





## Design database for Zen class programme

```
use zen_class
switched to db zen_class
db.users.insertMany([
  {userId:1, userName:'Abdul', email:'abdulrahmanraziq548@gmail.com', batchId:
'FSD1'},
  {userId:2, userName:'Alfiya', email:'alfiya@gmail.com', batchId: 'FSD2'},
  {userId:3, userName:'Hisham', email:'hisham@gmail.com', batchId:'FSD3'},
  {userId:4, userName:'Ashiq', email: 'ashiq@gmail.com', batchId:'FSD4'},
  {userId:5, userName:'Raziya', email: 'raziyaBanu@gmail.com', batchId:'FSD5'}
])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('668f9ba7f2b4f6b80733b416'),
    '1': ObjectId('668f9ba7f2b4f6b80733b417'),
    '2': ObjectId('668f9ba7f2b4f6b80733b418'),
    '3': ObjectId('668f9ba7f2b4f6b80733b419'),
    '4': ObjectId('668f9ba7f2b4f6b80733b41a')
  }
}
```

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```
db.createCollection("codekata");
```

```
{ ok: 1 }
db.codekata.insertMany([
  {userId:1, problems:50},
  {userId:2, problems:60},
  {userId:3, problems:90},
  {userId:4, problems:51},
  {userId:5, problems:61}
])
```

<pre>_id: ObjectId('668f9d2cf2b4f6b80733b41b') userId: 1 problems: 50</pre>	
<pre>_id: ObjectId('668f9d2cf2b4f6b80733b41c') userId: 2 problems: 60</pre>	
<pre>▶ _id: ObjectId('668f9d2cf2b4f6b80733b41d') userId: 3 problems: 90</pre>	   
<pre>_id: ObjectId('668f9d2cf2b4f6b80733b41e') userId: 4 problems: 51</pre>	
<pre>_id: ObjectId('668f9d2cf2b4f6b80733b41f') userId: 5 problems: 61</pre>	

```
db.attendance.insertMany([
  {userId:1, topicId:2, attendance:true},
  {userId:2, topicId:1, attendance:true},
  {userId:3, topicId:5, attendance:true},
  {userId:4, topicId:3, attendance:true},
  {userId:5, topicId:4, attendance:false}
])
```

<pre> _id: ObjectId('668f9ef6f2b4f6b80733b424') userId: 1 topicId: 2 attendance: true </pre>
<pre> _id: ObjectId('668f9ef6f2b4f6b80733b425') userId: 2 topicId: 1 attendance: true </pre>
<div>▶</div> <pre> _id: ObjectId('668f9ef6f2b4f6b80733b426') userId: 3 topicId: 5 attendance: true </pre> <div>✎ 📄 🖨 🗑</div>
<pre> _id: ObjectId('668f9ef6f2b4f6b80733b427') userId: 4 topicId: 3 attendance: true </pre>
<pre> _id: ObjectId('668f9ef6f2b4f6b80733b428') userId: 5 attendance: true </pre>

```
db.createCollection('topics')
{ ok: 1 }
```

```
db.topics.insertMany([
  {topicId:1, topicName:'HTML', topicDate: new Date("18-Oct-2020")},
  {topicId:2, topicName: 'CSS', topicDate: new Date("28-Oct-2020")},
  {topicId:3, topicName: 'JAVASCRIPT', topicDate: new
Date("05-Nov-2020")},
  {topicId:4, topicName: 'REACTJS', topicDate: new Date("15-Nov-2020")},
  {topicId:5, topicName: 'NODEJS', topicDate: new Date("25-Nov-2020")}
])
```

```
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('668fa1cef2b4f6b80733b429'),
    '1': ObjectId('668fa1cef2b4f6b80733b42a'),
    '2': ObjectId('668fa1cef2b4f6b80733b42b'),
    '3': ObjectId('668fa1cef2b4f6b80733b42c'),
    '4': ObjectId('668fa1cef2b4f6b80733b42d')
  }
}
```

