BLOG MODEL - NOSQL (MongoDB)

Schema :

1. Users

- `_id` (int)
- `name` (string)
- `email` (string)
- `credits` (int)

2. Categories

- `_id` (int)
- `name` (string)

3. Tags

- `_id` (int)
- `name` (string)

4. Articles

- `_id` (int)
- `user_id` (int → references Users._id)
- `title` (string)
- `date` (date)
- `text` (string)
- `url` (string)
- `categories` (array of int → references Categories._id)
- `tags` (array of int → references Tags._id)

5. Comments

- `_id` (int)
- `article_id` (int → references Articles._id)
- `user_id` (int → references Users._id)
- `date` (date)
- `text` (string)

.

INSERTION OF ELEMENTS INTO COLLECTIONS :

1. Users.json

```
[
  { "_id": 1, "name": "Lokesh", "email": "lokesh@example.com", "credits": 450 },
  { "_id": 2, "name": "Suresh", "email": "suresh@example.com", "credits": 380 },
  { "_id": 3, "name": "Manoj", "email": "manoj@example.com", "credits": 210 },
  { "_id": 4, "name": "Karthik", "email": "karthik@example.com", "credits": 320 },
  { "_id": 5, "name": "Anitha", "email": "anitha@example.com", "credits": 150 }
]
```

2. Categories.json

```
[
  { "_id": 1, "name": "Technology" },
  { "_id": 2, "name": "Health" },
  { "_id": 3, "name": "Travel" }
]
```

3. Tags.json

```
[
  { "_id": 1, "name": "AI" },
  { "_id": 2, "name": "Fitness" },
  { "_id": 3, "name": "Adventure" }
]
```

4. Articles.json


```
[

  { "_id": 1, "user_id": 1, "title": "AI for Everyone", "date": "2025-09-06", "text": "Intro to AI basics", "url": "url1", "categories": [1], "tags": [1] },

  { "_id": 2, "user_id": 1, "title": "Tech in India", "date": "2025-09-06", "text": "Technology trends in India", "url": "url2", "categories": [1], "tags": [1] },


  { "_id": 3, "user_id": 2, "title": "Yoga for Beginners", "date": "2025-09-06", "text": "Simple yoga steps", "url": "url3", "categories": [2], "tags": [2] },

  { "_id": 4, "user_id": 2, "title": "Healthy Eating", "date": "2025-09-06", "text": "Nutrition advice", "url": "url4", "categories": [2], "tags": [2] },


  { "_id": 5, "user_id": 3, "title": "Trip to Kerala", "date": "2025-09-06", "text": "Travel experience in Kerala", "url": "url5", "categories": [3], "tags": [3] },

  { "_id": 6, "user_id": 3, "title": "Backpacking South India", "date": "2025-09-06", "text": "Backpacking tips", "url": "url6", "categories": [3], "tags": [3] },


  { "_id": 7, "user_id": 4, "title": "AI in Medicine", "date": "2025-09-06", "text": "How AI helps healthcare", "url": "url7", "categories": [1,2], "tags": [1,2] },

  { "_id": 8, "user_id": 4, "title": "Daily Workouts", "date": "2025-09-06", "text": "Simple daily workouts", "url": "url8", "categories": [2], "tags": [2] },


  { "_id": 9, "user_id": 5, "title": "Adventure in Nilgiris", "date": "2025-09-06", "text": "Trekking in Nilgiris", "url": "url9", "categories": [3], "tags": [3] },

  { "_id": 10, "user_id": 5, "title": "Tech for Travelers", "date": "2025-09-06", "text": "How tech helps travelers", "url": "url10", "categories": [1,3], "tags": [1,3] }

]
```


5. comments.json


```
[

  { "_id": 1, "article_id": 1, "user_id": 2, "date": "2025-09-06", "text": "Great insights Lokesh!" },
```

{ "_id": 2, "article_id": 1, "user_id": 3, "date": "2025-09-06", "text": "Very useful article." },

{ "_id": 3, "article_id": 1, "user_id": 4, "date": "2025-09-06", "text": "Nicely explained!" },

{ "_id": 4, "article_id": 2, "user_id": 5, "date": "2025-09-06", "text": "Well written!" },

{ "_id": 5, "article_id": 2, "user_id": 3, "date": "2025-09-06", "text": "Thanks for sharing." },

{ "_id": 6, "article_id": 2, "user_id": 2, "date": "2025-09-06", "text": "Very informative." },

