", score: 65, notes: "Adequate"}
 ]
)db
db.studentgrades.find({},{_id:0})
db.studentgrades.find().pretty()

db.studentgrades.createIndex( {name: 1}, {name: "student name index"} )
```

Code:

use students; db.createCollection("studentsgrades")

db.studentgrades.insertMany(

[

{name:"Barray",subject:"Maths",score:92},

{name:"Kent",subject:"Physics",score:87},

{name:"Harry",subject:"Maths",score:99,notes:"Exceptional Performance"},

{name:"Alex",subject:"Literature",score:78},

{name:"Tom",subject:"History",score:65,notes:"Adequate"}]); **Output:**

```
test> use students;
switched to db students
students> db.createCollection("studentgrades")
MongoServerError[NamespaceExists]: Collection students.studentgrades already exists.
students> db.createCollection("studentsgrades")
{ ok: 1 }
students> db.studentgrades.insertMany(
... [
... {name:"Barray",subject:"Maths",score:92},
... {name:"Kent",subject:"Physics",score:87},
... {name:"Harry",subject:"Maths",score:99,notes:"Exceptional Performance"},
... {name:"Alex",subject:"Literature",score:78},
... {name:"Tom",subject:"History",score:65,notes:"Adequate"}]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('678a29fd0b1aea3e66bb51cb'),
    '1': ObjectId('678a29fd0b1aea3e66bb51cc'),
    '2': ObjectId('678a29fd0b1aea3e66bb51cd'),
    '3': ObjectId('678a29fd0b1aea3e66bb51ce'),
    '4': ObjectId('678a29fd0b1aea3e66bb51cf')
  }
}
```

Code: db.studentgrades.find({},{_id:0});

Output:

```
students> db.studentgrades.find({},{_id:0});
[
  { name: 'Barry', subject: 'Maths', score: 92 },
  { name: 'kent', subject: 'physics', score: 98 },
  {
    name: 'Harry',
    subject: 'Maths',
    score: 99,
    notes: 'Exceptional Performance'
  },
  { name: 'Alex', subject: 'Literature', score: 78 },
  { name: 'Tom', subject: 'History', score: 78 },
  { name: 'Tom', subject: 'History', score: 65, notes: 'Adequate' },
  { name: 'Barray', subject: 'Maths', score: 92 },
  { name: 'Kent', subject: 'Physics', score: 87 },
  {
    name: 'Harry',
    subject: 'Maths',
    score: 99,
    notes: 'Exceptional Performance'
  },
  { name: 'Alex', subject: 'Literature', score: 78 },
```

Code: db.studentgrades.find().pretty();

Output:

```
students> db.studentgrades.find().pretty();
[
  {
    _id: ObjectId('65f52d56270308fddd06a1ab'),
    name: 'Barry',
    subject: 'Maths',
    score: 92
  },
  {
    _id: ObjectId('65f52d56270308fddd06a1ac'),
    name: 'Kent',
    subject: 'physics',
    score: 98
  },
  {
    _id: ObjectId('65f52d56270308fddd06a1ad'),
    name: 'Harry',
    subject: 'Maths',
    score: 99,
    notes: 'Exceptional Performance'
  },
  {
    _id: ObjectId('65f52d56270308fddd06a1ae'),
    name: 'Alex',
    subject: 'Literature',
    score: 78
  },
  {
    _id: ObjectId('65f52d56270308fddd06a1af'),
    name: 'Tom',
    subject: 'History',
    score: 78
  },
  {
    _id: ObjectId('65f52d56270308fddd06a1b0'),
    name: 'Tom',
    subject: 'History',
    score: 65,
    notes: 'Adequate'
  },
```

Code:

db.studentgrades.createIndex({name: 1},{name:"student name index"}); **Output:**

```
students> db.studentgrades.createIndex({name: 1},{name:"student name index"});
student name index
```

Finding indexes You can find all the available indexes in a MongoDB collection by using the getIndexes method. This will return all the indexes in a specific collection. db..getIndexes() Let's view all the indexes in the studentgrades collection using the following command:

```
db.studentgrades.getIndexes()
```

Code: db.studentgrades.getIndexes();

Output:

```
students>
[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  { v: 2, key: { name: 1 }, name: 'student name index' }
]
```

Dropping indexes To delete an index from a collection, use the dropIndex method while specifying the index name to be dropped. db..dropIndex() Let's remove the user-created index with the index name student name index, as shown below. db.studentgrades.dropIndex("student name index")

Code: db.studentgrades.dropIndex("student name index");

Output:

