MongoDB Case Study 1

Created a Database

```
> use zen_class
< switched to db zen_class
```

Created attendance collection

```
> db.createCollection("attendance");
< { ok: 1 }
```

Inserted the values into 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("2023-11-06"),
    "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("3023-10-07"),
  "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("2023-11-06"),
  "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"),
```

```
{
  "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
},
] );
```

Output

```
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('688621be0e8e719872b3ccb8'),
    '1': ObjectId('688621be0e8e719872b3ccb9'),
    '2': ObjectId('688621be0e8e719872b3ccba'),
    '3': ObjectId('688621be0e8e719872b3ccbb'),
    '4': ObjectId('688621be0e8e719872b3ccbc'),
    '5': ObjectId('688621be0e8e719872b3ccbd'),
    '6': ObjectId('688621be0e8e719872b3ccbe'),
    '7': ObjectId('688621be0e8e719872b3ccbf'),
    '8': ObjectId('688621be0e8e719872b3ccc0'),
    '9': ObjectId('688621be0e8e719872b3ccc1'),
    '10': ObjectId('688621be0e8e719872b3ccc2'),
    '11': ObjectId('688621be0e8e719872b3ccc3'),
    '12': ObjectId('688621be0e8e719872b3ccc4'),
    '13': ObjectId('688621be0e8e719872b3ccc5'),
    '14': ObjectId('688621be0e8e719872b3ccc6'),
    '15': ObjectId('688621be0e8e719872b3ccc7'),
    '16': ObjectId('688621be0e8e719872b3ccc8'),
    '17': ObjectId('688621be0e8e719872b3ccc9'),
    '18': ObjectId('688621be0e8e719872b3ccca'),
    '19': ObjectId('688621be0e8e719872b3cccb'),
    '20': ObjectId('688621be0e8e719872b3cccc'),
    '21': ObjectId('688621be0e8e719872b3cccd'),
    '22': ObjectId('688621be0e8e719872b3ccce'),
    '23': ObjectId('688621be0e8e719872b3cccf'),
    '24': ObjectId('688621be0e8e719872b3ccd0'),
    '25': ObjectId('688621be0e8e719872b3ccd1'),
    '26': ObjectId('688621be0e8e719872b3ccd2'),
    '27': ObjectId('688621be0e8e719872b3ccd3'),
    '28': ObjectId('688621be0e8e719872b3ccd4'),
    '29': ObjectId('688621be0e8e719872b3ccd5'),
    '30': ObjectId('688621be0e8e719872b3ccd6'),
    '31': ObjectId('688621be0e8e719872b3ccd7'),
    '32': ObjectId('688621be0e8e719872b3ccd8'),
    '33': ObjectId('688621be0e8e719872b3ccd9'),
    '34': ObjectId('688621be0e8e719872b3ccda'),
    '35': ObjectId('688621be0e8e719872b3ccdb'),
    '36': ObjectId('688621be0e8e719872b3ccdc'),
    '37': ObjectId('688621be0e8e719872b3ccdd'),
    '38': ObjectId('688621be0e8e719872b3ccde'),
    '39': ObjectId('688621be0e8e719872b3ccdf'),
    '40': ObjectId('688621be0e8e719872b3cce0'),
    '41': ObjectId('688621be0e8e719872b3cce1'),
    '42': ObjectId('688621be0e8e719872b3cce2'),
    '43': ObjectId('688621be0e8e719872b3cce3'),
    '44': ObjectId('688621be0e8e719872b3cce4'),
    '45': ObjectId('688621be0e8e719872b3cce5'),
    '46': ObjectId('688621be0e8e719872b3cce6'),
    '47': ObjectId('688621be0e8e719872b3cce7'),
    '48': ObjectId('688621be0e8e719872b3cce8'),
    '49': ObjectId('688621be0e8e719872b3cce9')
```

Created collection codekata and inserted values

```
> db.createCollection("codekata");
< { ok: 1 }
> 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('6886230e0e8e719872b3ccea'),
      '1': ObjectId('6886230e0e8e719872b3cceb'),
      '2': ObjectId('6886230e0e8e719872b3ccec'),
      '3': ObjectId('6886230e0e8e719872b3cced'),
      '4': ObjectId('6886230e0e8e719872b3ccee')
    }
  }
```

Created collection named companydrives and inserted the values

```
> db.createCollection("companydrives");
< { ok: 1 }
> 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('688623470e8e719872b3ccef'),
        '1': ObjectId('688623470e8e719872b3ccf0'),
        '2': ObjectId('688623470e8e719872b3ccf1'),
        '3': ObjectId('688623470e8e719872b3ccf2'),
        '4': ObjectId('688623470e8e719872b3ccf3')
    }
```

Created collection named mentors and inserted the values

