**MongoDB Task**

**Design database for Zen class programme**

**JSON**

**Users**

[{

  "\_id": {

    "$oid": "65b124a39feebf6e7e2968a8"

  },

  "userId": 1,

  "name": "Ramya",

  "batch": "BWE51",

  "joinedAt": {

    "$date": "2023-07-23T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b124a39feebf6e7e2968a9"

  },

  "userId": 2,

  "name": "Devi",

  "batch": "BWE50",

  "joinedAt": {

    "$date": "2023-10-21T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b124a39feebf6e7e2968aa"

  },

  "userId": 3,

  "name": "Ashok",

  "batch": "BWE49",

  "joinedAt": {

    "$date": "2023-02-13T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b124a39feebf6e7e2968ab"

  },

  "userId": 4,

  "name": "Agathyan",

  "batch": "BWE53",

  "joinedAt": {

    "$date": "2023-10-31T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b124a39feebf6e7e2968ac"

  },

  "userId": 5,

  "name": "Akshaya",

  "batch": "BWE35",

  "joinedAt": {

    "$date": "2023-02-12T00:00:00.000Z"

  }

}]

**Codekata**

[{

  "\_id": {

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  },

  "id": 1,

  "userId": 1,

  "createdAt": {

    "$date": "2023-05-15T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-07-15T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20bfc9feebf6e7e2968b8"

  },

  "id": 1,

  "userId": 2,

  "createdAt": {

    "$date": "2023-10-20T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-10-25T00:00:00.000Z"

  }

},

{

  "\_id": {

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  },

  "id": 1,

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  "createdAt": {

    "$date": "2023-10-15T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-11-11T00:00:00.000Z"

  }

},

{

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    "$date": "2023-05-02T00:00:00.000Z"

  }

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{

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    "$oid": "65b20bfc9feebf6e7e2968bb"

  },

  "id": 1,

  "userId": 5,

  "createdAt": {

    "$date": "2023-01-12T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-02-11T00:00:00.000Z"

  }

},

{

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    "$oid": "65b20d279feebf6e7e2968bc"

  },

  "id": 2,

  "userId": 1,

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    "$date": "2023-10-15T00:00:00.000Z"

  }

},

{

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    "$oid": "65b20d279feebf6e7e2968bd"

  },

  "id": 2,

  "userId": 2,

  "createdAt": {

    "$date": "2023-12-22T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-12-25T00:00:00.000Z"

  }

},

{

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    "$oid": "65b20d279feebf6e7e2968be"

  },

  "id": 2,

  "userId": 3,

  "createdAt": {

    "$date": "2023-10-15T00:00:00.000Z"

  }

},

{

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    "$oid": "65b20d279feebf6e7e2968bf"

  },

  "id": 2,

  "userId": 4,

  "createdAt": {

    "$date": "2023-10-02T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-10-16T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20d279feebf6e7e2968c0"

  },

  "id": 2,

  "userId": 5,

  "createdAt": {

    "$date": "2023-01-12T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20f429feebf6e7e2968c1"

  },

  "id": 3,

  "userId": 1,

  "createdAt": {

    "$date": "2023-10-15T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-11-15T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20f429feebf6e7e2968c2"

  },

  "id": 3,

  "userId": 2,

  "createdAt": {

    "$date": "2023-12-22T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-12-25T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20f429feebf6e7e2968c3"

  },

  "id": 3,

  "userId": 3,

  "createdAt": {

    "$date": "2023-10-15T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b20f429feebf6e7e2968c4"

  },

  "id": 3,

  "userId": 4,

  "status": true,

  "createdAt": {

    "$date": "2023-10-02T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-10-16T00:00:00.000Z"

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{

  "\_id": {

    "$oid": "65b20f429feebf6e7e2968c5"

  },

  "id": 3,

  "userId": 5,

  "status": false,

  "createdAt": {

    "$date": "2023-01-12T00:00:00.000Z"

  }

}]

**Attendance**

[{

  "\_id": {

    "$oid": "65b214e4d8c26012af6f6aa2"

  },

  "id": 1,

  "userId": 1,

  "topicId": 1,

  "status": true

},

{

  "\_id": {

    "$oid": "65b215a1d8c26012af6f6aa4"

  },

  "id": 2,

  "userId": 1,

  "topicId": 2,

  "status": false

},

{

  "\_id": {

    "$oid": "65b215e1d8c26012af6f6aa5"