```
students> db.studentgrades.dropIndex("student name index");
{ nIndexesWas: 2, ok: 1 }
```

You can also use the index field value for removing an index without a defined name: db.studentgrades.dropIndex({name:1})

Code:

db.studentgrades.dropIndex({name:1}); **Output:**

```
students> db.studentgrades.dropIndex({name:1});
```

The dropIndexes command can also drop all the indexes excluding the default _id index. db.studentgrades.dropIndexes()

Code:

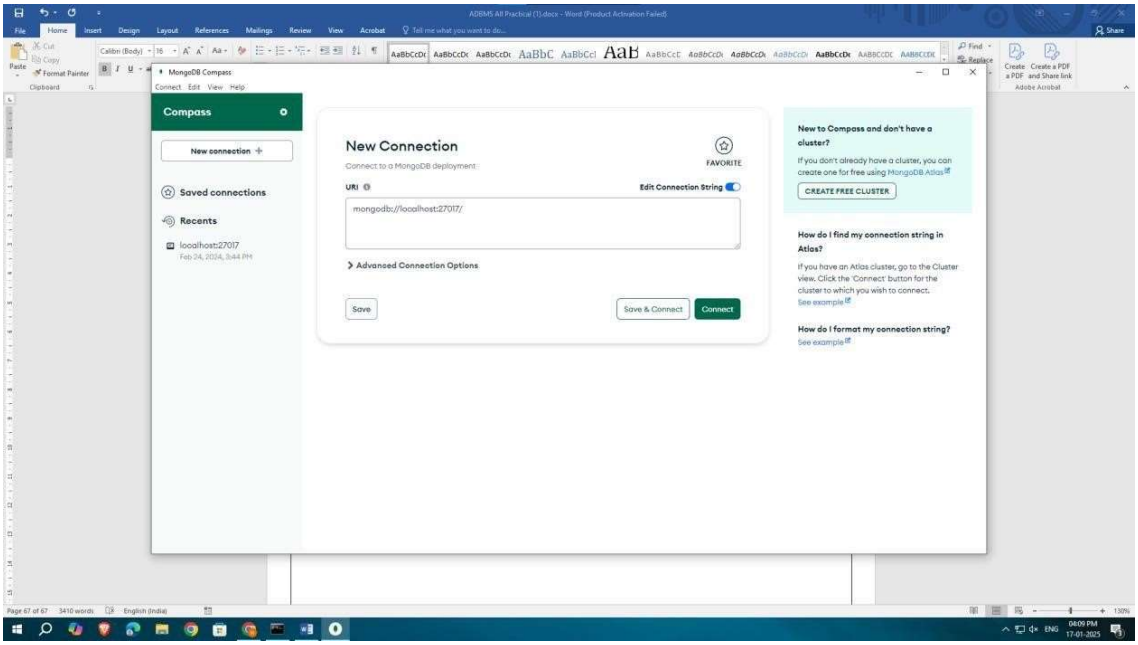
db.studentgrades.dropIndexes(); **Output:**

