ZEN CLASS – Data Modelling

Insert to Users Collection:

```
Command Prompt - mongo
> db.users.insertMany([
...      {
...           'userdId': 1,
...           'name': 'Madhankumar',
...           'email': 'rcmadhankumar@gmail.com',
...           'mobile': '8110805088',
...           'password': 'MadhanMadhan'
...      },
...      {
...           'userdId': 2,
...           'name': 'Arunkumar',
...           'email': 'arunkumar@gmail.com',
...           'mobile': '8220805088',
...           'password': 'Ak123'
...      },
...      {
...           'userdId': 3,
...           'name': 'Rameshkumar',
...           'email': 'rameshkumar@gmail.com',
...           'mobile': '8330805088',
...           'password': 'RKAzx'
...      },
...      {
...           'userdId': 4,
...           'name': 'Sacheinkumar',
...           'email': 'SacheinKumar@gmail.com',
...           'mobile': '8440805088',
...           'password': 'SacHu'
...      },
...      {
...           'userdId': 5,
...           'name': 'RakeshJun',
...           'email': 'rakkirakesh@gmail.com',
...           'mobile': '8550805088',
...           'password': 'raki12'
...      },
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa230c13911a1baa083c97b"),
                ObjectId("5fa230c13911a1baa083c97c"),
                ObjectId("5fa230c13911a1baa083c97d"),
                ObjectId("5fa230c13911a1baa083c97e"),
```

Insert to codekata collection:

Command Prompt - mongo

```
> db.codekata.insertMany([
...     {
...         'userId': 1,
...         'problemsSolved': 120,
...         'rank': 3000,
...         'geekcoins': 2500
...     },
...     {
...         'userId': 2,
...         'problemsSolved': 220,
...         'rank': 2000,
...         'geekcoins': 4500
...     },
...     {
...         'userId': 3,
...         'problemsSolved': 320,
...         'rank': 1000,
...         'geekcoins': 7500
...     },
...     {
...         'userId': 4,
...         'problemsSolved': 520,
...         'rank': 400,
...         'geekcoins': 11500
...     },
...     {
...         'userId': 5,
...         'problemsSolved': 720,
...         'rank': 100,
...         'geekcoins': 16500
...     }
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa231d83911a1baa083c980"),
                ObjectId("5fa231d83911a1baa083c981"),
                ObjectId("5fa231d83911a1baa083c982"),
                ObjectId("5fa231d83911a1baa083c983"),
                ObjectId("5fa231d83911a1baa083c984")
        ]
}
>
```

Insert to attendance collection:

```
Command Prompt - mongo
> db.attendance.insertMany([
...     {
...         'userId': 1,
...         'date': new Date("2020-10-15"),
...         'status': 'absent'
...     },
...     {
...         'userId': 2,
...         'date': new Date("2020-10-15"),
...         'status': 'present'
...     },
...     {
...         'userId': 3,
...         'date': new Date("2020-10-15"),
...         'status': 'absent'
...     },
...     {
...         'userId': 4,
...         'date': new Date("2020-10-15"),
...         'status': 'present'
...     },
...     {
...         'userId': 5,
...         'date': new Date("2020-10-15"),
...         'status': 'absent'
...     }
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa236953911a1baa083c98a"),
                ObjectId("5fa236953911a1baa083c98b"),
                ObjectId("5fa236953911a1baa083c98c"),
                ObjectId("5fa236953911a1baa083c98d"),
                ObjectId("5fa236953911a1baa083c98e")
        ]
}
>
```

Insert to topics collection:

Command Prompt - mongo

```
> db.topics.insertMany([
...      {
...             'topic_id': 1,
...             'topic_name': 'Javascript-functions',
...             'tasks': ["arrow-functions", "inline-functions", "IIFE"],
...             'date': new Date("2020-10-15"),
...      },
...      {
...             'topic_id': 2,
...             'topic_name': 'Javascript-variables',
...             'tasks': ["var", "let"],
...             'date': new Date("2020-10-15"),
...      },
...      {
...             'topic_id': 3,
...             'topic_name': 'Javascript-events',
...             'tasks': ["event-bubbling", "event-listeners"],
...             'date': new Date("2020-10-15"),
...      },
...      {
...             'topic_id': 4,
...             'topic_name': 'mysql-crud',
...             'tasks': ["create-table", "update-table", "insert"],
...             'date': new Date("2020-10-15"),
...      },
...      {
...             'topic_id': 5,
...             'topic_name': 'mongo',
...             'tasks': ["find", "aggregate"],
...             'date': new Date("2020-10-15"),
...      }
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa297904d202be0f8db9a65"),
                ObjectId("5fa297904d202be0f8db9a66"),
                ObjectId("5fa297904d202be0f8db9a67"),
                ObjectId("5fa297904d202be0f8db9a68"),
                ObjectId("5fa297904d202be0f8db9a69")
        ]
}
```

