SHEETHAL A
sheethala.ai2021@dce.edu.in

MONGO DB CASE STUDY - (2)

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

Collections:

1. Topics

```
// Topics
db.topics.insertMany([
  { topic_id: 1, task_id: 1, topic: "HTML", description: "Master Html", start_date: ISODate("2023-10-07"), end_date: ISODate("2023-10-08") },
  { topic_id: 2, task_id: 2, topic: "CSS", description: "Master Css", start_date: ISODate("2023-10-14"), end_date: ISODate("2023-10-15") },
  { topic_id: 3, task_id: 3, topic: "Javascript", description: "Master Javascript", start_date: ISODate("2023-10-21"), end_date: ISODate("2023-10-22") },
  { topic_id: 4, task_id: 4, topic: "React", description: "Master React", start_date: ISODate("2023-10-28"), end_date: ISODate("2023-10-29") },
  { topic_id: 5, task_id: 5, topic: "Bootstrap", description: "Master Bootstrap", start_date: ISODate("2023-11-05"), end_date: ISODate("2023-11-06") }
]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('688645321ebc85de39bc0908'),
    '1': ObjectId('688645321ebc85de39bc0909'),
    '2': ObjectId('688645321ebc85de39bc090a'),
    '3': ObjectId('688645321ebc85de39bc090b'),
    '4': ObjectId('688645321ebc85de39bc090c')
  }
}
```

2. Tasks

```
// Tasks
db.tasks.insertMany([
  { topic_id: 1, task_id: 1, topic: "HTML", description: "Create a content using HTML", deadline_date: ISODate("2023-10-09") },
  { topic_id: 2, task_id: 2, topic: "CSS", description: "Style - created HTML content", deadline_date: ISODate("2023-10-16") },
  { topic_id: 3, task_id: 3, topic: "Javascript", description: "Add logics to the created content", deadline_date: ISODate("2023-10-23") },
  { topic_id: 4, task_id: 4, topic: "React", description: "Create same website using React", deadline_date: ISODate("2023-10-30") },
  { topic_id: 5, task_id: 5, topic: "Bootstrap", description: "Create same website using Bootstrap", deadline_date: ISODate("2023-11-06") }
]);
{
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('688645421ebc85de39bc090d'),
    '1': ObjectId('688645421ebc85de39bc090e'),
    '2': ObjectId('688645421ebc85de39bc090f'),
    '3': ObjectId('688645421ebc85de39bc0910'),
    '4': ObjectId('688645421ebc85de39bc0911')
  }
}
```

```
> db.topics.aggregate([
    {
      $match: {
        start_date: {
          $gte: ISODate("2023-10-01"),
          $lte: ISODate("2023-10-31")
        }
      }
    },
    {
      $lookup: {
        from: "tasks",
        localField: "task_id",
        foreignField: "task_id",
        as: "task_info"
      }
    },
    { $unwind: "$task_info" },
    {
      $project: {
        _id: 0,
        topic: 1,
        topic_description: "$description",
        task_description: "$task_info.description",
        task_deadline: "$task_info.deadline_date"
      }
    }
]);
```

```
< {
    topic: 'HTML',
    topic_description: 'Master Html',
    task_description: 'Create a content using HTML',
    task_deadline: 2023-10-09T00:00:00.000Z
  }
  {
    topic: 'CSS',
    topic_description: 'Master Css',
    task_description: 'Style - created HTML content',
    task_deadline: 2023-10-16T00:00:00.000Z
  }
  {
    topic: 'Javascript',
    topic_description: 'Master Javascript',
    task_description: 'Add logics to the created content',
    task_deadline: 2023-10-23T00:00:00.000Z
  }
  {
    topic: 'React',
    topic_description: 'Master React',
    task_description: 'Create same website using React',
    task_deadline: 2023-10-30T00:00:00.000Z
  }
```

2. Find the Company drives between 15th Oct and 31st Oct

Collection: companydrives

```
> // Company Drives
db.companydrives.insertMany([
    { userid: 1, drive_date: ISODate("2023-10-16"), company: "TCS" },
    { userid: 1, drive_date: ISODate("2023-10-19"), company: "HCL" },
    { userid: 2, drive_date: ISODate("2023-10-22"), company: "Amazon" },
    { userid: 3, drive_date: ISODate("2023-10-28"), company: "Wipro" },
    { userid: 4, drive_date: ISODate("2023-11-01"), company: "ITC" }
]);
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('6886454b1ebc85de39bc0912'),
      '1': ObjectId('6886454b1ebc85de39bc0913'),
      '2': ObjectId('6886454b1ebc85de39bc0914'),
      '3': ObjectId('6886454b1ebc85de39bc0915'),
      '4': ObjectId('6886454b1ebc85de39bc0916')
    }
}
```

```
> db.companydrives.find({
    drive_date: {$gte: ISODate("2023-10-15"),$lte: ISODate("2023-10-31")}});
< {
    _id: ObjectId('6886454b1ebc85de39bc0912'),
    userid: 1,
    drive_date: 2023-10-16T00:00:00.000Z,
    company: 'TCS'
}
{
    _id: ObjectId('6886454b1ebc85de39bc0913'),
    userid: 1,
    drive_date: 2023-10-19T00:00:00.000Z,
    company: 'HCL'
}
{
    _id: ObjectId('6886454b1ebc85de39bc0914'),
    userid: 2,
    drive_date: 2023-10-22T00:00:00.000Z,
    company: 'Amazon'
}
{
    _id: ObjectId('6886454b1ebc85de39bc0915'),
    userid: 3,
    drive_date: 2023-10-28T00:00:00.000Z,
    company: 'Wipro'
}
```