  },

  "id": 3,

  "userId": 1,

  "topicId": 3,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21625d8c26012af6f6aa6"

  },

  "id": 4,

  "userId": 1,

  "topicId": 4,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21638d8c26012af6f6aa7"

  },

  "id": 5,

  "userId": 1,

  "topicId": 5,

  "status": false

},

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  "\_id": {

    "$oid": "65b2165cd8c26012af6f6aa8"

  },

  "id": 6,

  "userId": 2,

  "topicId": 1,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21675d8c26012af6f6aa9"

  },

  "id": 7,

  "userId": 2,

  "topicId": 2,

  "status": true

},

{

  "\_id": {

    "$oid": "65b216bed8c26012af6f6aaa"

  },

  "id": 8,

  "userId": 2,

  "topicId": 3,

  "status": false

},

{

  "\_id": {

    "$oid": "65b216d1d8c26012af6f6aab"

  },

  "id": 9,

  "userId": 2,

  "topicId": 4,

  "status": true

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  "\_id": {

    "$oid": "65b216edd8c26012af6f6aac"

  },

  "id": 10,

  "userId": 2,

  "topicId": 5,

  "status": false

},

{

  "\_id": {

    "$oid": "65b21705d8c26012af6f6aad"

  },

  "id": 11,

  "userId": 3,

  "topicId": 1,

  "status": true

},

{

  "\_id": {

    "$oid": "65b2171ad8c26012af6f6aae"

  },

  "id": 12,

  "userId": 3,

  "topicId": 2,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21748d8c26012af6f6aaf"

  },

  "id": 13,

  "userId": 3,

  "topicId": 3,

  "status": false

},

{

  "\_id": {

    "$oid": "65b2176cd8c26012af6f6ab0"

  },

  "id": 14,

  "userId": 3,

  "topicId": 4,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21789d8c26012af6f6ab1"

  },

  "id": 15,

  "userId": 3,

  "topicId": 5,

  "status": false

},

{

  "\_id": {

    "$oid": "65b217b7d8c26012af6f6ab2"

  },

  "id": 16,

  "userId": 4,

  "topicId": 1,

  "status": false

},

{

  "\_id": {

    "$oid": "65b2180fd8c26012af6f6ab3"

  },

  "id": 17,

  "userId": 4,

  "topicId": 2,

  "status": true

},

{

  "\_id": {

    "$oid": "65b2182ed8c26012af6f6ab4"

  },

  "id": 18,

  "userId": 4,

  "topicId": 3,

  "status": false

},

{

  "\_id": {

    "$oid": "65b2184ed8c26012af6f6ab5"

  },

  "id": 19,

  "userId": 4,

  "topicId": 4,

  "status": true

},

{

  "\_id": {

    "$oid": "65b2186fd8c26012af6f6ab6"

  },

  "id": 20,

  "userId": 4,

  "topicId": 5,

  "status": false

},

{

  "\_id": {

    "$oid": "65b218a8d8c26012af6f6ab9"

  },

  "id": 21,

  "userId": 5,

  "topicId": 5,

  "status": false

},

{

  "\_id": {

    "$oid": "65b218eed8c26012af6f6aba"

  },

  "id": 22,

  "userId": 5,

  "topicId": 1,

  "status": true

},

{

  "\_id": {

    "$oid": "65b218fdd8c26012af6f6abb"

  },

  "id": 23,

  "userId": 5,

  "topicId": 2,

  "status": true

},

{

  "\_id": {

    "$oid": "65b21925d8c26012af6f6abc"

  },

  "id": 24,

  "userId": 5,

  "topicId": 3,

  "status": false

},

{

  "\_id": {

    "$oid": "65b2194fd8c26012af6f6abd"

  },

  "id": 25,

  "userId": 5,

  "topicId": 4,

  "status": true

}]

**Topics**

[{

  "\_id": {

    "$oid": "65b21a6bd8c26012af6f6ac0"

  },

  "topicId": 1,

  "topicName": "MySQL",

  "date": {

    "$date": "2023-02-05T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b21aeed8c26012af6f6ac3"

  },

  "topicId": 2,

  "topicName": "MongoDB",

  "date": {

    "$date": "2023-10-25T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b21b17d8c26012af6f6ac4"

  },

  "topicId": 3,

  "topicName": "NodeJS",

  "date": {

    "$date": "2023-10-25T00:00:00.000Z"

  }

}]

