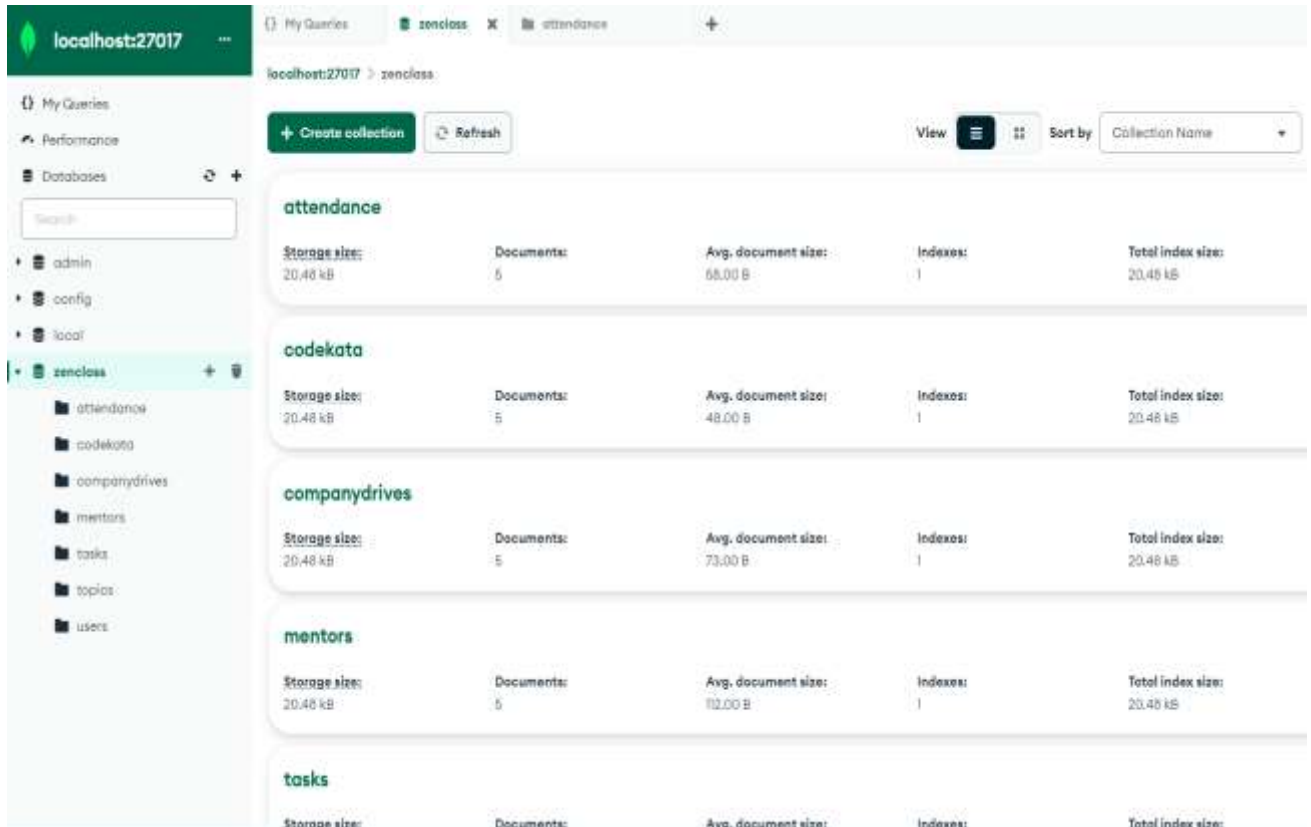


CREATED DATABASE



The screenshot shows the MongoDB Compass interface for a database named 'zenclass' on 'localhost:27017'. The left sidebar lists the database and its collections: 'attendance', 'codekata', 'companydrives', 'mentors', 'tasks', and 'users'. The main panel displays details for the 'attendance' collection, including storage size (20.48 kB), document count (5), average document size (68.00 B), and index count (1). Below this, the same details are shown for 'codekata', 'companydrives', 'mentors', and 'tasks'.