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

Collection: codekata

```
> //  INSERT CODEKATA
  db.codekata.insertMany([
    { user_id: 1, codekata_solved: 300, webkata_solved: 50 },
    { user_id: 2, codekata_solved: 250, webkata_solved: 90 },
    { user_id: 3, codekata_solved: 200, webkata_solved: 50 },
    { user_id: 4, codekata_solved: 190, webkata_solved: 90 },
    { user_id: 5, codekata_solved: 180, webkata_solved: 100 }
  ]);
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('688644bf1ebc85de39bc08d1'),
      '1': ObjectId('688644bf1ebc85de39bc08d2'),
      '2': ObjectId('688644bf1ebc85de39bc08d3'),
      '3': ObjectId('688644bf1ebc85de39bc08d4'),
      '4': ObjectId('688644bf1ebc85de39bc08d5')
    }
  }
```

```
> db.codekata.find({}, { _id: 0, user_id: 1, codekata_solved: 1 });
< {
    user_id: 1,
    codekata_solved: 300
  }
  {
    user_id: 2,
    codekata_solved: 250
  }
  {
    user_id: 3,
    codekata_solved: 200
  }
  {
    user_id: 4,
    codekata_solved: 190
  }
  {
    user_id: 5,
    codekata_solved: 180
  }
  {
    user_id: 1,
    codekata_solved: 300
  }
  {
    user_id: 2,
    codekata_solved: 250
  }
```

```
  {
    user_id: 3,
    codekata_solved: 200
  }
  {
    user_id: 4,
    codekata_solved: 190
  }
  {
    user_id: 5,
    codekata_solved: 180
  }
```

4. Find the Mentors with more than 15 mentees
Collection: mentors

```
> // ✔ INSERT MENTORS
  db.mentors.insertMany([
    { mentor_id: 1, mentor_name: 'Sathish', mentees: 30 },
    { mentor_id: 2, mentor_name: 'Sudar', mentees: 13 },
    { mentor_id: 3, mentor_name: 'Thillan', mentees: 50 },
    { mentor_id: 4, mentor_name: 'Kulunthan', mentees: 70 },
    { mentor_id: 5, mentor_name: 'Mani', mentees: 16 },
    { mentor_id: 6, mentor_name: 'Balu', mentees: 10 },
    { mentor_id: 7, mentor_name: 'Guru', mentees: 13 },
    { mentor_id: 8, mentor_name: 'Parthiban', mentees: 32 },
    { mentor_id: 9, mentor_name: 'Nesamani', mentees: 14 },
    { mentor_id: 10, mentor_name: 'Vijay', mentees: 35 }
  ]);
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('688644a31ebc85de39bc08c2'),
      '1': ObjectId('688644a31ebc85de39bc08c3'),
      '2': ObjectId('688644a31ebc85de39bc08c4'),
      '3': ObjectId('688644a31ebc85de39bc08c5'),
      '4': ObjectId('688644a31ebc85de39bc08c6'),
      '5': ObjectId('688644a31ebc85de39bc08c7'),
      '6': ObjectId('688644a31ebc85de39bc08c8'),
      '7': ObjectId('688644a31ebc85de39bc08c9'),
      '8': ObjectId('688644a31ebc85de39bc08ca'),
      '9': ObjectId('688644a31ebc85de39bc08cb')
    }
  }
```

```
> db.mentors.find({ mentees: { $gt: 15 } });
< {
    _id: ObjectId('688644a31ebc85de39bc08c2'),
    mentor_id: 1,
    mentor_name: 'Sathish',
    mentees: 30
  }
  {
    _id: ObjectId('688644a31ebc85de39bc08c4'),
    mentor_id: 3,
    mentor_name: 'Thillan',
    mentees: 50
  }
  {
    _id: ObjectId('688644a31ebc85de39bc08c5'),
    mentor_id: 4,
    mentor_name: 'Kulunthan',
    mentees: 70
  }
  {
    _id: ObjectId('688644a31ebc85de39bc08c6'),
    mentor_id: 5,
    mentor_name: 'Mani',
    mentees: 16
  }
  {
    _id: ObjectId('688644a31ebc85de39bc08c9'),
    mentor_id: 8,
    mentor_name: 'Parthiban',
    mentees: 32
  }
  {
    _id: ObjectId('688644a31ebc85de39bc08cb'),
    mentor_id: 10,
    mentor_name: 'Vijay',
    mentees: 35
  }
```