{ "_id": 7, "article_id": 3, "user_id": 1, "date": "2025-09-06", "text": "Nice yoga tips!" },

{ "_id": 8, "article_id": 3, "user_id": 4, "date": "2025-09-06", "text": "Easy to follow." },

{ "_id": 9, "article_id": 3, "user_id": 5, "date": "2025-09-06", "text": "Good one Suresh." },

{ "_id": 10, "article_id": 4, "user_id": 1, "date": "2025-09-06", "text": "Helpful advice." },

{ "_id": 11, "article_id": 4, "user_id": 3, "date": "2025-09-06", "text": "Great nutrition guide." },

{ "_id": 12, "article_id": 4, "user_id": 5, "date": "2025-09-06", "text": "Very practical." },

{ "_id": 13, "article_id": 5, "user_id": 2, "date": "2025-09-06", "text": "I want to visit Kerala too!" },

{ "_id": 14, "article_id": 5, "user_id": 4, "date": "2025-09-06", "text": "Great travel story." },

{ "_id": 15, "article_id": 5, "user_id": 5, "date": "2025-09-06", "text": "Kerala is beautiful!" }

]

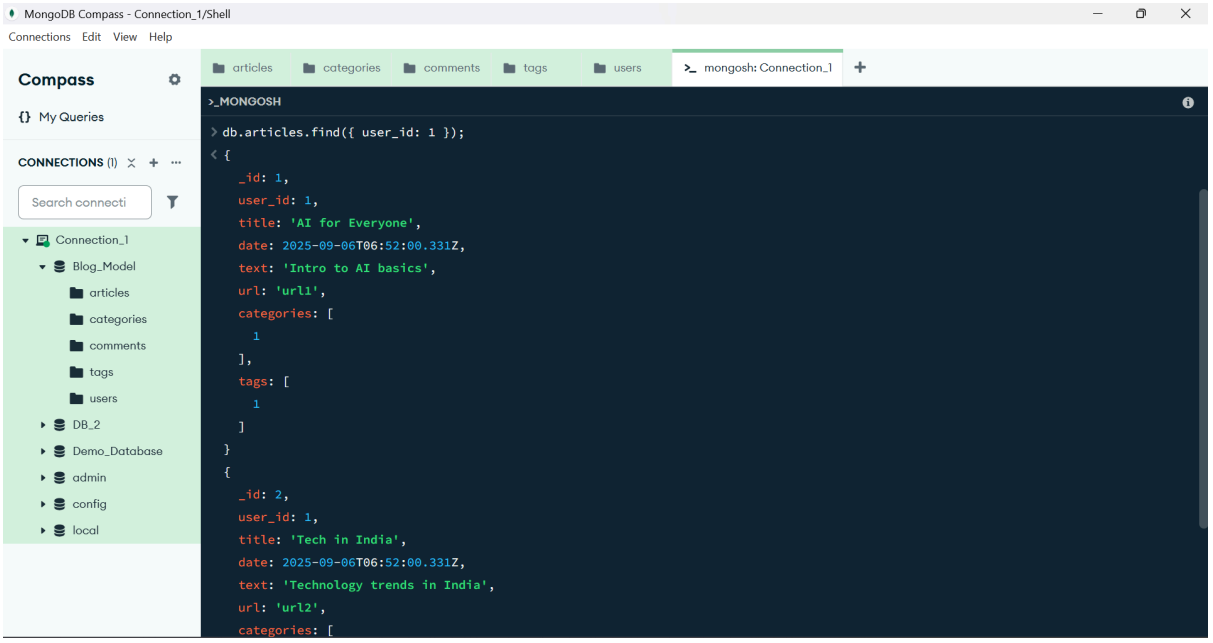
QUERIES AND OUTPUT :

1. Fetch all articles for a given user

db.articles.find({ user_id: 1 });

Output :


```
{
  _id: 1,
  user_id: 1,
  title: 'AI for Everyone',
  date: 2025-09-06T06:52:00.331Z,
  text: 'Intro to AI basics',
  url: 'url1',
  categories: [
    1
  ],
  tags: [
    1
  ]
}
{
  _id: 2,
  user_id: 1,
  title: 'Tech in India',
  date: 2025-09-06T06:52:00.331Z,
  text: 'Technology trends in India',
  url: 'url2',
  categories: [
    1
  ],
  tags: [
    1
  ]
}
```



