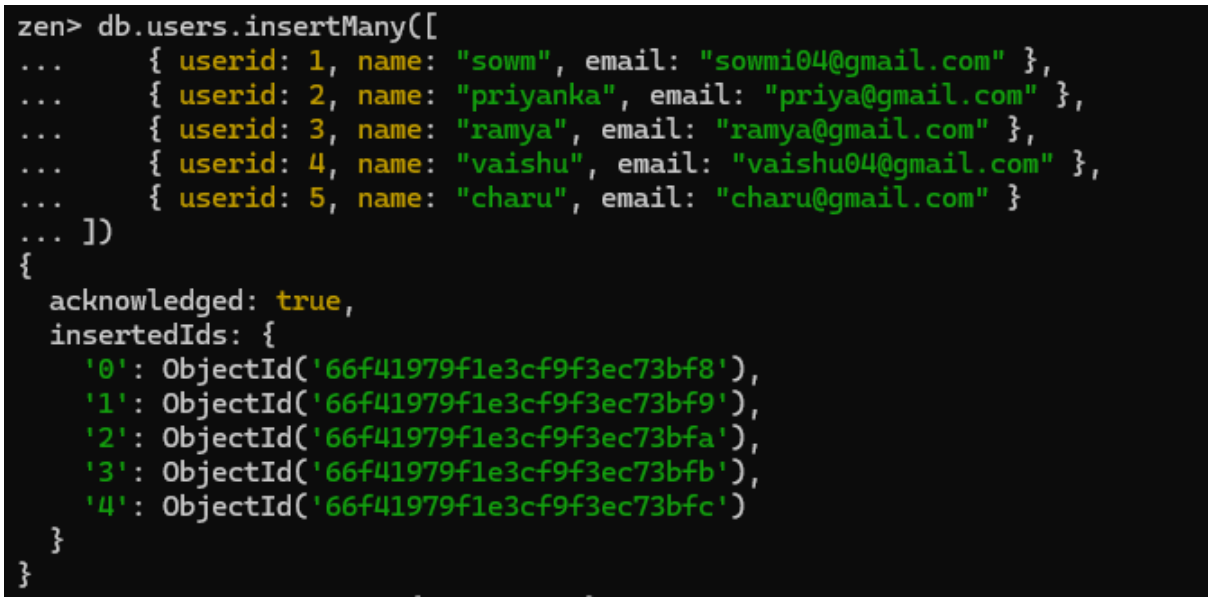
Design Database for Zen Class Programme

Create database

```
use zen_class
```

Create collection and insert data “USERS” :

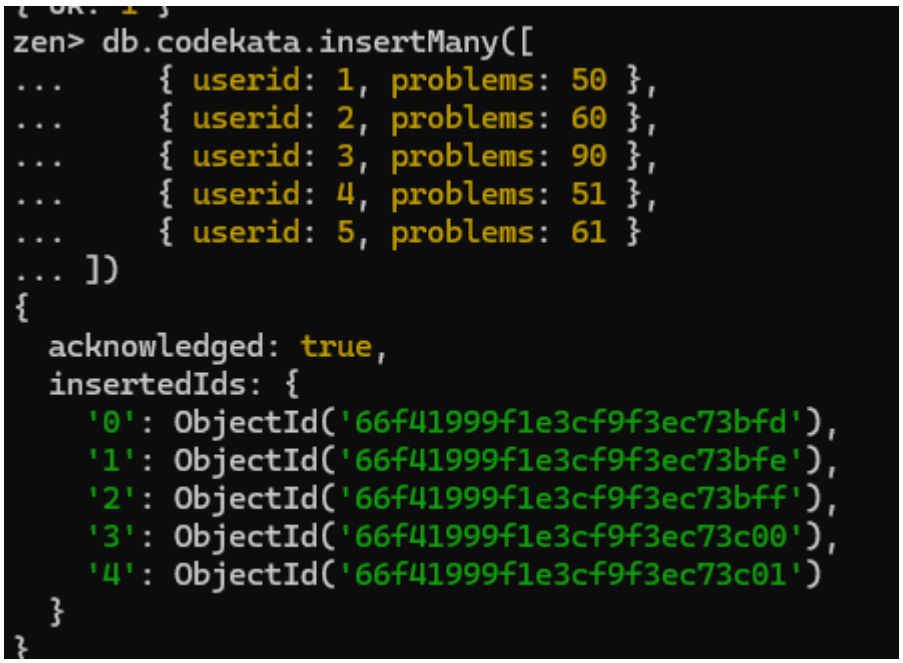
```
db.users.insertMany([
    { userid: 1, name: "sowm", email: "sowmi04@gmail.com" },
    { userid: 2, name: "priyanka", email: "priya@gmail.com" },
    { userid: 3, name: "ramya", email: "ramya@gmail.com" },
    { userid: 4, name: "vaishu", email: "vaishu04@gmail.com" },
    { userid: 5, name: "charu", email: "charu@gmail.com" }
])
```



Create collection and insert data “CODEKATA” :

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

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



Create collection and insert data “ATTENDANCE” :

```
db.createCollection("attendance");
db.attendance.insertMany([
    { userid: 1, topicid: 2, attended: true },
    { userid: 2, topicid: 1, attended: false },
    { userid: 3, topicid: 5, attended:true },
    { userid: 4, topicid: 3, attended: true },
    { userid: 5, topicid: 4, attended: false }
])
```

Create collection and insert data “TOPICS” :

