```
--> Create and Use Database
use zen_class_programme

--> Create Collections
db.createCollection("users")
db.createCollection("codekata")
db.createCollection("attendance")
db.createCollection("topics")
db.createCollection("tasks")
db.createCollection("company_drives")
db.createCollection("mentors")

--> Insert Sample Data

-> Insert Users
db.users.insertMany([
  { _id: 1, name: "Alice", email: "alice@example.com" },
  { _id: 2, name: "Bob", email: "bob@example.com" },
  { _id: 3, name: "Charlie", email: "charlie@example.com" }
])

-> Insert Codekata Progress
db.codekata.insertMany([
  { user_id: 1, problems_solved: 50 },
  { user_id: 2, problems_solved: 40 },
  { user_id: 3, problems_solved: 70 }
])

->Insert Attendance Data
db.attendance.insertMany([
  { user_id: 1, date: ISODate("2020-10-15"), status: "present" },
  { user_id: 2, date: ISODate("2020-10-16"), status: "absent" },
  { user_id: 3, date: ISODate("2020-10-17"), status: "present" }
])

-> Insert Topics
db.topics.insertMany([
  { topic: "JavaScript Basics", date: ISODate("2020-10-10") },
  { topic: "Node.js Introduction", date: ISODate("2020-10-20") },
  { topic: "MongoDB Basics", date: ISODate("2020-10-25") }
])

-> Insert Company Drives
db.company_drives.insertMany([
  { company: "Google", date: ISODate("2020-10-16"), students_appeared: [1, 2] },
  { company: "Amazon", date: ISODate("2020-10-18"), students_appeared: [2, 3] },
  { company: "Microsoft", date: ISODate("2020-10-30"), students_appeared: [1, 3]
}
])

-> Mentors Inserting
db.mentors.insertMany([
  { name: "John", mentee_count: 20 },
  { name: "Jane", mentee_count: 15 },
  { name: "Doe", mentee_count: 10 }
])

--> 1. Find all topics and tasks taught in October.
db.topics.find({
  date: { $gte: ISODate("2020-10-01"), $lt: ISODate("2020-11-01") }
})
db.tasks.find({
  date: { $gte: ISODate("2020-10-01"), $lt: ISODate("2020-11-01") }
})
```

--> 2. Find all company drives between 15-Oct-2020 and 31-Oct-2020.

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

--> 3.Find all company drives and students who appeared for placement.

```
db.company_drives.aggregate([
  {
    $lookup: {
      from: "users",
      localField: "students_appeared",
      foreignField: "_id",
      as: "students"
    }
  }
])
```

--> 4.Find the number of problems solved by each user in Codekata.

```
db.codekata.find({}, { user_id: 1, problems_solved: 1 })
```

--> 5. Find all mentors with mentee count more than 15.

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

--> 6. Find users who are absent and have not submitted tasks between 15-Oct-2020 and 31-Oct-2020.

```
db.attendance.aggregate([
  {
    $match: {
      date: { $gte: ISODate("2020-10-15"), $lte: ISODate("2020-10-31") },
      status: "absent"
    }
  },
  {
    $lookup: {
      from: "tasks",
      let: { userId: "$user_id" },
      pipeline: [
        {
          $match: {
            $expr: {
              $and: [
                { $gte: ["$date", ISODate("2020-10-15")] },
                { $lte: ["$date", ISODate("2020-10-31")] },
                { $eq: ["$submitted", false] }
              ]
            }
          }
        }
      ],
      as: "unsubmitted_tasks"
    }
  },
  { $match: { "unsubmitted_tasks.0": { $exists: true } } }
])
```

```
---------------------------------------------------------------- END
---------------------------------------------------------------------
```