```
students> db.studentgrades.dropIndexes();
{
  nIndexesWas: 1,
  msg: 'non-_id indexes dropped for collection',
  ok: 1
}
```

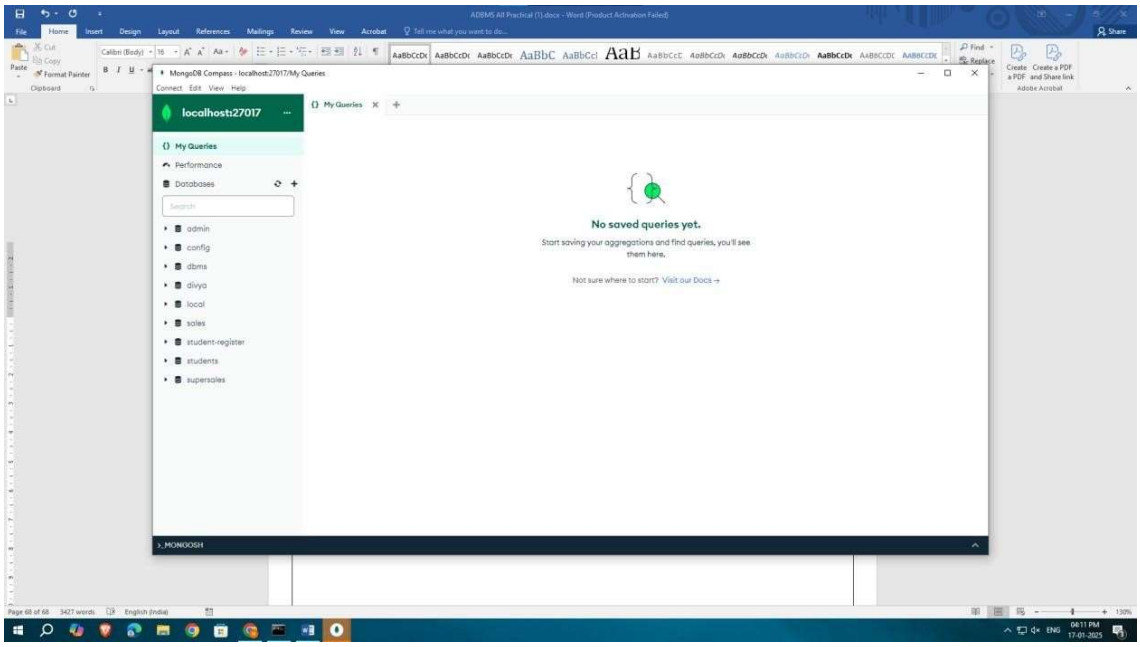
2. Create all the types of indexes (discussed in class) which will help in finding certain words in a document by using AIRPORT (dataset).

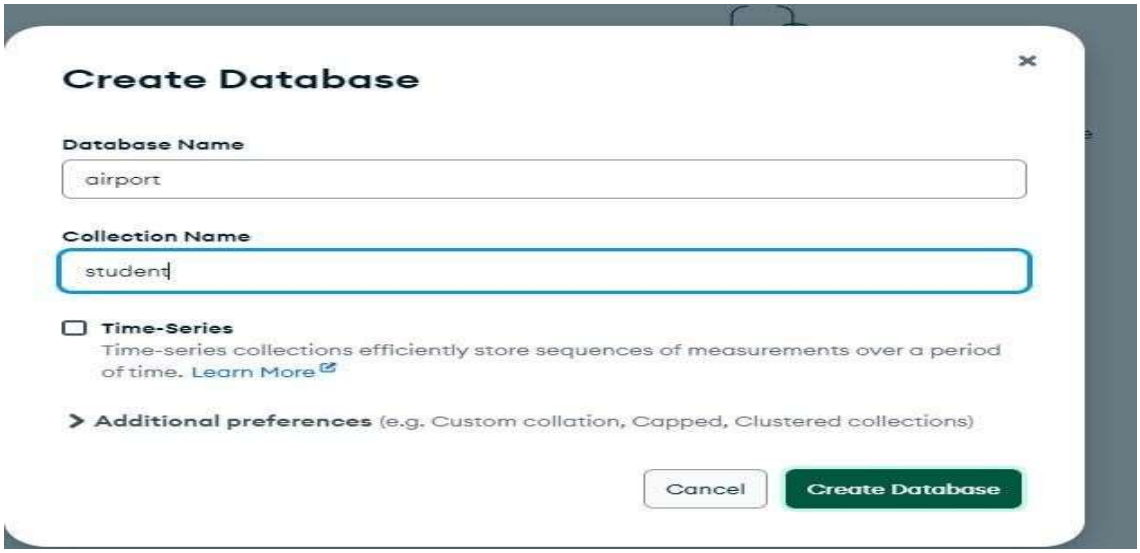
Step 1: Go to mongodb compass

Step 2: Connect to the localhost

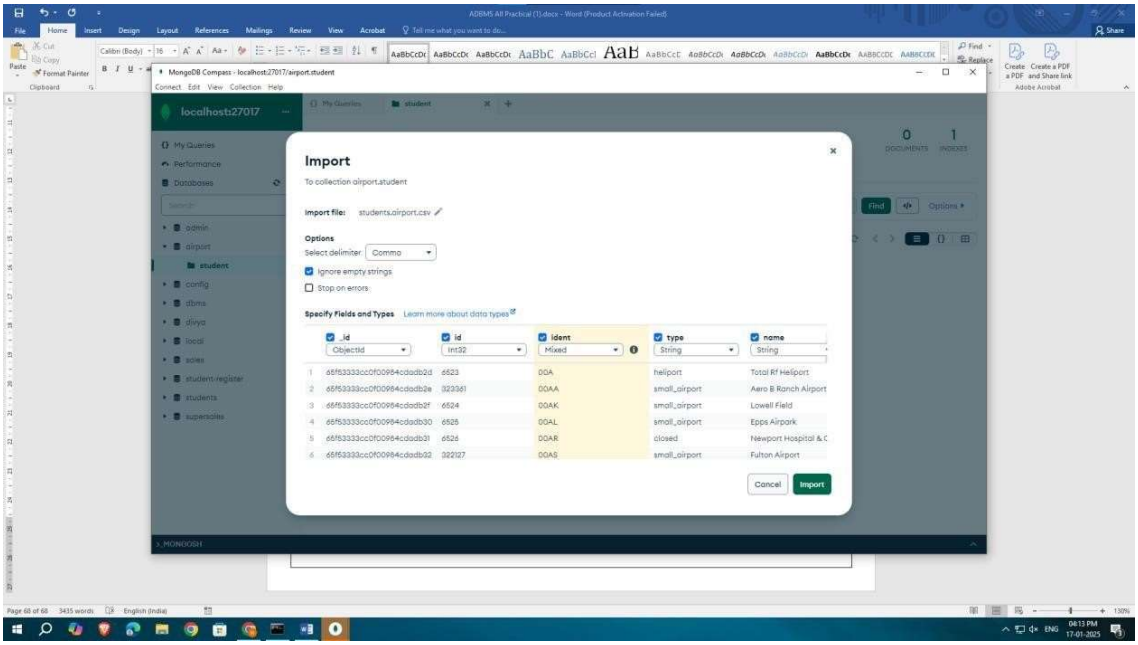


Step 3: Create a databases and upload airport file

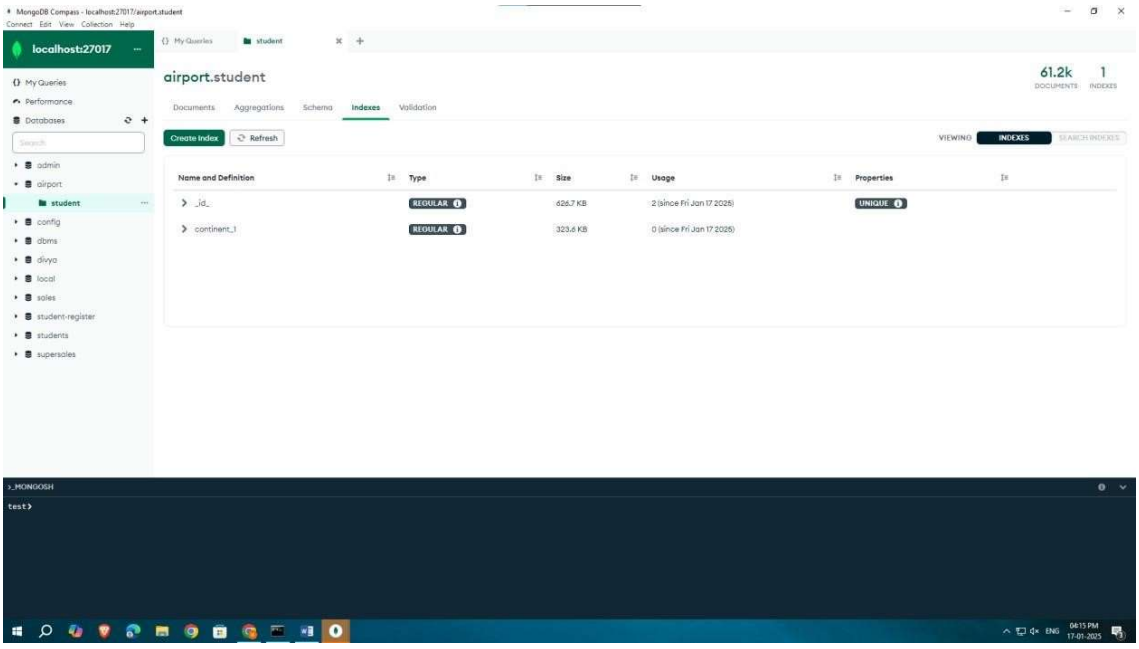

localhost:27017
My Queries
Performance
Databases
admin
config
dbms
divya
local
sales
student-register
students
supersales
No saved queries yet.
Start saving your aggregations and find queries, you'll see them here.
Not sure where to start? Visit our Docs →
>_MONGOSH


Create Database
Database Name
airport
Collection Name
student
Time-Series
Time-series collections efficiently store sequences of measurements over a period of time. Learn More
Additional preferences (e.g. Custom collation, Capped, Clustered collections)
Cancel
Create Database

Step 4: Import data and click on import



Step 5: Create Indexes



Step 6: Using different indexes