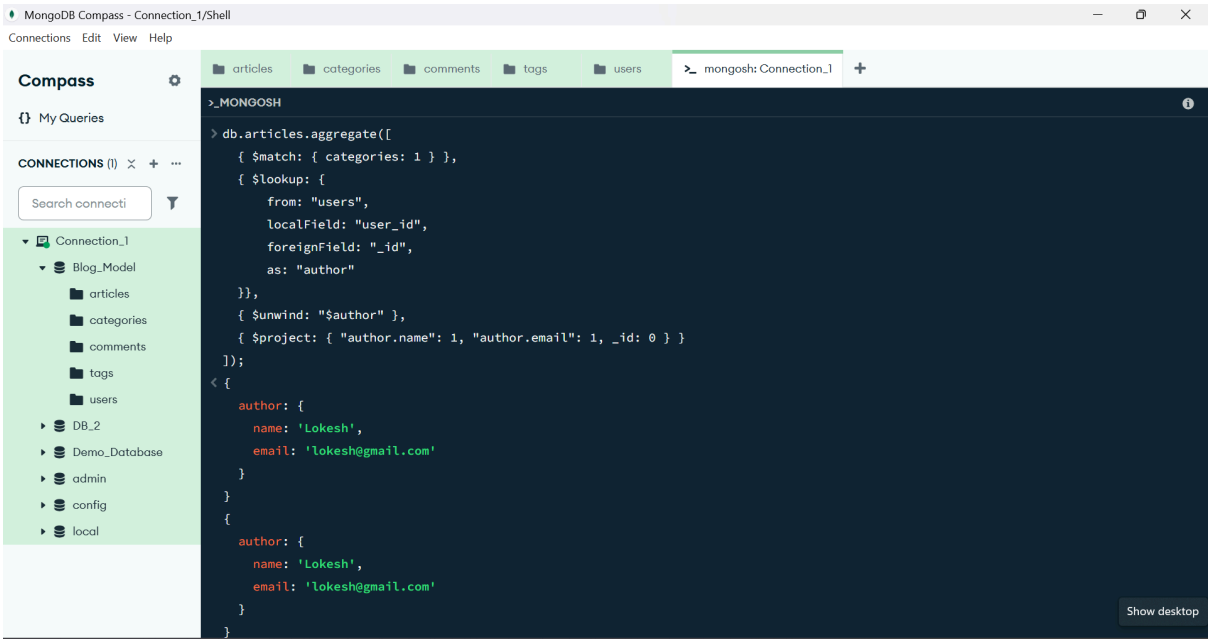
2. Fetch users who write articles for a given category

```
db.articles.aggregate([
  { $match: { categories: 1 } },
  { $lookup: {
      from: "users",
      localField: "user_id",
      foreignField: "_id",
      as: "author"
  }},
  { $unwind: "$author" },
  { $project: { "author.name": 1, "author.email": 1, _id: 0 } }
]);
```

Output :

```
{
  author: {
    name: 'Lokesh',
    email: 'lokesh@gmail.com'
  }
}
{
  author: {
    name: 'Lokesh',
    email: 'lokesh@gmail.com'
  }
}
```

```
{
  author: {
    name: 'Karthik',
    email: 'karthik@gmail.com'
  }
}
{
  author: {
    name: 'Anitha',
    email: 'anitha@gmail.com'
  }
}
```