```
}  
}
```

<pre>_id: ObjectId('668fa1cef2b4f6b80733b429') topicId : 1 topicName : "HTML" topicDate : 2020-10-17T18:30:00.000+00:00</pre>
<pre>_id: ObjectId('668fa1cef2b4f6b80733b42a') topicId : 2 topicName : "CSS" topicDate : 2020-10-27T18:30:00.000+00:00</pre>
<pre>_id: ObjectId('668fa1cef2b4f6b80733b42b') topicId : 3 topicName : "JAVASCRIPT" topicDate : 2020-11-04T18:30:00.000+00:00</pre>
<pre>_id: ObjectId('668fa1cef2b4f6b80733b42c') topicId : 4 topicName : "REACTJS" topicDate : 2020-11-14T18:30:00.000+00:00</pre>
<pre>_id: ObjectId('668fa1cef2b4f6b80733b42d') topicId : 5 .....</pre>

```
db.createCollection('tasks')
```

```
db.tasks.insertMany([  
  {taskId:1, topicId:1, userId:1, task:'HTML Task', due_date:new  
Date("18-Oct-2020"), submitted:true},  
  {taskId:2, topicId:2, userId:2, task:'Css Task', due_date:new  
Date("28-Oct-2020"), submitted:false},  
  {taskId:3, topicId:3, userId:3, task:'Javascript Task', due_date:new  
Date("05-Nov-2020"), submitted:true},  
  {taskId:4, topicId:4, userId:4, task:'React Task', due_date:new  
Date("15-Nov-2020"), submitted:true},  
  {taskId:5, topicId:5, userId:5, task:'NodeJs Task', due_date:new  
Date("25-Nov-2020"), submitted:false}  
])
```

</

```
db.createCollection('company_drives')
```

```

db.company_drives.insertMany([
  {userId:1, drive_date:new Date("20-Oct-2020"), company:'Apple'},
  {userId:2, drive_date:new Date("22-Oct-2020"), company:'Amazon'},
  {userId:3, drive_date:new Date("25-Oct-2020"), company: 'TCS'},
  {userId:4, drive_date:new Date("30-Oct-2020"), company: "FlipKart"},
  {userId:5, drive_date:new Date("05-Nov-2020"), company: "Zomato"}
])

```

```
_id: ObjectId('668fecbff2b4f6b80733b433')
userId: 1
drive_date: 2020-10-19T18:30:00.000+00:00
company: "Apple"
```



```
_id: ObjectId('668fecbff2b4f6b80733b434')
userId: 2
drive_date: 2020-10-21T18:30:00.000+00:00
company: "Amazon"
```



```
_id: ObjectId('668fecbff2b4f6b80733b435')
userId: 3
drive_date: 2020-10-24T18:30:00.000+00:00
company: "TCS"
```

```
_id: ObjectId('668fecbff2b4f6b80733b436')
userId: 4
drive_date: 2020-10-29T18:30:00.000+00:00
company: "FlipKart"
```

```
_id: ObjectId('668fecbff2b4f6b80733b437')
userId: 5
drive_date: 2020-11-04T18:30:00.000+00:00
```

```
db.createCollection('mentors')
```

```
db.mentors.insertMany([
  {mentorId:1, mentorName:'Nagaraj', mentorEmail:'nagaraj@gmail.com',
  mentee_count: 20 },
  {mentorId:2, mentorName: 'Anand', mentorEmail:'anand@gmail.com',
  mentee_count:18},
  {mentorId:3, mentorName: 'sathya', mentorEmail:'sathya@gmail.com',
  mentee_count:30},
  {mentorId:4, mentorName:'Sudhakar', mentorEmail:
'sudhakar@gmail.com', mentee_count:15},
  {mentorId:5, mentorName: 'Deva', mentorEmail:'deva@gmail.com',
  mentee_count:20}
])
```

```
_id: ObjectId('668ff025f2b4f6b80733b438')
mentorId : 1
mentorName : "Nagaraj"
mentorEmail : "nagaraj@gmail.com"
mentee_count : 20
```

```
_id: ObjectId('668ff025f2b4f6b80733b439')
mentorId : 2
mentorName : "Anand"
mentorEmail : "anand@gmail.com"
mentee_count : 18
```