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

db.topics.insertMany([
```

```
    { topicid: 1, topic: "HTML", topic_date: new Date("18-Oct-2020") },
    { topicid: 2, topic: "CSS", topic_date: new Date("28-Oct-2020") },
    { topicid: 3, topic: "JavaScript", topic_date: new Date("05-Nov-2020")
},
    { topicid: 4, topic: "ReactJS", topic_date: new Date("15-Nov-2020") },
    { topicid: 5, topic: "NodeJS", topic_date: new Date("25-Nov-2020") }
])
```

```
zen> db.createCollection("topics");
{ ok: 1 }
zen> db.topics.insertMany([
...     { topicid: 1, topic: "HTML", topic_date: new Date("18-Oct-2020") },
...     { topicid: 2, topic: "CSS", topic_date: new Date("28-Oct-2020") },
...     { topicid: 3, topic: "JavaScript", topic_date: new Date("05-Nov-2020") },
...     { topicid: 4, topic: "ReactJS", topic_date: new Date("15-Nov-2020") },
...     { topicid: 5, topic: "NodeJS", topic_date: new Date("25-Nov-2020") }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('66f419c4f1e3cf9f3ec73c07'),
    '1': ObjectId('66f419c4f1e3cf9f3ec73c08'),
    '2': ObjectId('66f419c4f1e3cf9f3ec73c09'),
    '3': ObjectId('66f419c4f1e3cf9f3ec73c0a'),
    '4': ObjectId('66f419c4f1e3cf9f3ec73c0b')
  }
}
```

Create collection and insert data “TASKS” :

```
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 }

])

```
zen> db.createCollection("tasks");
{ ok: 1 }
zen> 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 }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('66f419daf1e3cf9f3ec73c0c'),
    '1': ObjectId('66f419daf1e3cf9f3ec73c0d'),
    '2': ObjectId('66f419daf1e3cf9f3ec73c0e'),
    '3': ObjectId('66f419daf1e3cf9f3ec73c0f'),
    '4': ObjectId('66f419daf1e3cf9f3ec73c10')
  }
}
```

Create collection and insert data – “COMPANY DRIVES” :

db.createCollection("companydrives");

db.companydrives.insertMany([

{ userid: 1, drive_date: new Date("20-Oct-2020"), company: "Apple" },

{ userid: 1, drive_date: new Date("22-Oct-2020"), company: "Amazon" },

{ userid: 2, drive_date: new Date("25-Oct-2020"), company: "TCS" },

{ userid: 3, drive_date: new Date("30-Oct-2020"), company: "Flipkart" },

{ userid: 4, drive_date: new Date("05-Nov-2020"), company: "Zomato" }

])

```
zen> db.createCollection("companydrives");
{ ok: 1 }
zen> db.companydrives.insertMany([
...     { userid: 1, drive_date: new Date("20-Oct-2020"), company: "Apple" },
...     { userid: 1, drive_date: new Date("22-Oct-2020"), company: "Amazon" },
...     { userid: 2, drive_date: new Date("25-Oct-2020"), company: "TCS" },
...     { userid: 3, drive_date: new Date("30-Oct-2020"), company: "Flipkart" },
...     { userid: 4, drive_date: new Date("05-Nov-2020"), company: "Zomato" }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('66f419fbf1e3cf9f3ec73c11'),
    '1': ObjectId('66f419fbf1e3cf9f3ec73c12'),
    '2': ObjectId('66f419fbf1e3cf9f3ec73c13'),
    '3': ObjectId('66f419fbf1e3cf9f3ec73c14'),
    '4': ObjectId('66f419fbf1e3cf9f3ec73c15')
  }
}
```

Create collection and insert data “MENTORS” :

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


db.mentors.insertMany([
   { mentorid: 1, mentorname: "Rai", mentor_email: "rai@gmail.com", mentee_count: 20 },
   { mentorid: 2, mentorname: "Naren", mentor_email: "naren@gmail.com", mentee_count: 18 },
   { mentorid: 3, mentorname: "Krish", mentor_email: "krish@gmail.com", mentee_count: 30 },
   { mentorid: 4, mentorname: "Saii", mentor_email: "sai@gmail.com", mentee_count: 15 },
   { mentorid: 5, mentorname: "shankar", mentor_email: "shankar@gmail.com", mentee_count: 20 }
])
```

```
zen> db.createCollection("mentors");
{ ok: 1 }
zen> db.mentors.insertMany([
...     { mentorid: 1, mentorname: "Rai", mentor_email: "rai@gmail.com", mentee_count: 20 },
...     { mentorid: 2, mentorname: "Naren", mentor_email: "naren@gmail.com", mentee_count: 18 },
...     { mentorid: 3, mentorname: "Krish", mentor_email: "krish@gmail.com", mentee_count: 30 },
...     { mentorid: 4, mentorname: "Saii", mentor_email: "sai@gmail.com", mentee_count: 15 },
...     { mentorid: 5, mentorname: "shankar", mentor_email: "shankar@gmail.com", mentee_count: 20 }
... ])
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('66f41a61f1e3cf9f3ec73c16'),
    '1': ObjectId('66f41a61f1e3cf9f3ec73c17'),
    '2': ObjectId('66f41a61f1e3cf9f3ec73c18'),
    '3': ObjectId('66f41a61f1e3cf9f3ec73c19'),
    '4': ObjectId('66f41a61f1e3cf9f3ec73c1a')
  }
}
```

1. **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: [
        { 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"
    }
}
])
```

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

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

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

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

---

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

```
db.codekata.aggregate([
```

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

```
])
```

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

```
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
        }
    }
])
```

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

```
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"}])
```