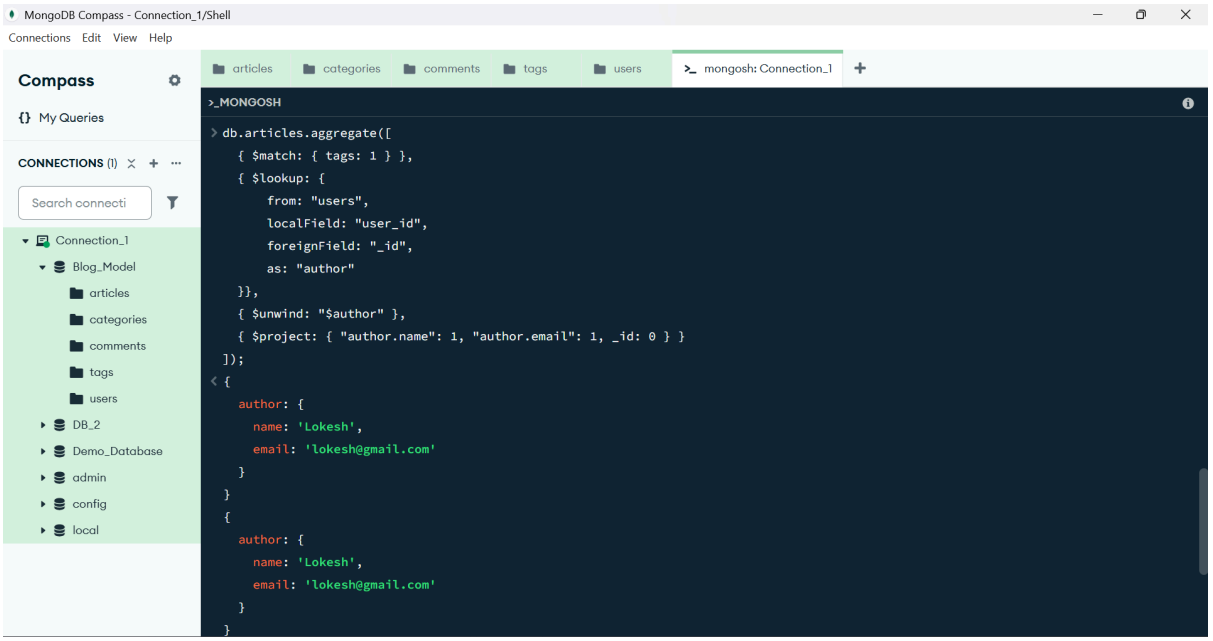


3. Fetch users who write articles for a given Tag.

```
db.articles.aggregate([
  { $match: { tags: 1 } },
  { $lookup: {
      from: "users",
      localField: "user_id",
      foreignField: "_id",
      as: "author"
  }},
  { $unwind: "$author" },
  { $project: { "author.name": 1, "author.email": 1, _id: 0 } }
]);
```

Output :

```
{
  author: {
    name: 'Lokesh',
    email: 'lokesh@gmail.com'
  }
}
{
  author: {
    name: 'Lokesh',
    email: 'lokesh@gmail.com'
  }
}
{
  author: {
    name: 'Karthik',
    email: 'karthik@gmail.com'
  }
}
{
  author: {
    name: 'Anitha',
    email: 'anitha@gmail.com'
  }
}
```

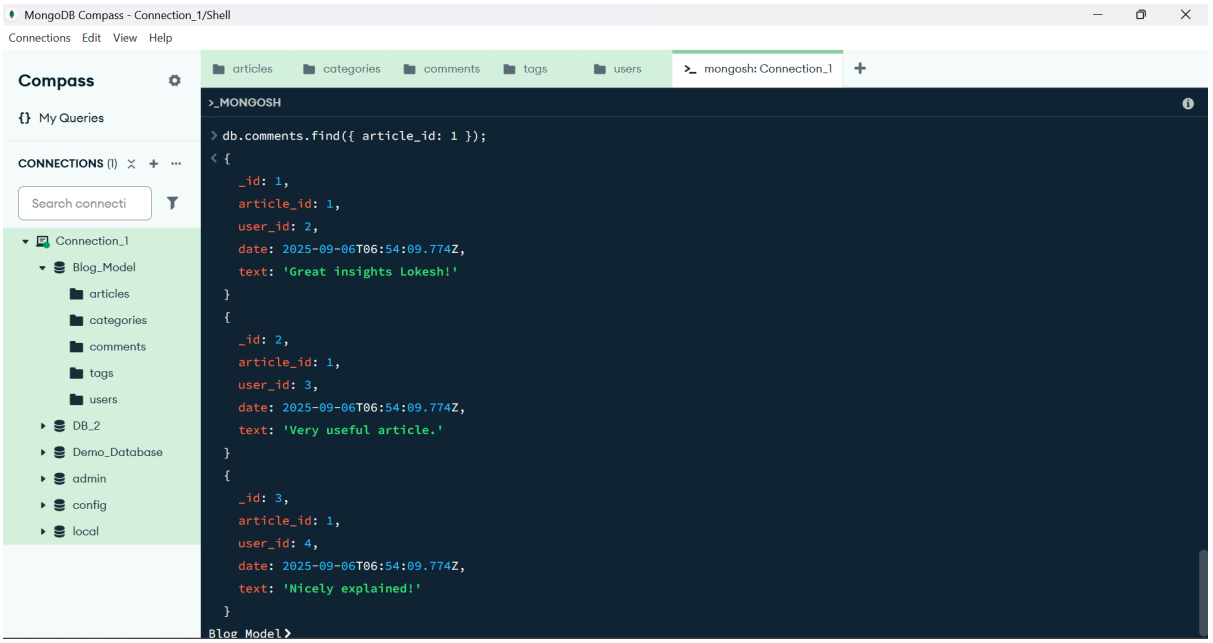


4. Fetch all the comments for a particular article.

db.comments.find({ article_id: 1 });

