

Design database for Zen class programme

users

codekata

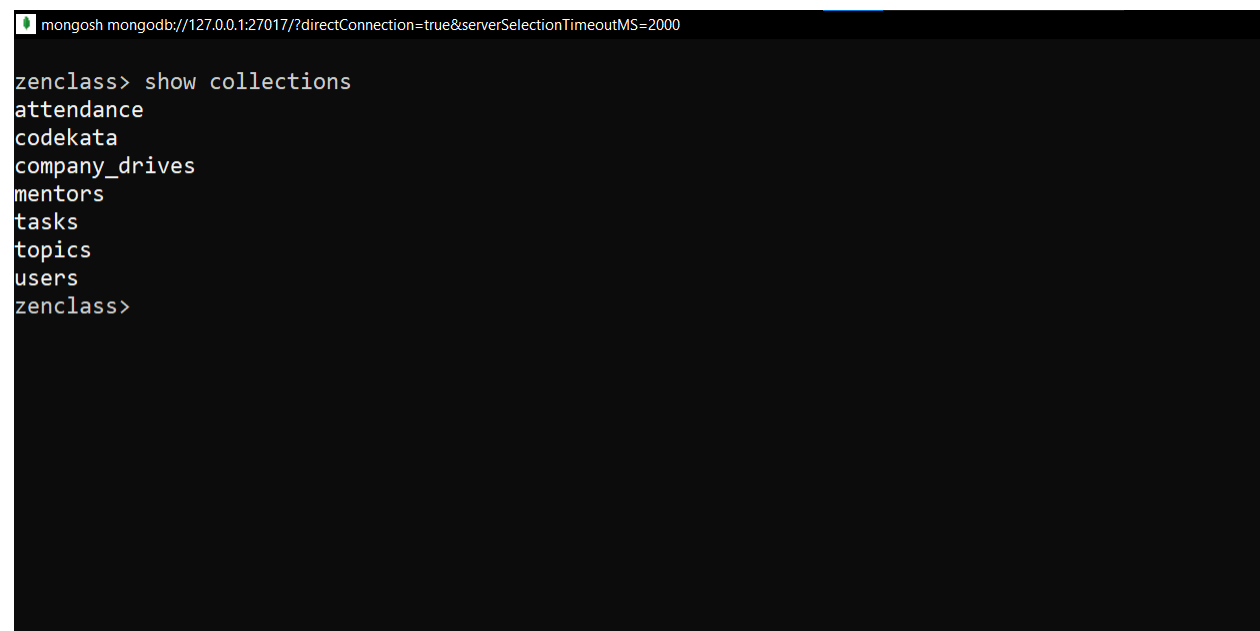
attendance

topics

tasks

company_drives

mentors



```
mongosh mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000
zenclass> show collections
attendance
codekata
company_drives
mentors
tasks
topics
users
zenclass>
```

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

```

zenclass> db.topics.aggregate([
...   { $match: { date: { $gte: ISODate("2020-10-01T00:00:00Z"), $lte: ISODate("2020-10-31T23:59:59Z") } } },
...   { $lookup: { from: "tasks", localField: "_id", foreignField: "topic_id", as: "tasks" } }
... ]);
[
  {
    _id: 1,
    topic_name: 'Topic 1',
    date: ISODate('2020-10-10T00:00:00.000Z'),
    tasks: [
      {
        _id: 1,
        topic_id: 1,
        task_name: 'Task 1',
        submission_date: ISODate('2020-10-10T00:00:00.000Z')
      }
    ]
  },
  {
    _id: 2,
    topic_name: 'Topic 2',
    date: ISODate('2020-10-11T00:00:00.000Z'),
    tasks: [
      {
        _id: 2,
        topic_id: 2,
        task_name: 'Task 2',
        submission_date: ISODate('2020-10-11T00:00:00.000Z')
      }
    ]
  },
  {
    _id: 3,
    topic_name: 'Topic 3',
    date: ISODate('2020-10-12T00:00:00.000Z'),
    tasks: [
      {
        _id: 3,
        topic_id: 3,
        task_name: 'Task 3',
        submission_date: ISODate('2020-10-12T00:00:00.000Z')
      }
    ]
  }
],