**Tasks**

[{

  "\_id": {

    "$oid": "65b21bb7d8c26012af6f6ac7"

  },

  "id": 1,

  "userId": 1,

  "taskName": "contextAPI",

  "createdAt": {

    "$date": "2023-11-01T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-11-03T00:00:00.000Z"

  },

  "topicId": 1

},

{

  "\_id": {

    "$oid": "65b21bfbd8c26012af6f6ac8"

  },

  "id": 2,

  "userId": 2,

  "taskName": "MySql",

  "createdAt": {

    "$date": "2023-10-01T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-12-03T00:00:00.000Z"

  },

  "topicId": 3

},

{

  "\_id": {

    "$oid": "65b23b8c62c487b63e6ab8ef"

  },

  "id": 3,

  "userId": 3,

  "taskName": "MongoDB",

  "createdAt": {

    "$date": "2023-09-01T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-10-03T00:00:00.000Z"

  },

  "topicId": 1

},

{

  "\_id": {

    "$oid": "65b23ba962c487b63e6ab8f0"

  },

  "id": 4,

  "userId": 4,

  "taskName": "Axios",

  "createdAt": {

    "$date": "2023-10-01T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-10-03T00:00:00.000Z"

  },

  "topicId": 2

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{

  "\_id": {

    "$oid": "65b23c4962c487b63e6ab8f1"

  },

  "id": 5,

  "userId": 5,

  "taskName": "Async and Await",

  "createdAt": {

    "$date": "2023-09-01T00:00:00.000Z"

  },

  "submittedAt": {

    "$date": "2023-11-03T00:00:00.000Z"

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  "topicId": 1

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**Company\_drives**  "\_id": {

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  "\_id": {

    "$oid": "65b23cc562c487b63e6ab8f4"

  },

  "id": 1,

  "userId": 1,

  "companyName": "HCL",

  "hiredAt": {

    "$date": "2023-09-11T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b23cd962c487b63e6ab8f5"

  },

  "id": 2,

  "userId": 2,

  "companyName": "HP",

  "hiredAt": {

    "$date": "2023-10-11T00:00:00.000Z"

  }

},

{

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  },

  "id": 3,

  "userId": 4,

  "companyName": "Payoda",

  "hiredAt": {

    "$date": "2023-05-11T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b23d0f62c487b63e6ab8f7"

  },

  "id": 4,

  "userId": 4,

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  "hiredAt": {

    "$date": "2023-10-11T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b23d3662c487b63e6ab8f8"

  },

  "id": 5,

  "userId": 5,

  "companyName": "IVTL",

  "hiredAt": {

    "$date": "2023-10-20T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b35ca808bfda49dc0af7b1"

  },

  "id": 5,

  "userId": 1,

  "companyName": "IVTL",

  "hiredAt": {

    "$date": "2023-10-20T00:00:00.000Z"

  }

},

{

  "\_id": {

    "$oid": "65b35cbd08bfda49dc0af7b2"

  },

  "id": 4,

  "userId": 2,

  "companyName": "Amazon",

  "hiredAt": {

    "$date": "2023-10-11T00:00:00.000Z"

  }

}]

**Mentors**

[{

  "\_id": {

    "$oid": "65b2668a62c487b63e6ab915"

  },

  "mentorName": "Kannan",

  "students": [

    {

      "name": "Mani",

      "Batch": "BWE51"

    },

    {

      "name": "Moni",

      "Batch": "BWE44"

    },

    {

      "name": "Vignesh",

      "Batch": "BWE31"

    },

    {

      "name": "Vikram",

      "Batch": "BWE21"

    },

    {

      "name": "Srivanth",

      "Batch": "BWE43"

    },

    {

      "name": "Reymon",

      "Batch": "BWE41"

    },

    {

      "name": "Vishnu",

      "Batch": "BWE53"

    }

  ]

},

{

  "\_id": {

    "$oid": "65b266bd62c487b63e6ab916"

  },

  "mentorName": "Raman",

  "students": [

    {

      "name": "vasu",

      "Batch": "BWE51"

    },

    {

      "name": "Manish",

      "Batch": "BWE44"

    },

    {

      "name": "Faiaz",

      "Batch": "BWE31"

    },

    {

      "name": "Farook",

      "Batch": "BWE21"

    },

    {

      "name": "Srivanth",

      "Batch": "BWE43"

    },

    {

      "name": "Ravanth",

      "Batch": "BWE41"

