

	Course Name: Advanced Web Technology	EXPERIMENT NO. 4	
	Course Code: 20CP314P Faculty: Komal Singh	Branch: CSE	Semester: VI
Submitted by: Patel Vraj ChetanKumar Roll no: 21BCP362			

Objective: Building models with Mongoose

Experiment 4: Create a database schema and model using mongoose and perform MongoDB queries for operations such as insert, update, and delete while also establishing a connection to the MongoDB database.

1. Npm init -y & npm install mongoose

```
vrajpatel@192 p4_mongoose % npm init -y
Wrote to /Users/vrajpatel/Desktop/pdeu/sem 6/LAB/AWT/Practicals/p4_mongoose/package.json:

{
  "name": "p4_mongoose",
  "version": "1.0.0",
  "description": "",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC"
}

vrajpatel@192 p4_mongoose % npm install mongoose

added 20 packages, and audited 21 packages in 18s

1 package is looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

2. Create index.js

Connect to mongoDB and Define Model

```
const mongoose = require('mongoose');

mongoose.connect('mongodb://localhost/LibrarySystemModelMongoose', { useNewUrlParser: true,
useUnifiedTopology: true })
```

```
.then(() => console.log('Connected to MongoDB successfully'))
.catch((error) => console.error('Error connecting to MongoDB', error));

const bookSchema = new mongoose.Schema({
  title: {
    type: String,
    required: true
  },
  author: {
    type: String,
    required: true
  },
  publishedYear: {
    type: Number,
    required: true
  }
});

const Book = mongoose.model('Book', bookSchema);
```

3. Run the file with nodemon index.js command

4. Run mongosh to connect to mongodb

```
o vrajpatel@192 p4_mongoose % mongosh
Current Mongosh Log ID: 661778aad5b587a61d4c8392
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverSelect
ionTimeoutMS=2000&appName=mongosh+2.2.2
Using MongoDB:      7.0.2
Using Mongosh:      2.2.2
mongosh 2.2.3 is available for download: https://www.mongodb.com/try/download/shell

For mongosh info see: https://docs.mongodb.com/mongodbs-shell/

-----
The server generated these startup warnings when booting
2024-04-05T12:58:00.187+05:30: Access control is not enabled for the database. Rea
d and write access to data and configuration is unrestricted
-----

test> use LibrarySystemModelMongoose
switched to db LibrarySystemModelMongoose
LibrarySystemModelMongoose> db.books.find().pretty()
[
  {
    _id: ObjectId('661777921d69f2601e7bc167'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    publishedYear: 1925,
    __v: 0
  }
]
```

LibrarySystemModelMongooseStorage size:
36.86 kBCollections:
1Indexes:
1**books**Storage size:
20.48 kBDocuments:
1Avg. document size:
110.00 BIndexes:
1Total index size:
36.86 kB

5. Insert data

```
const newBook = new Book({
  title: 'The Great Gatsby',
  author: 'F. Scott Fitzgerald',
  publishedYear: 1925
});
newBook.save()
  .then((book) => {
    console.log('Book saved:', book);
  })
  .catch((error) => {
    console.error('Error saving book:', error);
  });
```

```
_id: ObjectId('66177e638b4f295db4aa41e6')
title: "The Great Gatsby"
author: "F. Scott Fitzgerald"
publishedYear: 1925
__v: 0
```

```
LibrarySystemModelMongoose> db.books.find()
[
  {
    _id: ObjectId('66177e638b4f295db4aa41e6'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    publishedYear: 1925,
    __v: 0
  }
]
```

6. Update data

```
Book.updateOne({ title: 'The Great Gatsby' }, { $set: { publishedYear: 1926 } })
  .then((result) => {
    console.log('Book updated:', result);
  });
```

```
})  
.catch((error) => {  
  console.error('Error updating book:', error);  
});
```