```

```

{
  _id: 4,
  topic_name: 'Topic 4',
  date: ISODate('2020-10-13T00:00:00.000Z'),
  tasks: [
    {
      _id: 4,
      topic_id: 4,
      task_name: 'Task 4',
      submission_date: ISODate('2020-10-13T00:00:00.000Z')
    }
  ]
},
{
  _id: 5,
  topic_name: 'Topic 5',
  date: ISODate('2020-10-14T00:00:00.000Z'),
  tasks: [
    {
      _id: 5,
      topic_id: 5,
      task_name: 'Task 5',
      submission_date: ISODate('2020-10-14T00:00:00.000Z')
    }
  ]
}
]
zenclass>

```

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

```

zenclass> db.companydrives.find({ drive_date: { $gte: ISODate("2020-10-15T00:00:00Z"), $lte: ISODate("2020-10-31T23:59:59Z") } });
[
  {
    _id: 1,
    company_name: 'Company A',
    drive_date: ISODate('2020-10-15T00:00:00.000Z')
  },
  {
    _id: 2,
    company_name: 'Company B',
    drive_date: ISODate('2020-10-20T00:00:00.000Z')
  },
  {
    _id: 3,
    company_name: 'Company C',
    drive_date: ISODate('2020-10-25T00:00:00.000Z')
  },
  {
    _id: 4,
    company_name: 'Company D',
    drive_date: ISODate('2020-10-30T00:00:00.000Z')
  }
]
zenclass>

```

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

```

zenclass> db.placements.aggregate([
...   {
...     $lookup: {
...       from: "companydrives",
...       localField: "drive_id",
...       foreignField: "_id",
...       as: "company_drive_details"
...     }
...   },
...   {
...     $lookup: {
...       from: "users",
...       localField: "user_id",
...       foreignField: "_id",
...       as: "user_details"
...     }
...   },
...   {
...     $project: {
...       _id: 0,
...       "company_drive_details.company_name": 1,
...       "user_details.name": 1
...     }
...   }
... ]);
[
  {
    company_drive_details: [ { company_name: 'Company A' } ],
    user_details: [ { name: 'John Doe' } ]
  },
  {
    company_drive_details: [ { company_name: 'Company B' } ],
    user_details: [ { name: 'Jane Smith' } ]
  },
  {
    company_drive_details: [ { company_name: 'Company C' } ],
    user_details: [ { name: 'Alice Johnson' } ]
  },
  {
    company_drive_details: [ { company_name: 'Company D' } ],
    user_details: [ { name: 'Bob Brown' } ]
  },
  {
    company_drive_details: [ { company_name: 'Company A' } ],
    user_details: [ { name: 'Charlie Davis' } ]
  }
]
zenclass>

```

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

```

zenclass> db.codekata.aggregate([
...   {
...     $group: {
...       _id: "$user_id",
...       problems_solved: { $sum: 1 }
...     },
...     {
...       $lookup: {
...         from: "users",
...         localField: "_id",
...         foreignField: "_id",
...         as: "user_details"
...       }
...     },
...     {
...       $project: {
...         _id: 0,
...         "user_details.name": 1,
...         problems_solved: 1
...       }
...     }
...   }
... ]));
[
  { problems_solved: 1, user_details: [ { name: 'Jane Smith' } ] },
  { problems_solved: 1, user_details: [ { name: 'John Doe' } ] },
  { problems_solved: 1, user_details: [ { name: 'Alice Johnson' } ] },
  { problems_solved: 1, user_details: [ { name: 'Charlie Davis' } ] },
  { problems_solved: 1, user_details: [ { name: 'Bob Brown' } ] }
]
zenclass>

```

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

```

zenclass> db.mentors.find({
...   mentee_count: { $gt: 15 }
... });
[
  { _id: 2, mentor_name: 'Mentor 2', mentee_count: 20 },
  { _id: 4, mentor_name: 'Mentor 4', mentee_count: 18 },
  { _id: 5, mentor_name: 'Mentor 5', mentee_count: 25 }
]
zenclass>

```

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

```
zenclass> db.attendance.aggregate([
...   {
...     $match: {
...       date: {
...         $gte: ISODate("2020-10-15T00:00:00Z"),
...         $lte: ISODate("2020-10-31T23:59:59Z")
...       },
...       status: "Absent"
...     }
...   },
...   {
...     $lookup: {
...       from: "tasks",
...       localField: "user_id",
...       foreignField: "user_id",
...       as: "tasks"
...     }
...   },
...   {
...     $match: {
...       "tasks.submission_date": {
...         $gte: ISODate("2020-10-15T00:00:00Z"),
...         $lte: ISODate("2020-10-31T23:59:59Z")
...       }
...     }
...   },
...   {
...     $group: {
...       _id: "$user_id",
...       absent_count: { $sum: 1 }
...     }
...   }
... ]);

zenclass>
```