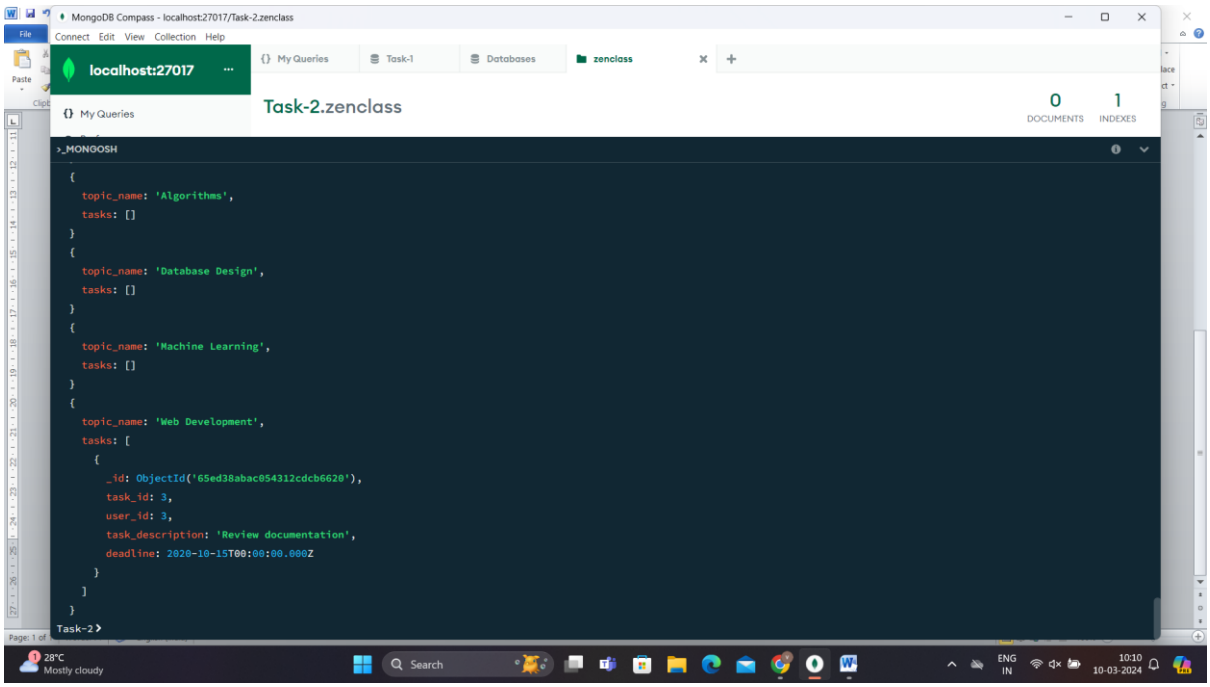
1.Find all the topics and tasks which are thought in the month of October.

Query :