Collection Name	Storage size	Documents	Avg. document size	Indexes	Total index size
attendance	20.48 kB	5	68.00 B	1	20.48 kB
codekata	20.48 kB	5	48.00 B	1	20.48 kB
companydrives	20.48 kB	5	73.00 B	1	20.48 kB
mentors	20.48 kB	5	112.00 B	1	20.48 kB
tasks	20.48 kB	5	112.00 B	1	20.48 kB

1. Find all the topics and tasks which are thought in the month of October :

Solution :

```
db.topics.aggregate([
```

```
{
```

```
$lookup: {
```

```
from: "tasks",
```

```
localField: "topicid",
```

```
foreignField: "topicid",
```

```
as: "taskinfo"

}

},

{

$match: {

$and: [

{ topic_date: { $gte: new Date("2020-10-01"), $lt: new Date("2020-11-01") } },

{

$or: [

{ "taskinfo.due_date": { $gte: new Date("2020-10-01"), $lt: new Date("2020-11-01") } },

{ "taskinfo.due_date": { $exists: false } }

]

}

]

},

{

$project: {

_id: 0,

topicid: 1,

topic: 1,

topic_date: 1,

tasks: "$taskinfo.task",
```

due_dates: "\$taskinfo.due_date"

}

}

)

```
< {  
  topicid: 1,  
  topic: 'HTML',  
  topic_date: 2020-10-17T18:30:00.000Z,  
  tasks: [  
    'HTML Task'  
  ],  
  due_dates: [  
    2020-10-17T18:30:00.000Z  
  ]  
}  
{  
  topicid: 2,  
  topic: 'CSS',  
  topic_date: 2020-10-27T18:30:00.000Z,  
  tasks: [  
    'CSS Task'  
  ],  
  due_dates: [  
    2020-10-27T18:30:00.000Z  
  ]  
}  
zenclass>
```

2. Find all the company drives which appeared between 15 oct-2020 and 31-oct-2020 :

Solution :

```
db.companydrives.find({
  $or: [
    { drive_date: { $gte: new Date("15-oct-2020") } },
    { drive_date: { $lte: new Date("31-oct-2020") } }
  ]
})
```

```
>_MONGOSH
< {
  _id: ObjectId('667166b79a6a0ee2a8588964'),
  userid: 1,
  drive_date: 2020-10-19T18:30:00.000Z,
  company: 'Apple'
}
{
  _id: ObjectId('667166b79a6a0ee2a8588965'),
  userid: 1,
  drive_date: 2020-10-21T18:30:00.000Z,
  company: 'Amazon'
}
{
  _id: ObjectId('667166b79a6a0ee2a8588966'),
  userid: 2,
  drive_date: 2020-10-24T18:30:00.000Z,
  company: 'TCS'
}
{
  _id: ObjectId('667166b79a6a0ee2a8588967'),
  userid: 3,
  drive_date: 2020-10-29T18:30:00.000Z,
  company: 'Flipkart'
}
{
  _id: ObjectId('667166b79a6a0ee2a8588968'),
  userid: 4
```

3. Find all the company drives and students who are appeared for the placement :

Solution :

```
db.companydrives.aggregate([  
  
  {  
  
    $lookup: {  
  
      from: "users",  
  
      localField: "userid",  
  
      foreignField: "userid",  
  
      as: "userinfo"  
  
    }  
  
  },  
  
  {  
  
    $project: {  
  
      _id: 0,  
  
      company: 1,  
  
      drive_date: 1,  
  
      students: "$userinfo"  
  
    }  
  
  } ])
```

```

>_MONGOSH
< {
  drive_date: 2020-10-19T18:30:00.000Z,
  company: 'Apple',
  students: [
    {
      _id: ObjectId('6671659e9a6a0ee2a858894b'),
      userid: 1,
      name: 'Santhosh',
      email: 'santhosh@gmail.com'
    }
  ]
}
{
  drive_date: 2020-10-21T18:30:00.000Z,
  company: 'Amazon',
  students: [
    {
      _id: ObjectId('6671659e9a6a0ee2a858894b'),
      userid: 1,
      name: 'Santhosh',
      email: 'santhosh@gmail.com'
    }
  ]
}
{
  drive_date: 2020-10-24T18:30:00.000Z,
  company: 'TCS'
}