Output :

```
{
  _id: 1,
  article_id: 1,
  user_id: 2,
  date: 2025-09-06T06:54:09.774Z,
  text: 'Great insights Lokesh!'
}
{
  _id: 2,
  article_id: 1,
  user_id: 3,
  date: 2025-09-06T06:54:09.774Z,
  text: 'Very useful article.'
}
{
  _id: 3,
  article_id: 1,
  user_id: 4,
  date: 2025-09-06T06:54:09.774Z,
  text: 'Nicely explained!'
}
```

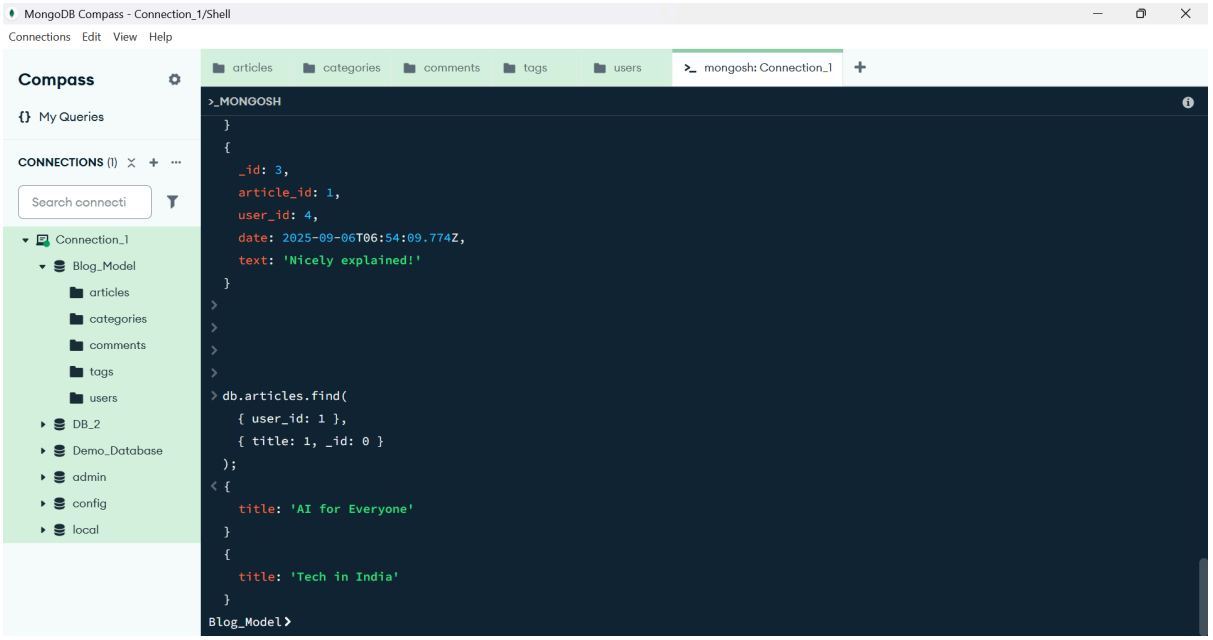


5. Write a query to fetch all articles for the user. Use projection to fetch only the title of each article and not the complete document.

```
db.articles.find(
  { user_id: 1 },
  { title: 1, _id: 0 }
);
```

Output :

```
{
  title: 'AI for Everyone'
}
{
  title: 'Tech in India'
}
```



6. Write a query to deduct 50 credits from a particular user. Note: the query should not update the credits field. It should subtract from the value. Post screenshots before and after running the query.

```
// Before Updation

db.users.find({ _id: 1 }, { name: 1, credits: 1 });
{
```

```
  _id: 1,
  name: 'Lokesh',
  credits: 450
}

// Query For Updation

db.users.updateOne(
  { _id: 1 },
  { $inc: { credits: -50 } }
);
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}

// After updating the credits

db.users.find({ _id: 1 }, { name: 1, credits: 1 });
{
  _id: 1,
  name: 'Lokesh',
  credits: 400
}
```