```
> db.createCollection("mentors");
< { ok: 1 }
> 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('688623890e8e719872b3ccf4'),
      '1': ObjectId('688623890e8e719872b3ccf5'),
      '2': ObjectId('688623890e8e719872b3ccf6'),
      '3': ObjectId('688623890e8e719872b3ccf7'),
      '4': ObjectId('688623890e8e719872b3ccf8'),
      '5': ObjectId('688623890e8e719872b3ccf9'),
      '6': ObjectId('688623890e8e719872b3ccfa'),
      '7': ObjectId('688623890e8e719872b3ccfb'),
      '8': ObjectId('688623890e8e719872b3ccfc'),
      '9': ObjectId('688623890e8e719872b3ccfd')
    }
  }
```

Created collection named task_completion and inserted the values

```
> db.createCollection("task_completion");
< { ok: 1 }
> db.task_completion.insertMany([
    {
      "userid":1,
      "task_completion":true,
      "pending_tasks_id":[]
    },
    {
      "userid":2,
      "task_completion":true,
      "pending_tasks_id":[]
    },
    {
      "userid":3,
      "task_completion":false,
      "pending_task_id":[1,2]
    },
    {
      "userid":4,
      "task_completion":true,
      "pending_tasks_id":[]
    },
    {
      "userid":5,
      "task_completion":false,
      "pending_tasks_id":[2]
    }
  ]);
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('688623c50e8e719872b3ccfe'),
      '1': ObjectId('688623c50e8e719872b3ccff'),
      '2': ObjectId('688623c50e8e719872b3cd00'),
      '3': ObjectId('688623c50e8e719872b3cd01'),
      '4': ObjectId('688623c50e8e719872b3cd02')
    }
  }
```

Created collection named tasks and inserted the values

```
> db.createCollection("tasks");
< { ok: 1 }
> 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 (created by using of html,css & js) 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('688624120e8e719872b3cd03'),
      '1': ObjectId('688624120e8e719872b3cd04'),
      '2': ObjectId('688624120e8e719872b3cd05'),
      '3': ObjectId('688624120e8e719872b3cd06'),
      '4': ObjectId('688624120e8e719872b3cd07')
    }
  }
zen_class>
```

Created collection named topics and inserted the values

```
> db.createCollection("topics");
< { ok: 1 }
> 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('688624620e8e719872b3cd08'),
      '1': ObjectId('688624620e8e719872b3cd09'),
      '2': ObjectId('688624620e8e719872b3cd0a'),
      '3': ObjectId('688624620e8e719872b3cd0b'),
      '4': ObjectId('688624620e8e719872b3cd0c')
    }
  }
zen_class >
```

Created collection named users and inserted the values

```
> db.createCollection("users");
< { ok: 1 }
> db.users.insertMany([
    {
      userid: 1,
      name: 'Boobathi',
      email: 'boobathi@gmail.com',
      mentor: 'Sathish'
    },
    {
      userid: 2,
      name: 'Mani',
      email: 'mani@gmail.com',
      mentor: 'Nagaraj'
    },
    {
      userid: 3,
      name: 'Karthi',
      email: 'karthi@gmail.com',
      mentor: 'Sathish'
    },
    {
      userid: 4,
      name: 'Dharshini',
      email: 'dharshini@gmail.com',
      mentor: 'Rupan'
    },
    {
      userid: 5,
      name: 'Balu',
      email: 'balu@gmail.com',
      mentor: 'Sathish'
    }
]);
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('688624a70e8e719872b3cd0d'),
      '1': ObjectId('688624a70e8e719872b3cd0e'),
      '2': ObjectId('688624a70e8e719872b3cd0f'),
      '3': ObjectId('688624a70e8e719872b3cd10'),
      '4': ObjectId('688624a70e8e719872b3cd11')
    }
```

Case Study Questions

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

```
db.topics.aggregate([
  {
    $match: {
      start_date: { $gte: ISODate("2023-10-01T00:00:00.000Z") },
      end_date: { $lte: ISODate("2023-10-31T23:59:59.999Z") }
    }
  },
  {
    $lookup: {
      from: "tasks",
      localField: "task_id",
      foreignField: "task_id",
      as: "task_details"
    }
  }
]);
```

Output

