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Course : MCS NoSQL (LAB TEST 01)

Question 05 - A:

Import Cars.csv:

```
Command Prompt

C:\Program Files\MongoDB\Server\4.4\bin>mongoimport --db mcsCat --collection cars --type=csv --file=D:\cars.csv --headerline
2021-02-19T11:59:21.786+0530    connected to: mongodb://localhost/
2021-02-19T11:59:21.865+0530    32 document(s) imported successfully. 0 document(s) failed to import.
```

Insert:

```
Command Prompt - mongo.exe

> db.cars.insertOne({"": "Kia Forte", "mpg": 22, "cyl": 8, "disp": 160, "hp": 53, "drat": 4.06, "wt": 3.215, "qsec": 17.20, "vs": 1, "am": 0, "gear": 4, "carb": 4});
{
  "acknowledged" : true,
  "insertedId" : ObjectId("602f5dd49ced2fc946c6e1f4")
}
```

Read (Where mpg < 11):

```
Command Prompt - mongo.exe

> db.cars.find({"mpg":{$lt:11}});
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae2f"), "" : "Cadillac Fleetwood", "mpg" : 10.4, "cyl" : 8, "disp" : 472, "hp" : 205, "drat" : 2.93, "wt" : 5.25, "qsec" : 17.98, "vs" : 0, "am" : 0, "gear" : 3, "carb" : 4 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae30"), "" : "Lincoln Continental", "mpg" : 10.4, "cyl" : 8, "disp" : 460, "hp" : 215, "drat" : 3, "wt" : 5.424, "qsec" : 17.82, "vs" : 0, "am" : 0, "gear" : 3, "carb" : 4 }
```

Update (vs to 1, Where mpg < 11):

```
Command Prompt - mongo.exe

> db.cars.updateMany({"mpg":{$lt:11}},{$set:{"vs":1}});
{ "acknowledged" : true, "matchedCount" : 2, "modifiedCount" : 2 }
> db.cars.find({"mpg":{$lt:11}});
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae2f"), "" : "Cadillac Fleetwood", "mpg" : 10.4, "cyl" : 8, "disp" : 472, "hp" : 205, "drat" : 2.93, "wt" : 5.25, "qsec" : 17.98, "vs" : 1, "am" : 0, "gear" : 3, "carb" : 4 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae30"), "" : "Lincoln Continental", "mpg" : 10.4, "cyl" : 8, "disp" : 460, "hp" : 215, "drat" : 3, "wt" : 5.424, "qsec" : 17.82, "vs" : 1, "am" : 0, "gear" : 3, "carb" : 4 }
```

Delete (Ferrari Dino):

```
Command Prompt - mongo.exe
> db.cars.count();
33
> db.cars.deleteOne({"": "Ferrari Dino"});
{ "acknowledged" : true, "deletedCount" : 1 }
> db.cars.count();
32
>
```

Question 05 - B:

Map & Reduce:

```
Command Prompt - mongo.exe
> var mapf=function(){emit(this.id,this.gear);};
> var reducef=function(_id,hp){return Array.sum(hp);};
> db.cars.mapReduce(mapf,reducef,{out:"HP"})
{ "result" : "HP", "ok" : 1 }
>
```

```
Command Prompt - mongo.exe
> var mapf=function(){emit(this.id,this.gear);};
> var reducef=function(_id,hp){return Array.sum(hp);};
> db.cars.mapReduce(mapf,reducef,{out:"HP"})
{ "result" : "HP", "ok" : 1 }
> db.HP.find()
{ "_id" : null, "value" : 117 }
>
```

Question 05 - C:

Single Index:

```
Command Prompt - mongo.exe
> db.cars.createIndex({disp:-1});
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 1,
  "numIndexesAfter" : 2,
  "ok" : 1
}
```

Compound Index:

```
Command Prompt - mongo.exe
> db.cars.createIndex({disp:-1, hp:1});
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 2,
  "numIndexesAfter" : 3,
  "ok" : 1
}
```

Text Index:

```
Command Prompt - mongo.exe
> db.cars.createIndex({"title":"text"});
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 3,
  "numIndexesAfter" : 4,
  "ok" : 1
}
```

Partial:

```
Command Prompt - mongo.exe
> db.cars.createIndex({gear:-1},{partialFilterExpression:{"mpg":{$lt:11}}});
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 4,
  "numIndexesAfter" : 5,
  "ok" : 1
}
```

Covered Queries:

```
Command Prompt - mongo.exe
> db.cars.createIndex({disp:1});
{
  "createdCollectionAutomatically" : false,
  "numIndexesBefore" : 5,
  "numIndexesAfter" : 6,
  "ok" : 1
}
> db.cars.find({disp:{$gt:400}},{disp:1});
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae2f"), "disp" : 472 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae30"), "disp" : 460 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae31"), "disp" : 440 }
```

Collation:

```
Command Prompt - mongo.exe
> db.cars.find({disp:{$gt:400}}).collation({locale:"en_US"});
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae2f"), "" : "Cadillac Fleetwood", "mpg" : 10.4, "cyl" : 8, "disp" : 472, "hp" : 205, "drat" : 2.93, "wt" : 5.25, "qsec" : 17.98, "vs" : 1, "am" : 0, "gear" : 3, "carb" : 4 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae30"), "" : "Lincoln Continental", "mpg" : 10.4, "cyl" : 8, "disp" : 460, "hp" : 215, "drat" : 3, "wt" : 5.424, "qsec" : 17.82, "vs" : 1, "am" : 0, "gear" : 3, "carb" : 4 }
{ "_id" : ObjectId("602f5ac1697c264b1ac2ae31"), "" : "Chrysler Imperial", "mpg" : 14.7, "cyl" : 8, "disp" : 440, "hp" : 230, "drat" : 3.23, "wt" : 5.345, "qsec" : 17.42, "vs" : 0, "am" : 0, "gear" : 3, "carb" : 4 }
```