Insert to drives collection:

```
Command Prompt - mongo
> db.drives.insertMany([
...      {
...           'drive_id': 1,
...           'dirve_name': 'google',
...           'user_ids': [1,2,3,4],
...           'date': new Date("2020-10-15")
...      },
...      {
...           'drive_id': 2,
...           'dirve_name': 'hotstar',
...           'user_ids': [3,4],
...           'date': new Date("2020-11-15")
...      },
...      {
...           'drive_id': 3,
...           'dirve_name': 'micorsoft',
...           'user_ids': [1,2,3,4],
...           'date': new Date("2020-10-25")
...      },
...      {
...           'drive_id': 4,
...           'dirve_name': 'amazon',
...           'user_ids': [1,2,3],
...           'date': new Date("2020-10-30")
...      },
...      {
...           'drive_id': 5,
...           'dirve_name': 'redbus',
...           'user_ids': [1,2,3,4],
...           'date': new Date("2020-09-15")
...      },
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa2986a4d202be0f8db9a6a"),
                ObjectId("5fa2986a4d202be0f8db9a6b"),
                ObjectId("5fa2986a4d202be0f8db9a6c"),
                ObjectId("5fa2986a4d202be0f8db9a6d"),
                ObjectId("5fa2986a4d202be0f8db9a6e")
        ]
}
```

Insert to mentors collection:

```
 Command Prompt - mongo
> db.mentors.insertMany([
...     {
...         'mentor_id': 5,
...         'mentee_ids': [1,2,3,4,6,7,8,9,10,11,12,13,14,15,16]
...     },
...     {
...         'mentor_id': 6,
...         'mentee_ids': [1,2,3,4]
...     },
...     {
...         'mentor_id': 7,
...         'mentee_ids': [1]
...     },
...     {
...         'mentor_id': 8,
...         'mentee_ids': [1,2,3]
...     },
...     {
...         'mentor_id': 9,
...         'mentee_ids': [1,2,3,4,6,7,8]
...     },
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa299294d202be0f8db9a6f"),
                ObjectId("5fa299294d202be0f8db9a70"),
                ObjectId("5fa299294d202be0f8db9a71"),
                ObjectId("5fa299294d202be0f8db9a72"),
                ObjectId("5fa299294d202be0f8db9a73")
        ]
}
>
```

Insert to tasks collection:

```
Command Prompt - mongo
> db.tasks.insertMany([
...    {
...        'user_id': 1,
...        'task_name': 'TV application design',
...        'date': new Date("2020-10-15"),
...        'submission_date': new Date("2020-10-21")
...    },
...    {
...        'user_id': 2,
...        'task_name': 'TV application design',
...        'date': new Date("2020-10-15"),
...        'submission_date': new Date("2020-11-15")
...    },
...    {
...        'user_id': 3,
...        'task_name': 'TV application design',
...        'date': new Date("2020-10-15"),
...        'submission_date': new Date("2020-11-15")
...    },
...    {
...        'user_id': 4,
...        'task_name': 'TV application design',
...        'date': new Date("2020-10-15"),
...        'submission_date': new Date("2020-11-15")
...    },
...    {
...        'user_id': 5,
...        'task_name': 'TV application design',
...        'date': new Date("2020-10-15"),
...        'submission_date': new Date("2020-11-15")
...    }
... ]);
{
        "acknowledged" : true,
        "insertedIds" : [
                ObjectId("5fa29ab84d202be0f8db9a74"),
                ObjectId("5fa29ab84d202be0f8db9a75"),
                ObjectId("5fa29ab84d202be0f8db9a76"),
                ObjectId("5fa29ab84d202be0f8db9a77"),
                ObjectId("5fa29ab84d202be0f8db9a78")
        ]
}
```

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

```
Command Prompt - mongo
> db.topics.aggregate([
...     {
...         $project :{
...             'topic_name': 1,
...             'date': '$date',
...             'month' : {
...                 $month: '$date'
...             },
...             'year': {
...                 $year: '$date'
...             },
...
...         }
...     },
...     {
...         $match:{
...             'month': 10,
...             'year': 2020
...         }
...     },
...     {
...         $project:{
...             'topic_name': 1,
...             'date': 1
...         }
...     }
...
... ]).pretty()
{
        "_id" : ObjectId("5fa297904d202be0f8db9a65"),
        "topic_name" : "Javascript-functions",
        "date" : ISODate("2020-10-15T00:00:00Z")
}
{
        "_id" : ObjectId("5fa297904d202be0f8db9a66"),
        "topic_name" : "Javascript-variables",
        "date" : ISODate("2020-10-15T00:00:00Z")
}
{
        "_id" : ObjectId("5fa297904d202be0f8db9a67"),
        "topic_name" : "Javascript-events",
        "date" : ISODate("2020-10-15T00:00:00Z")
}
```