```
_id: ObjectId('668ff025f2b4f6b80733b43a')
mentorId : 3
mentorName : "sathya"
mentorEmail : "sathya@gmail.com"
mentee_count : 30
```

```
_id: ObjectId('668ff025f2b4f6b80733b43b')
mentorId : 4
mentorName : "Sudhakar"
mentorEmail : "sudhakar@gmail.com"
mentee_count : 15
```

## Created Database

attendance				
Storage size: 4,10 kB	Documents: 5	Avg. document size: 60.00 B	Indexes: 1	Total index size: 4,10 kB
codekata				
Storage size: 4,10 kB	Documents: 5	Avg. document size: 48.00 B	Indexes: 1	Total index size: 4,10 kB
company_drives				
Storage size: 4,10 kB	Documents: 0	Avg. document size: 0 B	Indexes: 1	Total index size: 4,10 kB
mentors				
Storage size: 20,48 kB	Documents: 5	Avg. document size: 111.00 B	Indexes: 1	Total index size: 20,48 kB
tasks				
Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:

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

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

```

$lookup: {
  from: 'tasks',
  localField: 'topicId',
  foreignField: 'topicId',
  as: 'taskInfo'
}
},
{
  $match: {
    $and: [
      { topicDate: { $gte: new Date("2020-10-01"), $lt: new
Date("2020-11-01") } },
      {
        $or: [
          { "taskInfo.due_date": { $gte: new Date("2020-10-11"), $lt: new
Date("2020-11-01") } },
          { "taskInfo.due_date": { $exists: false } }
        ]
      }
    ]
  }
},
{
  $project: {
    _id: 0,
    topicId: 1,
    topicName: 1,
    topicDate: 1,
    task: "$taskInfo.task",
    due_date: "$taskInfo.due_date"
  }
},
{ $unwind: "$task" },
{ $unwind: "$due_date" }
])

```



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

```
db.company_drives.find({
  $and:[
    {drive_date: {$gte: new Date("15-Oct-2020")}},
    {drive_date: {$lte: new Date("31-Oct-2020")}}
  ]
})
```

```
{
  _id: ObjectId('668fecbff2b4f6b80733b433'),
  userId: 1,
  drive_date: 2020-10-19T18:30:00.000Z,
  company: 'Apple'
}
{
  _id: ObjectId('668fecbff2b4f6b80733b434'),
  userId: 2,
  drive_date: 2020-10-21T18:30:00.000Z,
  company: 'Amazon'
}
{
  _id: ObjectId('668fecbff2b4f6b80733b435'),
  userId: 3,
  drive_date: 2020-10-24T18:30:00.000Z,
  company: 'TCS'
}
{
  _id: ObjectId('668fecbff2b4f6b80733b436'),
  userId: 4,
  drive_date: 2020-10-29T18:30:00.000Z,
  company: 'FlipKart'
}
```

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

```
db.company_drives.aggregate([
  {
    $lookup:{
      from: 'users',
      localField:"userId",
      foreignField:"userId",
      as: "userInfo"
    }
  },
  {
    $project:{
      _id:0,
      userId:1,
      drive_date:1,
      company:1,
      students:"$userInfo"
    }
  }
])

{
  userId: 1,
  drive_date: 2020-10-19T18:30:00.000Z,
  company: 'Apple',
  students: [
    {
      _id: ObjectId('668f9ba7f2b4f6b80733b416'),
      userId: 1,
      userName: 'Abdul',
```

```
    email: 'abdulrahmanraziq548@gmail.com',
    batchId: 'FSD1'
  }
]
}

{
  userId: 2,
  drive_date: 2020-10-21T18:30:00.000Z,
  company: 'Amazon',
  students: [
    {
      _id: ObjectId('668f9ba7f2b4f6b80733b417'),
      userId: 2,
      userName: 'Alfiya',
      email: 'alfiya@gmail.com',
      batchId: 'FSD2'
    }
  ]
}
{
  userId: 3,
  drive_date: 2020-10-24T18:30:00.000Z,
  company: 'TCS',
  students: [
    {
      _id: ObjectId('668f9ba7f2b4f6b80733b418'),
      userId: 3,
      userName: 'Hisham',
      email: 'hisham@gmail.com',
      batchId: 'FSD3'
    }
  ]
}
{
```

