MongoDB-Database Design

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

All the topics which are thought in the month of October

```
> db.topics.find({ month: "October" });
< {
    _id: ObjectId('671a5e7cf5d32d5d121c0a95'),
    topic_id: 1,
    topic: 'Introduction to HTML',
    month: 'October'
  }
  {
    _id: ObjectId('671a5e7cf5d32d5d121c0a96'),
    topic_id: 2,
    topic: 'CSS Basics',
    month: 'October'
  }
  {
    _id: ObjectId('671a5e7cf5d32d5d121c0a97'),
    topic_id: 3,
    topic: 'JavaScript Fundamentals',
    month: 'October'
  }
```

All the tasks which are thought in the month of October

```
> db.tasks.find({
    due_date: {
        $gte: "2020-10-01",
        $lt: "2020-10-31"
    }
});

< {
    _id: ObjectId('671ba4047cd7199dc46ba6fd'),
    task_id: 1,
    user_id: 1,
    task: 'HTML Project',
    due_date: '2020-10-18',
    submitted: true,
    attendance: 'present'
}
{
    _id: ObjectId('671ba4047cd7199dc46ba6fe'),
    task_id: 2,
    user_id: 2,
    task: 'CSS Styling',
    due_date: '2020-10-22',
    submitted: false,
    attendance: 'present'
}
{
    _id: ObjectId('671ba4047cd7199dc46ba6ff'),
    task_id: 3,
    user_id: 3,
```

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

All the company drives which appeared between 15 oct-2020 and 31-oct-2020

```
db.company_drives.find({
    date: {
        $gte: new Date("2020-10-15"),
        $lte: new Date("2020-10-31")
    }
});
{
  _id: ObjectId('671a5efb76751432337fbfcf'),
  company_name: 'Tesla',
  date: 2020-10-25T00:00:00.000Z,
  no_of_attended: 5,
  students_appeared: [
    1,
    2,
    3
  ]
}
```

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

All the company drives and students who are appeared for the placement.

```
> db.company_drives.aggregate([
    {
      $lookup: {
        from: "users",
        localField: "students_appeared",
        foreignField: "user_id",
        as: "students_info"
      }
    },
    {
      $project: {
        company_name: 1,
        student_names: "$students_info.name"
      }
    }
]).forEach(function(value) {
    print("Company Name : " + value.company_name);
    print("Students Appeared : " + JSON.stringify(value.student_names));
});
< Company Name : Tesla
< Students Appeared : ["Naruto Uzumaki","Sakura Haruno","Sasuke Uchiha"]
< Company Name : Google
< Students Appeared : ["Sakura Haruno","Sasuke Uchiha","Kakashi Hatake"]
< Company Name : Microsoft
< Students Appeared : ["Naruto Uzumaki","Kakashi Hatake","Hinata Hyuga"]
< Company Name : Amazon
< Students Appeared : ["Naruto Uzumaki","Hinata Hyuga"]
< Company Name : Apple
< Students Appeared : ["Sakura Haruno","Sasuke Uchiha","Kakashi Hatake"]
```

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

Number of problems solved by the user in codekata

```
> db.codekata.aggregate([
    {
        $group: {
            _id: "$user_id",
            total_completed: { $sum: "$completed" }
        }
    }
]);
< {
    _id: 4,
    total_completed: 20
}
{
    _id: 2,
    total_completed: 80
}
{
    _id: 3,
    total_completed: 100
}
{
    _id: 1,
    total_completed: 45
}
{
    _id: 5,
    total_completed: 55
}
```

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

All the mentors with who has the mentee's count more than 15

```
> db.mentors.find(
      { mentees_count: { $gt: 15 } },
  );
< {
    _id: ObjectId('671a5e9af5d32d5d121c0aa1'),
    mentor_name: 'Shikamaru Nara',
    mentees_count: 20
  }
  {
    _id: ObjectId('671a5e9af5d32d5d121c0aa2'),
    mentor_name: 'Tsunade Senju',
    mentees_count: 30
  }
  {
    _id: ObjectId('671a5e9af5d32d5d121c0aa4'),
    mentor_name: 'Kakashi Hatake',
    mentees_count: 25
  }
  {
    _id: ObjectId('671a5e9af5d32d5d121c0aa5'),
    mentor_name: 'Mikoto Uchiha',
    mentees_count: 18
  }
```

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

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

```
> db.tasks.find({
    due_date: {
        $gte: "2020-10-15",
        $lte: "2020-10-31"
    },
    $or: [
        { attendance: "absent" },
        { submitted: false }
    ]
});
< {
    _id: ObjectId('671ba4047cd7199dc46ba6fe'),
    task_id: 2,
    user_id: 2,
    task: 'CSS Styling',
    due_date: '2020-10-22T00:00:00Z',
    submitted: false,
    attendance: 'present'
}
{
    _id: ObjectId('671ba4047cd7199dc46ba6ff'),
    task_id: 3,
    user_id: 3,
    task: 'JavaScript Challenge',
    due_date: '2020-10-28T00:00:00Z',
    submitted: false,
    attendance: 'absent'
}
```

MongoDB Collection of Data:

MongoDB Compass - localhost:27017/Database

Connections Edit View Help

Compass ⚙

{} My Queries

CONNECTIONS (1)   ✕ + ⋯

Search connections

▼ 🖳 localhost:27017
  ▼ 🛢 Database   + 🗑
      📁 attendance
      📁 codekata
      📁 company_drives
      📁 mentors
      📁 tasks
      📁 topics
      📁 users
  ▶ 🛢 admin
  ▶ 🛢 config
  ▶ 🛢 local

🛢 Dat... ✕ +

localhost:27017 ⟩ Database

>_ Open MongoDB shell   + Create collection   ⟳ Refresh

Sort by Collection Name ▼   ⬆   View ☰ ⊞

attendance

Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
20.48 kB	5	75.00 B	1	36.86 kB

codekata

Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
20.48 kB	5	84.00 B	1	36.86 kB

company_drives

Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
20.48 kB	5	124.00 B	1	24.58 kB

mentors

Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
20.48 kB	5	71.00 B	1	36.86 kB

tasks

Storage size:	Documents:	Avg. document size:	Indexes:	Total index size:
20.48 kB	5	145.00 B	1	36.86 kB