

## **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, mentername: "Rupan", mentor_email:
    "rupan@gmail.com", mentee_count: 20 },

    { mentorid: 2, mentername: "Nagaraj", mentor_email:
    "nagaraj@gmail.com", mentee_count: 18 },

    { mentorid: 3, mentername: "Krishna", mentor_email:
    "krishna@gmail.com", mentee_count: 30 },

    { mentorid: 4, mentername: "Sabhari", mentor_email:
    "sabhari@gmail.com", mentee_count: 15 },

    { mentorid: 5, mentername: "Manoj", mentor_email:
    "manoj@gmail.com", mentee_count: 20 }

])
```

## CREATED DATABASE

**1. 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"
```

}

}

)

**2. 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") } }  
  ]  
})
```



**3. 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"  
    }  
  }  
])
```

**4. 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
      }
    }
  ]
})

```

**5. 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
  }
}

```

)

**6. 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"}])
```