```

    userId: 4,
    drive_date: 2020-10-29T18:30:00.000Z,
    company: 'FlipKart',
    students: [
      {
        _id: ObjectId('668f9ba7f2b4f6b80733b419'),
        userId: 4,
        userName: 'Ashiq',
        email: 'ashiq@gmail.com',
        batchId: 'FSD4'
      }
    ]
  }
  {
    userId: 5,
    drive_date: 2020-11-04T18:30:00.000Z,
    company: 'Zomato',
    students: [
      {
        _id: ObjectId('668f9ba7f2b4f6b80733b41a'),
        userId: 5,
        userName: 'Raziya',
        email: 'raziyaBanu@gmail.com',
        batchId: 'FSD5'
      }
    ]
  }
}

```

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

```

db.users.aggregate([
  {

```

```

        $lookup:{
            from:'codekata',
            localField:'userId',
            foreignField:'userId',
            as: 'codekataInfo'
        }
    },
    {
        $project:{
            _id:0,
            userId:1,
            userName:1,
            email:1,
            batchId:1,
            problem_solved:"$codekataInfo.problems"
        }
    },
    {$unwind:"$problem_solved"}
])

```

```

{
  userId: 1,
  userName: 'Abdul',
  email: 'abdulrahmanraziq548@gmail.com',
  batchId: 'FSD1',
  problem_solved: 50
}
{
  userId: 2,
  userName: 'Alfiya',

```

```
email: 'alfiya@gmail.com',
batchId: 'FSD2',
problem_solved: 60
}
{
  userId: 3,
  userName: 'Hisham',
  email: 'hisham@gmail.com',
  batchId: 'FSD3',
  problem_solved: 90
}
{
  userId: 4,
  userName: 'Ashiq',
  email: 'ashiq@gmail.com',
  batchId: 'FSD4',
  problem_solved: 51
}
{
  userId: 5,
  userName: 'Raziya',
  email: 'raziyaBanu@gmail.com',
  batchId: 'FSD5',
  problem_solved: 61
}
```

**Find all the mentors with who has the mentee's count more than 15**

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

```
{
  _id: ObjectId('668ff025f2b4f6b80733b438'),
  mentorId: 1,
  mentorName: 'Nagaraj',
  mentorEmail: 'nagaraj@gmail.com',
  mentee_count: 20
}
{
  _id: ObjectId('668ff025f2b4f6b80733b439'),
  mentorId: 2,
  mentorName: 'Anand',
  mentorEmail: 'anand@gmail.com',
  mentee_count: 18
}
{
  _id: ObjectId('668ff025f2b4f6b80733b43a'),
  mentorId: 3,
  mentorName: 'sathya',
  mentorEmail: 'sathya@gmail.com',
  mentee_count: 30
}
{
  _id: ObjectId('668ff025f2b4f6b80733b43c'),
  mentorId: 5,
  mentorName: 'Deva',
  mentorEmail: 'deva@gmail.com',
  mentee_count: 20
}
```

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

```

db.users.aggregate([
  {
    $lookup:{
      from:'tasks',
      localField:'userId',
      foreignField:'userId',
      as:'taskInfo'
    },
  },
  {
    $match:{
      'taskInfo.submitted':false,
      'taskInfo.due_date':{$gte: new Date('2020-10-15')},
      'taskInfo.due_date':{$lt:new Date('2020-11-01')}
    },
  },
  {
    $project:{
      _id:0,
      userId:1,
      email:1,
      batchId:1,
      studentTask:'$taskInfo'
    }
  }
])

```

```

{
  userId: 2,
  email: 'alfiya@gmail.com',
  batchId: 'FSD2',
  studentTask: [
    {
      _id: ObjectId('668feb55f2b4f6b80733b42f'),

```



```
    taskId: 2,  
    topicId: 2,  
    userId: 2,  
    task: 'Css Task',  
    due_date: 2020-10-27T18:30:00.000Z,  
    submitted: false  
  }  
]  
}
```