

Design Database for Zen Class Programme

Create database

```
use zen_class
```

Create collection and insert data – “USERS” :

```
db.users.insertMany([
  { userid: 1, name: "Santhosh", email: "santhosh@gmail.com" },
  { userid: 2, name: "Surya", email: "surya@gmail.com" },
  { userid: 3, name: "Shiyam", email: "shiyam@gmail.com" },
  { userid: 4, name: "Muhib", email: "muhib@gmail.com" },
  { userid: 5, name: "Surya Kumar", email: "suryakumar@gmail.com" }
])
```

Create collection and insert data – “CODEKATA” :

```
db.createCollection("codekata");
db.codekata.insertMany([
  { userid: 1, problems: 50 },
  { userid: 2, problems: 60 },
  { userid: 3, problems: 90 },
  { userid: 4, problems: 51 },
  { userid: 5, problems: 61 }
])
```

Create collection and insert data – “ATTENDANCE” :

```
db.createCollection("attendance");
db.attendance.insertMany([
  { userid: 1, topicid: 2, attended: true },
  { userid: 2, topicid: 1, attended: true },
  { userid: 3, topicid: 5, attended: true },
  { userid: 4, topicid: 3, attended: true },
  { userid: 5, topicid: 4, attended: false }
])
```

Create collection and insert data – “TOPICS” :

```
db.createCollection("topics");
db.topics.insertMany([
  { topicid: 1, topic: "HTML", topic_date: new Date("18-Oct-2020") },
  { topicid: 2, topic: "CSS", topic_date: new Date("28-Oct-2020") },
  { topicid: 3, topic: "JavaScript", topic_date: new Date("05-Nov-2020") },
  { topicid: 4, topic: "ReactJS", topic_date: new Date("15-Nov-2020") },
  { topicid: 5, topic: "NodeJS", topic_date: new Date("25-Nov-2020") }
])
```

Create collection and insert data – “TASKS” :

```
db.createCollection("tasks");
db.tasks.insertMany([
  { taskid: 1, topicid: 1, userid: 1, task: "HTML Task", due_date: new Date("18-Oct-2020"), submitted: true },
  { taskid: 2, topicid: 2, userid: 2, task: "CSS Task", due_date: new Date("28-Oct-2020"), submitted: false },
  { taskid: 3, topicid: 3, userid: 3, task: "Javascript Task", due_date: new Date("05-Nov-2020"), submitted: true },
])
```

```

    { taskid: 4, topicid: 4, userid: 4, task: "React Task", due_date: new Date("15-Nov-2020"), submitted:
true },
    { taskid: 5, topicid: 5, userid: 5, task: "NodeJS Task", due_date: new Date("25-Nov-2020"), submitted:
false }
  ]
}

```

Create collection and insert data – “COMPANY DRIVES” :

```

db.createCollection("companydrives");
db.companydrives.insertMany([
  { userid: 1, drive_date: new Date("20-Oct-2020"), company: "Apple" },
  { userid: 1, drive_date: new Date("22-Oct-2020"), company: "Amazon" },
  { userid: 2, drive_date: new Date("25-Oct-2020"), company: "TCS" },
  { userid: 3, drive_date: new Date("30-Oct-2020"), company: "Flipkart" },
  { userid: 4, drive_date: new Date("05-Nov-2020"), company: "Zomato" }
])

```

Create collection and insert data – “MENTORS” :

```

db.createCollection("mentors");
db.mentors.insertMany([
  { mentorid: 1, mentorname: "Rupan", mentor_email: "rupan@gmail.com", mentee_count: 20 },
  { mentorid: 2, mentorname: "Nagaraj", mentor_email: "nagaraj@gmail.com", mentee_count: 18 },
  { mentorid: 3, mentorname: "Krishna", mentor_email: "krishna@gmail.com", mentee_count: 30 },
  { mentorid: 4, mentorname: "Sabhari", mentor_email: "sabhari@gmail.com", mentee_count: 15 },
  { mentorid: 5, mentorname: "Manoj", mentor_email: "manoj@gmail.com", mentee_count: 20 }
])

```

CREATED DATABASE

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

Solution :

```

db.topics.aggregate([
  {
    $lookup: {
      from: "tasks",
      localField: "topicid",
      foreignField: "topicid",
      as: "taskinfo"
    }
  },
  {
    $match: {
      $and: [
        { topic_date: { $gte: new Date("2020-10-01"), $lt: new Date("2020-11-01") } },
        {
          $or: [
            { "taskinfo.due_date": { $gte: new Date("2020-10-01"), $lt: new Date("2020-11-01") } },
            { "taskinfo.due_date": { $exists: false } }
          ]
        }
      ]
    }
  },
  {
    $project: {
      _id: 0,
      topicid: 1,
    }
  }
])

```

```

        topic: 1,
        topic_date: 1,
        tasks: "$taskinfo.task",
        due_dates: "$taskinfo.due_date"
    }
}
])

```

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

Solution :

```

db.companydrives.find({
  $or: [
    { drive_date: { $gte: new Date("15-oct-2020") } },
    { drive_date: { $lte: new Date("31-oct-2020") } }
  ]
})

```

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

Solution :

```

db.companydrives.aggregate([
  {
    $lookup: {
      from: "users",
      localField: "userid",
      foreignField: "userid",
      as: "userinfo"
    }
  },
  {
    $project: {
      _id: 0,
      company: 1,
      drive_date: 1,
      students: "$userinfo"
    }
  }
])

```

- Find the number of problems solved by the user in codekata :

Solution :

```

db.codekata.aggregate([
  {
    $lookup: {
      from: "users",
      localField: "userid",
      foreignField: "userid",
      as: "userinfo"
    }
  },
  {
    $group: {
      _id: {
        userid: "$userid",
        username: "$userinfo.name"
      },

```

```

        total_problems_solved: { $sum: "$problems" }
    },
    {
        $project: {
            _id: 0,
            userid: "$_id.userid",
            username: "$_id.username",
            total_problems_solved: 1
        }
    }
}
])

```

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

Solution :

```

db.users.aggregate([
    {
        $match: { mentorid: { $exists: true } }
    },
    {
        $group: {
            _id: "$mentorid",
            mentorname: { $first: "$mentorname" },
            mentee_count: { $sum: 1 }
        }
    },
    {
        $match: { mentee_count: { $gt: 15 } }
    },
    {
        $project: {
            _id: 0,
            mentorid: "$_id",
            mentorname: 1,
            mentee_count: 1
        }
    }
}
])

```

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

Solution :

```

db.attendance.aggregate([
    {
        $lookup: {
            from: "topics",
            localField: "topicid",
            foreignField: "topicid",
            as: "topics"
        }
    },
    {
        $lookup: {
            from: "tasks",
            localField: "topicid",
            foreignField: "topicid",

```

```
      as: "tasks"
    }
  },
  {
    $match: {
      attended: false,
      "tasks.submitted": false,
      $and: [
        { "topics.topic_date": { $gte: new Date("15-oct-2020") } },
        { "topics.topic_date": { $lte: new Date("31-oct-2020") } },
        { "tasks.due_date": { $gte: new Date("15-oct-2020") } },
        { "tasks.due_date": { $lte: new Date("31-oct-2020") } }
      ]
    }
  },
  {$count: "No_of_students_absent"}})
```