```
LibrarySystemModelMongoose> db.books.find()  
[  
  {  
    _id: ObjectId('661777921d69f2601e7bc167'),  
    title: 'The Great Gatsby',  
    author: 'F. Scott Fitzgerald',  
    publishedYear: 1926,  
    __v: 0  
  },  
  {  
    _id: ObjectId('66177e35a232d08b68ea8de6'),  
    title: 'The Great Gatsby',  
    author: 'F. Scott Fitzgerald',  
    publishedYear: 1925,  
    __v: 0  
  },  
]
```

7. Delete data

```
Book.deleteOne({ title: 'The Great Gatsby' })  
.then((result) => {  
  console.log('Book deleted:', result);  
})  
.catch((error) => {  
  console.error('Error deleting book:', error);  
});
```

```
Connected to MongoDB successfully!  
Book deleted: { acknowledged: true, deletedCount: 1 }
```

8. Insert many

```
const booksToInsert = [  
  { title: 'NEW THINKING', author: 'Dagogo Altraide', publishedYear: 2017 },  
  { title: 'DEEP WORK', author: 'Cal Newport', publishedYear: 2019 },  
]
```

```
{ title: 'THE ALMANACK OF NAVAL RAVIKANT', author: 'Naval Ravikant',
publishedYear: 2020 }
];
```

```
Book.insertMany(booksToInsert)
  .then((books) => {
    console.log('Books inserted:', books);
  })
  .catch((error) => {
    console.error('Error inserting books:', error);
  });
```

Connected to MongoDB successfully!

```
Books inserted: [
  {
    title: 'NEW THINKING',
    author: 'Dagogo Altraide',
    publishedYear: 2017,
    _id: new ObjectId('6617827b66cb5fb78b6dd36a'),
    __v: 0
  },
  {
    title: 'DEEP WORK',
    author: 'Cal Newport',
    publishedYear: 2019,
    _id: new ObjectId('6617827b66cb5fb78b6dd36b'),
    __v: 0
  },
  {
    title: 'THE ALMANACK OF NAVAL RAVIKANT',
    author: 'Naval Ravikant',
    publishedYear: 2020,
    _id: new ObjectId('6617827b66cb5fb78b6dd36c'),
    __v: 0
  }
]
```

LibrarySystemModelMongoose> db.books.find()

```
[
  {
    _id: ObjectId('66177e638b4f295db4aa41e6'),
    title: 'The Great Gatsby',
    author: 'F. Scott Fitzgerald',
    publishedYear: 1925,
    __v: 0
  },
  {
    _id: ObjectId('6617827b66cb5fb78b6dd36a'),
    title: 'NEW THINKING',
    author: 'Dagogo Altraide',
    publishedYear: 2017,
    __v: 0
  },
  {
    _id: ObjectId('6617827b66cb5fb78b6dd36b'),
    title: 'DEEP WORK',
    author: 'Cal Newport',
    publishedYear: 2019,
    __v: 0
  },
  {
    _id: ObjectId('6617827b66cb5fb78b6dd36c'),
    title: 'THE ALMANACK OF NAVAL RAVIKANT',
    author: 'Naval Ravikant',
    publishedYear: 2020,
    __v: 0
  }
]
```

```
_id: ObjectId('66177e638b4f295db4aa41e6')
title: "The Great Gatsby"
author: "F. Scott Fitzgerald"
publishedYear: 1925
__v: 0
```

```
_id: ObjectId('6617827b66cb5fb78b6dd36a')
title: "NEW THINKING"
author: "Dagogo Altraide"
publishedYear: 2017
__v: 0
```

```
_id: ObjectId('6617827b66cb5fb78b6dd36b')
title: "DEEP WORK"
author: "Cal Newport"
publishedYear: 2019
__v: 0
```

```
_id: ObjectId('6617827b66cb5fb78b6dd36c')
title: "THE ALMANACK OF NAVAL RAVIKANT"
author: "Naval Ravikant"
publishedYear: 2020
__v: 0
```