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

```
Command Prompt - mongo
> db.drives.aggregate([
...     {
...         $project:{
...             'drive_name': '$dirve_name',
...             'date': 1,
...             'day': { $dayOfMonth : '$date'},
...             'month': {$month : '$date'},
...             'year': {$year: '$date'}
...         }
...     },
...     {
...         $match: {
...             'year':{
...                 $eq : 2020
...             },
...             'month':{
...                 $eq : 10
...             },
...             'day': {
...                 $gte: 15,
...                 $lte:31
...             }
...         }
...     },
...     {
...         $project: {
...             'drive_name': 1,
...             'date': 1
...         }
...     }
...
... ]).pretty();
{
        "_id" : ObjectId("5fa2986a4d202be0f8db9a6a"),
        "date" : ISODate("2020-10-15T00:00:00Z"),
        "drive_name" : "google"
}
{
        "_id" : ObjectId("5fa2986a4d202be0f8db9a6c"),
        "date" : ISODate("2020-10-25T00:00:00Z"),
        "drive_name" : "micorsoft"
}
```

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

```
▣ Command Prompt - mongo
> db.drives.aggregate([
...     {
...         $lookup: {
...             from: 'users',
...             localField: 'user_ids',
...             foreignField: 'userdId',
...             as: 'res'
...         }
...     }
... ]).pretty()
{
        "_id" : ObjectId("5fa2986a4d202be0f8db9a6a"),
        "drive_id" : 1,
        "dirve_name" : "google",
        "user_ids" : [
                1,
                2,
                3,
                4
        ],
        "date" : ISODate("2020-10-15T00:00:00Z"),
        "res" : [
                {
                        "_id" : ObjectId("5fa230c13911a1baa083c97b"),
                        "userdId" : 1,
                        "name" : "Madhankumar",
                        "email" : "rcmadhankumar@gmail.com",
                        "mobile" : "8110805088",
                        "password" : "MadhanMadhan"
                },
                {
                        "_id" : ObjectId("5fa230c13911a1baa083c97c"),
                        "userdId" : 2,
                        "name" : "Arunkumar",
                        "email" : "arunkumar@gmail.com",
                        "mobile" : "8220805088",
                        "password" : "Ak123"
                },
                {
                        "_id" : ObjectId("5fa230c13911a1baa083c97d"),
                        "userdId" : 3,
                        "name" : "Rameshkumar",
```

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

```
> db.codekata.aggregate([
...     {
...         $lookup:{
...             from: 'users',
...             localField: 'userId',
...             foreignField: 'userdId',
...             as: 'user_details'
...         }
...     },
...     {
...         $project: {
...             'name' : '$user_details.name',
...             'problems_solved': '$problemsSolved'
...         }
...     }
... ]).pretty()
{
        "_id" : ObjectId("5fa231d83911a1baa083c980"),
        "name" : [
                "Madhankumar"
        ],
        "problems_solved" : 120
}
{
        "_id" : ObjectId("5fa231d83911a1baa083c981"),
        "name" : [
                "Arunkumar"
        ],
        "problems_solved" : 220
}
{
        "_id" : ObjectId("5fa231d83911a1baa083c982"),
        "name" : [
                "Rameshkumar"
        ],
        "problems_solved" : 320
}
{
        "_id" : ObjectId("5fa231d83911a1baa083c983"),
        "name" : [
                "Sacheinkumar"
        ],
        "problems_solved" : 520
}
```

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

Command Prompt - mongo

```
> db.mentors.aggregate([
...     {
...         $lookup: {
...             from: 'users',
...             localField: 'mentor_id',
...             foreignField: 'userdId',
...             as: 'mentor_details'
...         }
...     },
...     {
...         $project: {
...             'mentor_name': '$mentor_details.name',
...             'mentees_count': {
...                 $size: '$mentee_ids'
...             }
...         }
...     },
...     {
...         $match: {
...             'mentees_count': {
...                 $gte: 15
...             }
...         }
...     }
... ]).pretty()
{
        "_id" : ObjectId("5fa299294d202be0f8db9a6f"),
        "mentor_name" : [
                "RakeshJun"
        ],
        "mentees_count" : 15
}
>
```

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

Command Prompt - mongo

```
> db.attendance.aggregate([
...     {
...         $lookup:{
...             from: 'tasks',
...             localField: 'userId',
...             foreignField: 'user_id',
...             as: 'userTasks'
...         }
...     },
...     {
...         $match: {
...             'userTasks.submission_date': {
...                 $gte: ISODate("2020-10-15T00:00:00Z"),
...                 $lte: ISODate("2020-11-01T00:00:00Z"),
...             },
...             'status': 'absent'
...         }
...     },
...     {
...         $lookup: {
...             from: 'users',
...             localField: 'userId',
...             foreignField: 'userdId',
...             as: 'userDetails'
...
...         }
...     },
...     {
...         $project: {
...             'userDetails': {
...                 $arrayElemAt: ["$userDetails", 0]
...             },
...             'taskDetails': {
...                 $arrayElemAt: ["$userTasks", 0]
...             },
...             'status': 1
...         }
...     },
```

```
...        {
...            $project: {
...                'Name': "$userDetails.name",
...                'Task Name': '$taskDetails.task_name',
...                'status': 1,
...                'Submission date': '$taskDetails.submission_date',
...
...            }
...        }
... ]).pretty()
{
        "_id" : ObjectId("5fa236953911a1baa083c98a"),
        "status" : "absent",
        "Name" : "Madhankumar",
        "Task Name" : "TV application design",
        "Submission date" : ISODate("2020-10-21T00:00:00Z")
}
>
```