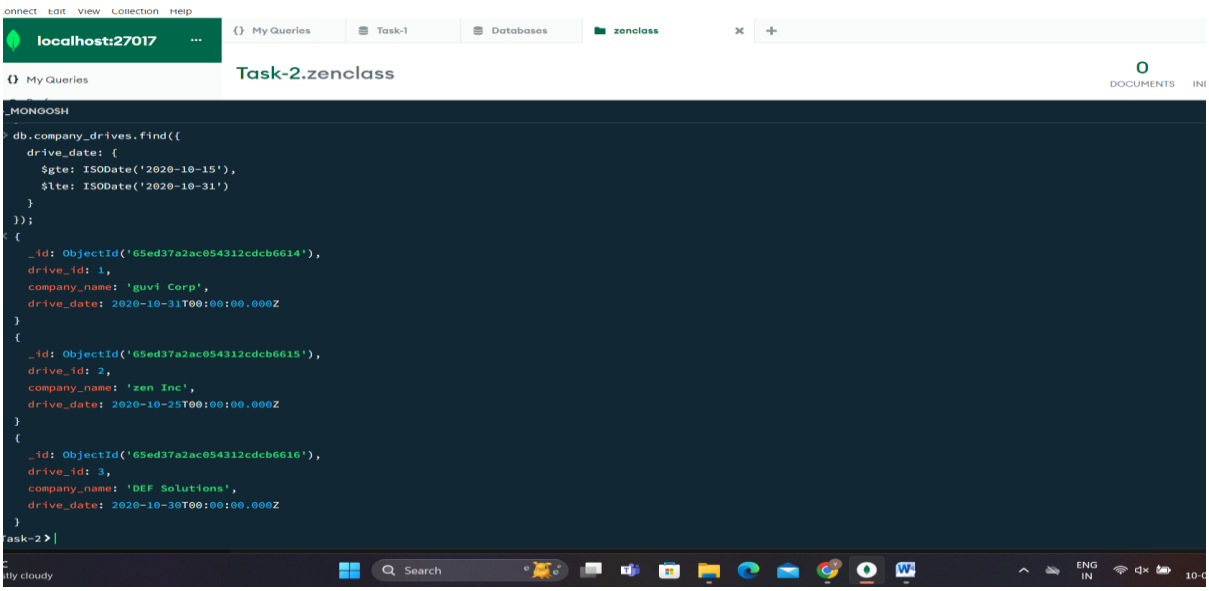
```
db.topics.aggregate([
 {
  $lookup: {
   from: "tasks",
   localField: "date_taught",
   foreignField: "deadline",
   as: "tasks"
  }
 },
 {
  $match: {
   date_taught: {
    $gte: ISODate('2020-10-01'),
    $lte: ISODate('2020-10-31')
   }
  }
 },
 {
  $project: {
   _id: 0,
   topic_name: 1,
   tasks: {
    $filter: {
     input: "$tasks",
     as: "task",
     cond: { $eq: [{ $month: "$$task.deadline" }, 10] }
    }
   }
  }
 }
]);
```



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

Query :

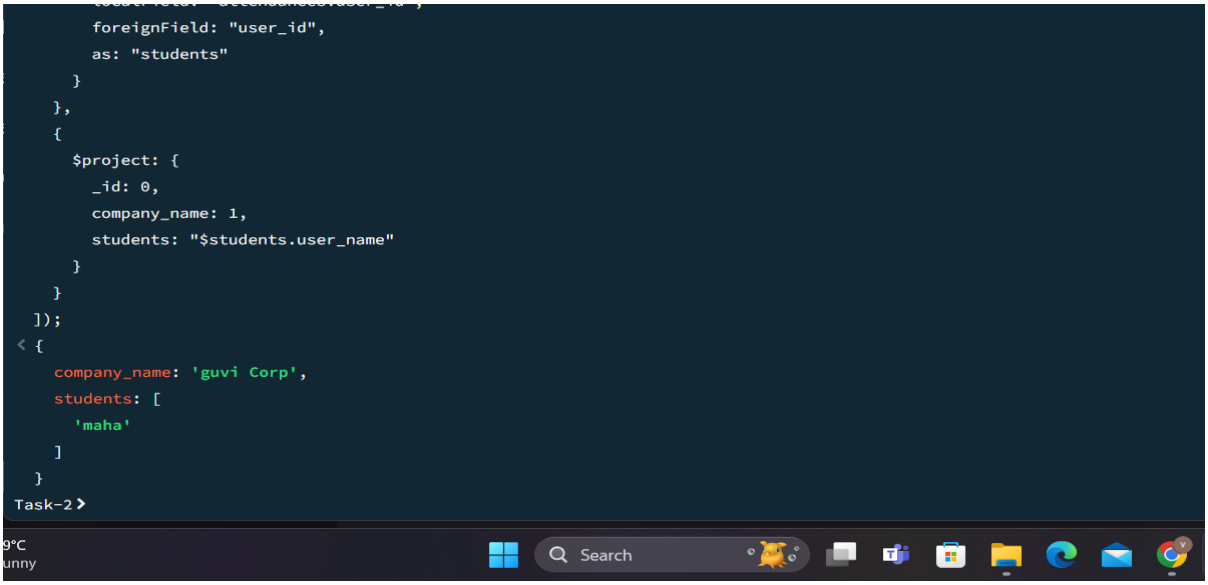
```
db.company_drives.find({
  drive_date: {
    $gte: ISODate('2020-10-15'),
    $lte: ISODate('2020-10-31')
  }
});
```



