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CLASS: TE (B) COMP
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ASSIGNMENT 11

- **CREATING DATABASE AND COLLECTION:**

```
> show databases;
admin     0.000GB
assign10  0.000GB
assign9   0.000GB
config    0.000GB
local     0.000GB
> use assign11
switched to db assign11
> db.createCollection("emp_info")
{ "ok" : 1 }
```

- **INSERTING VALUES IN COLLECTION:**

```
> db.emp_info.insert({_id:1,emp_name:"Bhavik",emp_age:20,emp_city:"Pune",emp_salary:80000})
WriteResult({ "nInserted" : 1 })
> db.emp_info.insert({_id:2,emp_name:"Rahul",emp_age:22,emp_city:"Mumbai",emp_salary:50000})
WriteResult({ "nInserted" : 1 })
> db.emp_info.insert({_id:3,emp_name:"Raj",emp_age:21,emp_city:"Mumbai",emp_salary:40000})
WriteResult({ "nInserted" : 1 })
> db.emp_info.insert({_id:4,emp_name:"Vijay",emp_age:25,emp_city:"Pune",emp_salary:70000})
WriteResult({ "nInserted" : 1 })
> db.emp_info.insert({_id:5,emp_name:"Advait",emp_age:20,emp_city:"Pune",emp_salary:85000})
WriteResult({ "nInserted" : 1 })
> db.emp_info.find()
{ "_id" : 1, "emp_name" : "Bhavik", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 80000 }
{ "_id" : 2, "emp_name" : "Rahul", "emp_age" : 22, "emp_city" : "Mumbai", "emp_salary" : 50000 }
{ "_id" : 3, "emp_name" : "Raj", "emp_age" : 21, "emp_city" : "Mumbai", "emp_salary" : 40000 }
{ "_id" : 4, "emp_name" : "Vijay", "emp_age" : 25, "emp_city" : "Pune", "emp_salary" : 70000 }
{ "_id" : 5, "emp_name" : "Advait", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 85000 }
>
```

- **AGGREGATION QUERIES :-**

1)$sum & $group (Finding the number of employees in each city):

```
> db.emp_info.aggregate([{$group : {_id:"$emp_city", category: {$sum :1}}}])
{ "_id" : "Mumbai", "category" : 2 }
{ "_id" : "Pune", "category" : 3 }
>
```

2)$min & $match (Finding Min salary in Pune):

```
> db.emp_info.aggregate([{$match:{"emp_city":"Pune"}},{$group:{_id:null,min_salary:{$min:"$emp_salary"}}}])
{ "_id" : null, "min_salary" : 70000 }
```

3)$max (Finding Min salary in Mumbai):

```
> db.emp_info.aggregate([{$match:{"emp_city":"Mumbai"}},{$group:{_id:null,min_salary:{$max:"$emp_salary"}}}])
{ "_id" : null, "min_salary" : 50000 }
```

3)$avg (Finding Avg Salary):

```
> db.emp_info.aggregate([{$group:{_id:null,avg_salary:{$avg:"$emp_salary"}}}])
{ "_id" : null, "avg_salary" : 65000 }
>
```

4) $first (Finding first salary in Table):

```
> db.emp_info.aggregate([{$group:{_id:null,first_salary:{$first:"$emp_salary"}}}])
{ "_id" : null, "first_salary" : 80000 }
```

5)$last (Finding last salary in Table):

```
> db.emp_info.aggregate([{$group:{_id:null,last_salary:{$last:"$emp_salary"}}}])
{ "_id" : null, "last_salary" : 85000 }
>
```

6)$sort- Sorting In Ascending And Descending :

```
> db.emp_info.aggregate([{$sort:{_id:1}}])
{ "_id" : 1, "emp_name" : "Bhavik", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 80000 }
{ "_id" : 2, "emp_name" : "Rahul", "emp_age" : 22, "emp_city" : "Mumbai", "emp_salary" : 50000 }
{ "_id" : 3, "emp_name" : "Raj", "emp_age" : 21, "emp_city" : "Mumbai", "emp_salary" : 40000 }
{ "_id" : 4, "emp_name" : "Vijay", "emp_age" : 25, "emp_city" : "Pune", "emp_salary" : 70000 }
{ "_id" : 5, "emp_name" : "Advait", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 85000 }
> db.emp_info.aggregate([{$sort:{_id:-1}}])
{ "_id" : 5, "emp_name" : "Advait", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 85000 }
{ "_id" : 4, "emp_name" : "Vijay", "emp_age" : 25, "emp_city" : "Pune", "emp_salary" : 70000 }
{ "_id" : 3, "emp_name" : "Raj", "emp_age" : 21, "emp_city" : "Mumbai", "emp_salary" : 40000 }
{ "_id" : 2, "emp_name" : "Rahul", "emp_age" : 22, "emp_city" : "Mumbai", "emp_salary" : 50000 }
{ "_id" : 1, "emp_name" : "Bhavik", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 80000 }
>
```

7)Use of $limit:

```
> db.emp_info.aggregate([{$match:{emp_city:"Pune"}},{$limit:1}])
{ "_id" : 1, "emp_name" : "Bhavik", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 80000 }
>
```

8)Use of $skip:

```
> db.emp_info.aggregate([{$match:{emp_city:"Pune"}},{$skip:1}])
{ "_id" : 4, "emp_name" : "Vijay", "emp_age" : 25, "emp_city" : "Pune", "emp_salary" : 70000 }
{ "_id" : 5, "emp_name" : "Advait", "emp_age" : 20, "emp_city" : "Pune", "emp_salary" : 85000 }
>
```

- **Indexing:**

1)Creating Index:

```
> db.emp_info.createIndex({emp_name:1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 1,
        "numIndexesAfter" : 2,
        "ok" : 1
}
> db.emp_info.ensureIndex({emp_salary:1})
{
        "createdCollectionAutomatically" : false,
        "numIndexesBefore" : 2,
        "numIndexesAfter" : 3,
        "ok" : 1
}
```

2)Finding All Indexes :

```
> db.emp_info.getIndexes()
[
        {
                "v" : 2,
                "key" : {
                        "_id" : 1
                },
                "name" : "_id_"
        },
        {
                "v" : 2,
                "key" : {
                        "emp_name" : 1
                },
                "name" : "emp_name_1"
        },
        {
                "v" : 2,
                "key" : {
                        "emp_salary" : 1
                },
                "name" : "emp_salary_1"
        }
]
>
```

3) Dropping Index (Particular Index And All Index):

```
> db.emp_info.dropIndex({"emp_name":1})
{ "nIndexesWas" : 3, "ok" : 1 }
> db.emp_info.dropIndexes()
{
        "nIndexesWas" : 2,
        "msg" : "non-_id indexes dropped for collection",
        "ok" : 1
}
>
```

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