    },

    {

      "name": "Vishnu",

      "Batch": "BWE53"

    }

  ]

},

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  "mentorName": "Raman",

  "students": [

    {

      "name": "vasu",

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      "Batch": "BWE44"

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    {

      "name": "Faiaz",

      "Batch": "BWE31"

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    {

      "name": "Farook",

      "Batch": "BWE21"

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    {

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      "Batch": "BWE43"

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    {

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      "Batch": "BWE41"

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    },

    {

      "name": "Vishnu",

      "Batch": "BWE53"

    }

  ]

},

{

  "\_id": {

    "$oid": "65b2674262c487b63e6ab918"

  },

  "mentorName": "Raman",

  "students": [

    {

      "name": "vasu",

      "Batch": "BWE51"

    },

    {

      "name": "Manish",

      "Batch": "BWE44"

    },

    {

      "name": "Faiaz",

      "Batch": "BWE31"

    },

    {

      "name": "Farook",

      "Batch": "BWE21"

    },

    {

      "name": "Srivanth",

      "Batch": "BWE43"

    },

    {

      "name": "Ravanth",

      "Batch": "BWE41"

    },

    {

      "name": "Vishnu",

      "Batch": "BWE53"

    },

    {

      "name": "Nithika",

      "Batch": "BWE53"

    },

    {

      "name": "Hasini",

      "Batch": "BWE53"

    },

    {

      "name": "Mallya",

      "Batch": "BWE53"

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    {

      "name": "Megala",

      "Batch": "BWE53"

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    {

      "name": "Kailash",

      "Batch": "BWE53"

    },

    {

      "name": "vaishnavi",

      "Batch": "BWE53"

    },

    {

      "name": "vishali",

      "Batch": "BWE53"

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    {

      "name": "Kalyani",

      "Batch": "BWE53"

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    {

      "name": "Mythili",

      "Batch": "BWE53"

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    {

      "name": "Pakiya",

      "Batch": "BWE53"

    },

    {

      "name": "Ashwin",

      "Batch": "BWE53"

    },

    {

      "name": "Kavin",

      "Batch": "BWE53"

    }

  ]

}]

**Queries**

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

db.task.aggregate([

  {

    '$lookup': {

      'from': 'topics',

      'localField': 'topicId',

      'foreignField': 'topicId',

      'as': 'results'

    }

  },

 {

$match:{$or:[{$and:[

      {"results.date":{$gte:new Date("2023-10-01")}},

      {"results.date":{$lte:new Date("2023-10-31")}}

    ]},

              {$and:[

                {"createdAt":{$gte:new Date("2023-10-01")}},

                {"createdAt":{$lte:new Date("2023-10-31")}}

    ]}]}

},

{$project:{

"\_id":0,

"results.topicName":1,

"taskName":1

}}

])

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

db.companyDrives.aggregate([

    {

      $match:{

      $and:[{hiredAt:{$gte:new Date("2023-10-01")}},

            {hiredAt:{$lte:new Date("2023-10-31")}}]

      }

      },{

      '$project': {

        '\_id': 0,

        'companyName': 1

      }

    }

  ])

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

db.companyDrives.aggregate([

    {$lookup:{

      from:"user",

      localField:"userId",

      foreignField:"userId",

      as:"results"

    }},

    {$project:{

      "\_id":0,

      "results.name":1,

      "companyName":1

    }}

  ])

1. **Find the number of problems solved by the user in codekata**

 db.user.aggregate([

    {$lookup:{

      from:'codekata',

      localField:'userId',

      foreignField:'userId',

      as:'results'

    }},

    {$match:{

      "submittedAt":{$exists:true}

    }

    },

    {

      $project:{

        count:{

          $size:"$results"

        }

      }

    }

  ])

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

 db.mentors.find({$expr:{

        $gt:[{$size:"$students"},15]}}).forEach(function(e){

          print(e.mentorName)

        })

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

db.task.aggregate([

    {$lookup:{

      from: "Attendance",

      localField: "userId",

      foreignField: "userId",

      as: "results"

    }

  },

  {

    $match:{

      $and:[

        {

          submittedAt:{$gte:new Date("2023-10-01")}

        },

        {

          submittedAt:{$lte:new Date("2023-10-31")}

        },

        {

          "results.status":{$eq:false}

        }

      ]

    }

  },

  {

    $count:'userId'

  }

  ])