Design database for Zen class Programme

Requirements:

- Users are the students who are assigned tasks
- Attendance are there for users
- Users has been taken topics
- Users are assigned with tasks
- Users need to complete codekata
- Users will attend company_drives
- Mentors should take topics

Entities:

1. users
2. codekata
3. attendance
4. topics
5. tasks
6. company_drives
7. mentors

Attributes:

- Users - id, name, problems_solved, mentor
- Codekata - no_problems
- Attendance - date,usr_id
- Topics - name, date
- Tasks - name, date
- Company_drives - id, name, Date
- Mentors - id, name, date, mentees

Relationship:

- Users should be marked attendance
- Users are assigned with tasks
- Users should attend company drives
- Multiple users can be a mentee to a mentor
- Users should complete codekata

Create Table:

```
db.createCollection("users")
{ ok: 1 }
db.createCollection("mentors")
{ ok: 1 }
db.createCollection("codekata")
{ ok: 1 }
db.createCollection("topics")
{ ok: 1 }
db.createCollection("tasks")
{ ok: 1 }
db.createCollection("attendance")
{ ok: 1 }
db.createCollection("company_drives")
{ ok: 1 }
show collections;
attendance
codekata
company_drives
mentors
tasks
topics
users
```

Users:

```
db.students.insertMany([
    { user_id: "1", name: "John Doe", placement_status: "appeared" },
    { user_id: "1", name: "Jane Smith", placement_status: "not appeared" },
    { user_id: "2", name: "Alice Brown", placement_status: "appeared" }
]);
```

Mentor:

```
db.mentors.insertMany([
    { mentor_id: "1", name: "Alice", mentees_count: 20 },
    { mentor_id: "2", name: "Bob", mentees_count: 10 },
    { mentor_id: "3", name: "Charlie", mentees_count: 18 }
]);
```

Codekata:

```
db.codekata.insertMany([
    { user_id: "1", problem_id: "prob1" },
    { user_id: "1", problem_id: "prob2" },
    { user_id: "2", problem_id: "prob3" }
]);
```

Attendance:

```
db.attendance.insertMany([
    { user_id: "1", status: "absent", date: ISODate("2020-10-16T00:00:00Z") },
    { user_id: "2", status: "present", date: ISODate("2020-10-17T00:00:00Z") },
    { user_id: "1", status: "absent", date: ISODate("2020-10-20T00:00:00Z") }
]);
```

Company_drives:

```
db.company_drives.insertMany([
    { drive_id: "1", company_name: "Google", date: ISODate("2020-10-16T00:00:00Z") },
    { drive_id: "2", company_name: "Accenture", date: ISODate("2020-10-20T00:00:00Z") },
    { drive_id: "3", company_name: "Bosh", date: ISODate("2020-11-01T00:00:00Z") }
]);
```

Tasks:

```
> db.tasks.insertMany([
    { task_id: "1", name: "Java Assignment", date: ISODate("2024-10-05T00:00:00Z"), submission_status: "submitted" },
    { task_id: "2", name: "JavaScript Project", date: ISODate("2024-10-15T00:00:00Z"), submission_status: "not submitted" },
    { task_id: "3", name: "React Quiz", date: ISODate("2024-09-20T00:00:00Z"), submission_status: "submitted" }
]);
```

Topics:

```
> db.topics.insertMany([
    { topic_id: "1", name: "Java Basics", date: ISODate("2024-10-05T00:00:00Z") },
    { topic_id: "2", name: "Advanced JavaScript", date: ISODate("2024-10-10T00:00:00Z") },
    { topic_id: "3", name: "React Introduction", date: ISODate("2024-09-25T00:00:00Z") }
]);
```

Questions:

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

```
db.tasks.find({
  date: {
    $gte: ISODate("2024-10-01T00:00:00Z"),
    $lt: ISODate("2024-11-01T00:00:00Z")
  }
})
{
  _id: ObjectId('66e9ca42cf4cb962e5175b24'),
  task_id: '1',
  name: 'Java Assignment',
  date: 2024-10-05T00:00:00.000Z,
  submission_status: 'submitted'
}
{
  _id: ObjectId('66e9ca42cf4cb962e5175b25'),
  task_id: '2',
  name: 'JavaScript Project',
  date: 2024-10-15T00:00:00.000Z,
  submission_status: 'not submitted'
}
```

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

```
> db.company_drives.find({
    date: {
      $gte: ISODate("2020-10-15T00:00:00Z"),
      $lte: ISODate("2020-10-31T23:59:59Z")
    }
})
< {
    _id: ObjectId('66e9ca68cf4cb962e5175b27'),
    drive_id: '1',
    company_name: 'Google',
    date: 2020-10-16T00:00:00.000Z
}
{
    _id: ObjectId('66e9ca68cf4cb962e5175b28'),
    drive_id: '2',
    company_name: 'Accenture',
    date: 2020-10-20T00:00:00.000Z
}
```

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

```
> db.students.find({
    placement_status: "appeared"
  })
< {
    _id: ObjectId('66e9cb01cf4cb962e5175b33'),
    user_id: '1',
    name: 'John Doe',
    placement_status: 'appeared'
  }
  {
    _id: ObjectId('66e9cb01cf4cb962e5175b35'),
    user_id: '2',
    name: 'Alice Brown',
    placement_status: 'appeared'
  }
```

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

```
> db.mentors.find({
    mentees_count: { $gt: 15 }
})
< {
    _id: ObjectId('66e9caaccf4cb962e5175b2d'),
    mentor_id: '1',
    name: 'Alice',
    mentees_count: 20
}
{
    _id: ObjectId('66e9caaccf4cb962e5175b2f'),
    mentor_id: '3',
    name: 'Charlie',
    mentees_count: 18
}
```

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

```
> db.attendance.find({
    status: "absent",
    date: {
      $gte: ISODate("2020-10-15T00:00:00Z"),
      $lte: ISODate("2020-10-31T23:59:59Z")
    }
  })
< {
    _id: ObjectId('66e9cacecf4cb962e5175b30'),
    user_id: '1',
    status: 'absent',
    date: 2020-10-16T00:00:00.000Z
  }
  {
    _id: ObjectId('66e9cacecf4cb962e5175b32'),
    user_id: '1',
    status: 'absent',
    date: 2020-10-20T00:00:00.000Z
  }
```