```

4. Find the number of problems solved by the user in codekata :

Solution :

```

db.codekata.aggregate([
{
  $lookup: {
    from: "users",
    localField: "userid",

```

```
foreignField: "userid",
as: "userinfo"
}
},
{
$group: {
_id: {
userid: "$userid",
},
total_problems_solved: { $sum: "$problems" }
},
{
$project: {
_id: 0,
userid: "$_id.userid",
username: "$_id.username",
total_problems_solved: 1
}
}
}
```

>_MONGOSH

```
< {
  total_problems_solved: 60,
  userid: 2,
  username: [
    'Surya'
  ]
}
{
  total_problems_solved: 90,
  userid: 3,
  username: [
    'Shiyam'
  ]
}
{
  total_problems_solved: 51,
  userid: 4,
  username: [
    'Muhib'
  ]
}
{
  total_problems_solved: 50,
  userid: 1,
  username: [
    'Santhosh'
  ]
}
```

5. Find all the mentors with who has the mentee's count more than 15 :

Solution :

```
db.users.aggregate([  
  
  {  
  
    $match: { mentorid: { $exists: true } }  
  
  },  
  
  {  
  
    $group: {  
  
      _id: "$mentorid",  
  
      mentorname: { $first: "$mentorname" },  
  
      mentee_count: { $sum: 1 }  
  
    }  
  
  },  
  
  {  
  
    $match: { mentee_count: { $gt: 15 } }  
  
  },  
  
  {  
  
    $project: {  
  
      _id: 0,  
  
      mentorid: "$_id",  
  
      mentorname: 1,  
  
      mentee_count: 1  
  
    }  
  
  }  
  
])
```

>_MONGOSH

```
> db.getCollection('mentors').find({mentee_count:{$gt:15}})
```

```
< {
  _id: ObjectId('667166e09a6a0ee2a8588969'),
  mentorid: 1,
  mentorname: 'Rupan',
  mentor_email: 'rupan@gmail.com',
  mentee_count: 20
}
{
  _id: ObjectId('667166e09a6a0ee2a858896a'),
  mentorid: 2,
  mentorname: 'Nagaraj',
  mentor_email: 'nagaraj@gmail.com',
  mentee_count: 18
}
{
  _id: ObjectId('667166e09a6a0ee2a858896b'),
  mentorid: 3,
  mentorname: 'Krishna',
  mentor_email: 'krishna@gmail.com',
  mentee_count: 30
}
{
  _id: ObjectId('667166e09a6a0ee2a858896d'),
  mentorid: 5,
  mentorname: 'Manoj',
  mentor_email: 'manoj@gmail.com'
}
```

6) Find the number of users who are absent and task is not submitted between 15 oct-2020 and 31-oct-2020:

Solution:

```
db.attendance.aggregate([
```

```
{
```

```
$lookup: {
  from: "topics",
  localField: "topicid",
  foreignField: "topicid",
  as: "topics"
}
},
{
  $lookup: {
    from: "tasks",
    localField: "topicid",
    foreignField: "topicid",
    as: "tasks"
  }
},
{
  $match: {
    attended: false,
    "tasks.submitted": false,
    $and: [
      { "topics.topic_date": { $gte: new Date("15-oct-2020") } },
      { "topics.topic_date": { $lte: new Date("31-oct-2020") } },
      { "tasks.due_date": { $gte: new Date("15-oct-2020") } },
      { "tasks.due_date": { $lte: new Date("31-oct-2020") } }
    ]
  }
}
```

}

},

{\$count: "No_of_students_absent"}}))