```
< {
  _id: ObjectId('688624620e8e719872b3cd08'),
  topic_id: 1,
  task_id: 1,
  topic: 'HTML',
  description: 'Master Html',
  start_date: 2023-10-07T00:00:00.000Z,
  end_date: 2023-10-08T00:00:00.000Z,
  task_details: [
    {
      _id: ObjectId('688624120e8e719872b3cd03'),
      topic_id: 1,
      task_id: 1,
      topic: 'HTML',
      description: 'Create a content using HTML',
      deadline_date: 2023-10-09T00:00:00.000Z
    }
  ]
}
{
  _id: ObjectId('688624620e8e719872b3cd09'),
  topic_id: 2,
  task_id: 2,
  topic: 'CSS',
  description: 'Master Css',
  start_date: 2023-10-14T00:00:00.000Z,
  end_date: 2023-10-15T00:00:00.000Z,
  task_details: [
    {
      _id: ObjectId('688624120e8e719872b3cd04'),
      topic_id: 2,
      task_id: 2,
      topic: 'CSS',
      description: 'Style - created HTML content',
      deadline_date: 2023-10-16T00:00:00.000Z
    }
  ]
}
```

```
{
  _id: ObjectId('688624620e8e719872b3cd0a'),
  topic_id: 3,
  task_id: 3,
  topic: 'Javascript',
  description: 'Master Javascript',
  start_date: 2023-10-21T00:00:00.000Z,
  end_date: 2023-10-22T00:00:00.000Z,
  task_details: [
    {
      _id: ObjectId('688624120e8e719872b3cd05'),
      topic_id: 3,
      task_id: 3,
      topic: 'Javascript',
      description: 'Add logics to the created content',
      deadline_date: 2023-10-23T00:00:00.000Z
    }
  ]
}
{
  _id: ObjectId('688624620e8e719872b3cd0b'),
  topic_id: 4,
  task_id: 4,
  topic: 'React',
  description: 'Master React',
  start_date: 2023-10-28T00:00:00.000Z,
  end_date: 2023-10-29T00:00:00.000Z,
  task_details: [
    {
      _id: ObjectId('688624120e8e719872b3cd06'),
      topic_id: 4,
      task_id: 4,
      topic: 'React',
      description: 'Create same website (created by using of html,css & js) using react',
      deadline_date: 2023-10-30T00:00:00.000Z
    }
  ]
}
```

2.Find all the company drives which appeared between 15 oct-2023 and 31-oct-2023

```
> db.companydrives.find({
    drive_date:{
      $gte:ISODate("2023-10-15T00:00:00.000Z"),
      $lte:ISODate("2023-10-31T23:59:59.999Z")
    }
});
```

Output

```
< {
    _id: ObjectId('688623470e8e719872b3ccef'),
    userid: 1,
    drive_date: 2023-10-16T00:00:00.000Z,
    company: 'TCS'
}
{
    _id: ObjectId('688623470e8e719872b3ccf0'),
    userid: 1,
    drive_date: 2023-10-19T00:00:00.000Z,
    company: 'HCL'
}
{
    _id: ObjectId('688623470e8e719872b3ccf1'),
    userid: 2,
    drive_date: 2023-10-22T00:00:00.000Z,
    company: 'Amazon'
}
{
    _id: ObjectId('688623470e8e719872b3ccf2'),
    userid: 3,
    drive_date: 2023-10-28T00:00:00.000Z,
    company: 'Wipro'
}
```

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

```
> db.codekata.aggregate([
    {
      $group: {
        _id: null,
        total_codekata_solved: { $sum: "$codekata_solved" }
      }
    }
  ]);
```

Output

```
< {
    _id: null,
    total_codekata_solved: 1120
  }
```

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

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

Output

```
< {
  _id: ObjectId('688623890e8e719872b3ccf4'),
  mentor_id: 1,
  mentor_name: 'Sathish',
  mentees: 30
}
{
  _id: ObjectId('688623890e8e719872b3ccf6'),
  mentor_id: 3,
  mentor_name: 'Thillan',
  mentees: 50
}
{
  _id: ObjectId('688623890e8e719872b3ccf7'),
  mentor_id: 4,
  mentor_name: 'Kulunthan',
  mentees: 70
}
{
  _id: ObjectId('688623890e8e719872b3ccf8'),
  mentor_id: 5,
  mentor_name: 'Mani',
  mentees: 16
}
{
  _id: ObjectId('688623890e8e719872b3ccfb'),
  mentor_id: 8,
  mentor_name: 'Parthiban',
  mentees: 32
}
{
  _id: ObjectId('688623890e8e719872b3ccfd'),
  mentor_id: 10,
  mentor_name: 'Vijay',
  mentees: 35
}
```