5. Find number of users who are absent and task is not submitted between 15-Oct-2023 and 31-Oct-2023

Collections: attendance

```
> // Full Attendance
  db.attendance.insertMany([
    { userid:1, Class_date:ISODate("2023-10-07"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-08"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-14"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-15"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-21"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-22"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-28"), attendance:true },
    { userid:1, Class_date:ISODate("2023-10-29"), attendance:true },
    { userid:1, Class_date:ISODate("2023-11-05"), attendance:true },
    { userid:1, Class_date:ISODate("2023-11-06"), attendance:true },

    { userid:2, Class_date:ISODate("2023-10-07"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-08"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-14"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-15"), attendance:false },
    { userid:2, Class_date:ISODate("2023-10-21"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-22"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-28"), attendance:true },
    { userid:2, Class_date:ISODate("2023-10-29"), attendance:true },
    { userid:2, Class_date:ISODate("2023-11-05"), attendance:true },
    { userid:2, Class_date:ISODate("2023-11-06"), attendance:false },

    { userid:3, Class_date:ISODate("2023-10-07"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-08"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-14"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-15"), attendance:false },
```

```
    { userid:3, Class_date:ISODate("2023-10-21"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-22"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-28"), attendance:true },
    { userid:3, Class_date:ISODate("2023-10-29"), attendance:true },
    { userid:3, Class_date:ISODate("2023-11-05"), attendance:true },
    { userid:3, Class_date:ISODate("2023-11-06"), attendance:false },

    { userid:4, Class_date:ISODate("2023-10-07"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-08"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-14"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-15"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-21"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-22"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-28"), attendance:true },
    { userid:4, Class_date:ISODate("2023-10-29"), attendance:true },
    { userid:4, Class_date:ISODate("2023-11-05"), attendance:true },
    { userid:4, Class_date:ISODate("2023-11-06"), attendance:true },

    { userid:5, Class_date:ISODate("2023-10-07"), attendance:true },
    { userid:5, Class_date:ISODate("2023-10-08"), attendance:true },
    { userid:5, Class_date:ISODate("2023-10-14"), attendance:true },
    { userid:5, Class_date:ISODate("2023-10-15"), attendance:true },
    { userid:5, Class_date:ISODate("2023-10-21"), attendance:false },
    { userid:5, Class_date:ISODate("2023-10-22"), attendance:true },
    { userid:5, Class_date:ISODate("2023-10-28"), attendance:false },
    { userid:5, Class_date:ISODate("2023-10-29"), attendance:true },
    { userid:5, Class_date:ISODate("2023-11-05"), attendance:false },
    { userid:5, Class_date:ISODate("2023-11-06"), attendance:false }
  ]);
```

Task_completion

```
// Tasks
db.tasks.insertMany([
    { topic_id: 1, task_id: 1, topic: "HTML", description: "Create a content using HTML", deadline_date: ISODate("2023-10-09") },
    { topic_id: 2, task_id: 2, topic: "CSS", description: "Style - created HTML content", deadline_date: ISODate("2023-10-16") },
    { topic_id: 3, task_id: 3, topic: "Javascript", description: "Add logics to the created content", deadline_date: ISODate("2023-10-23") },
    { topic_id: 4, task_id: 4, topic: "React", description: "Create same website using React", deadline_date: ISODate("2023-10-30") },
    { topic_id: 5, task_id: 5, topic: "Bootstrap", description: "Create same website using Bootstrap", deadline_date: ISODate("2023-11-06") }
]);
{
    acknowledged: true,
    insertedIds: {
        '0': ObjectId('688645421ebc85de39bc090d'),
        '1': ObjectId('688645421ebc85de39bc090e'),
        '2': ObjectId('688645421ebc85de39bc090f'),
        '3': ObjectId('688645421ebc85de39bc0910'),
        '4': ObjectId('688645421ebc85de39bc0911')
    }
}
```

```
const absentUsers = db.attendance.distinct("userid", { attendance: false, Class_date: {$gte: ISODate("2023-10-15"), $lte: ISODate("2023-10-31") } });

const incompleteUsers = db.task_completion.distinct("userid", { task_completion: false });

const bothAbsentAndIncomplete = absentUsers.filter(user => incompleteUsers.includes(user));

print("Number of users absent and not submitted tasks:", bothAbsentAndIncomplete.length);
Number of users absent and not submitted tasks:
2
```