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

Query :

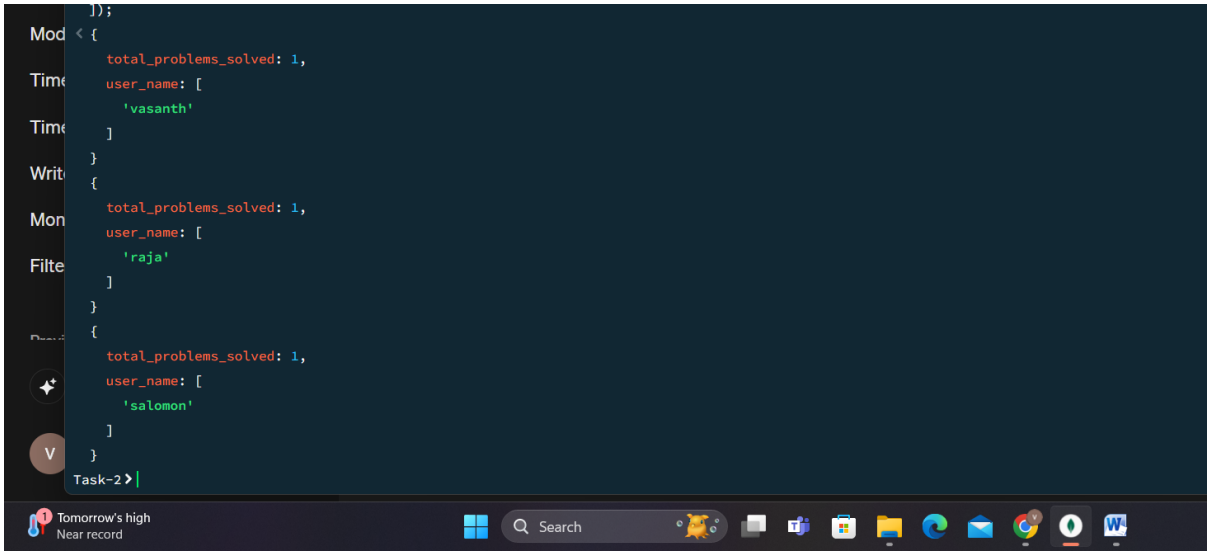
```
db.company_drives.aggregate([
 {
  $lookup: {
   from: "attendance",
   localField: "drive_date",
   foreignField: "attendance_date",
   as: "attendances"
  }
 },
 {
  $unwind: "$attendances"
 },
 {
  $lookup: {
   from: "users",
   localField: "attendances.user_id",
   foreignField: "user_id",
   as: "students"
  }
 },
 {
  $project: {
   _id: 0,
   company_name: 1,
   students: "$students.user_name"
  }
 }
]);
```



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

Query :

```
db.codekata.aggregate([
 {
  $match: {
   solved: true
  }
 },
 {
  $group: {
   _id: "$user_id",
   total_problems_solved: { $sum: 1 }    }
 },
 {
  $lookup: {
   from: "users",
   localField: "_id",
   foreignField: "user_id",
   as: "user"
  }
 },
 {
  $project: {
   _id: 0,
   user_name: "$user.user_name",
   total_problems_solved: 1
  }
 }
]);
```



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

Query :

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

Result:empty (no one)

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

Query :

```
db.attendance.aggregate([
  {
    $match: {
      attendance_status: "absent",
      task_submission_status: "not submitted",
      attendance_date: {
        $gte: ISODate("2020-10-15"),
        $lte: ISODate("2020-10-31")
      }
    }
  },
  {
    $group: {
      _id: "$user_id"
    }
  },
  {
    $group: {
      _id: null,
      count: { $sum: 1 }
    }
  }
]);
```

Results:

```
{
  _id: null,
  count: 1
}
```