

LAB ASSIGNMENT 6

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502B COURSE CODE:

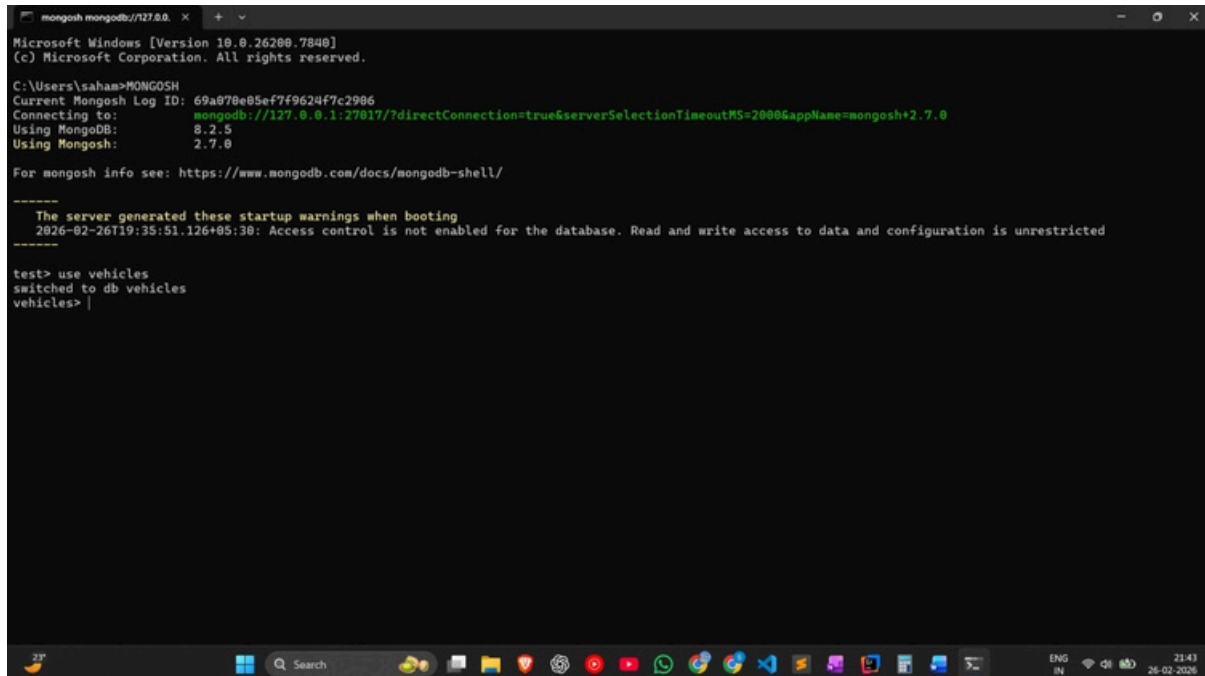
CSE4004 COURSE NAME:

WEB

TECHNOLOGIES

DATABASE – 1: Vehicles

Program 1: Create a database called 'vehicles' and write a MongoDB query to select database as "vehicles".



```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26200.7840]
(c) Microsoft Corporation. All rights reserved.

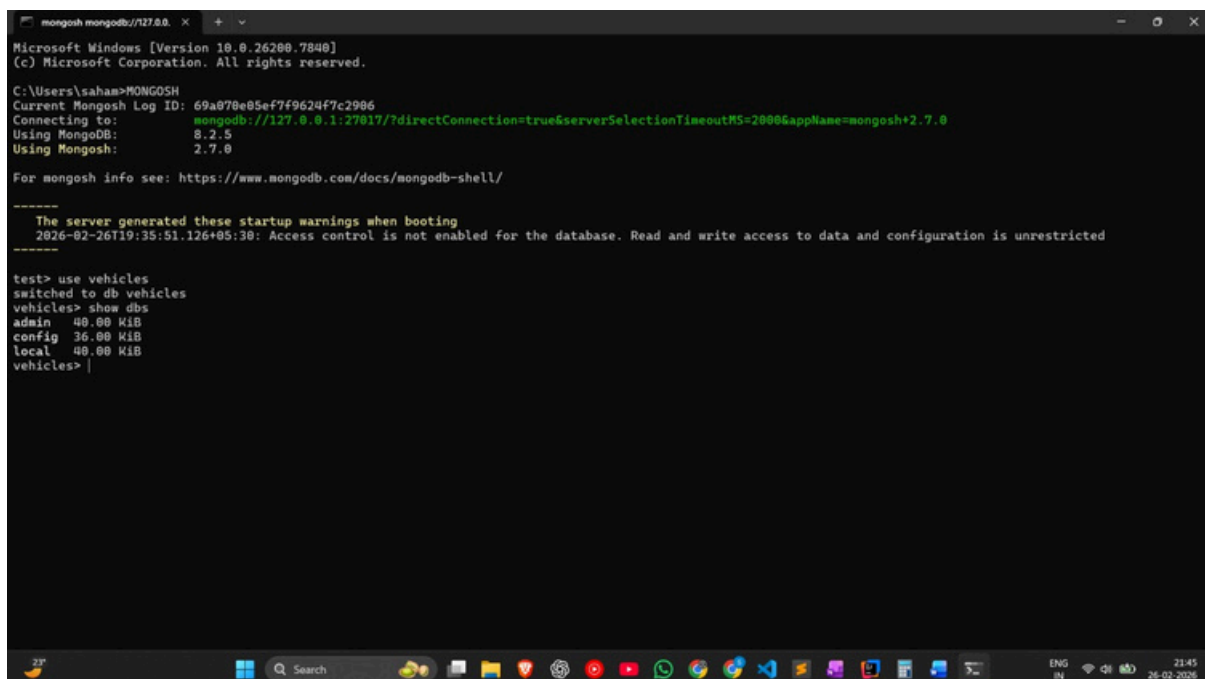
C:\Users\saham>MONGOSH
Current Mongosh Log ID: 69a070e05ef7f9624f7c2906
Connecting to: mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB: 8.2.5
Using Mongosh: 2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T19:35:51.126+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use vehicles
switched to db vehicles
vehicles> |
```

Program 2: Write a MongoDB query to display all the databases.



```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26200.7840]
(c) Microsoft Corporation. All rights reserved.

C:\Users\saham>MONGOSH
Current Mongosh Log ID: 69a070e05ef7f9624f7c2906
Connecting to: mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB: 8.2.5
Using Mongosh: 2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T19:35:51.126+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use vehicles
switched to db vehicles
vehicles> show dbs
admin 40.00 MiB
config 36.00 MiB
local 40.00 MiB
vehicles> |
```

Program 3: Create a collection called 'two_wheelers'. (use capping) and Create a collection called 'four_wheelers'.

```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26280.7840]
(c) Microsoft Corporation. All rights reserved.

C:\Users\saham>MONGOSH
Current Mongosh Log ID: 69a878e85ef7f9624f7c2986
Connecting to:  mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB:  8.2.5
Using Mongosh:  2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T19:35:51.126+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

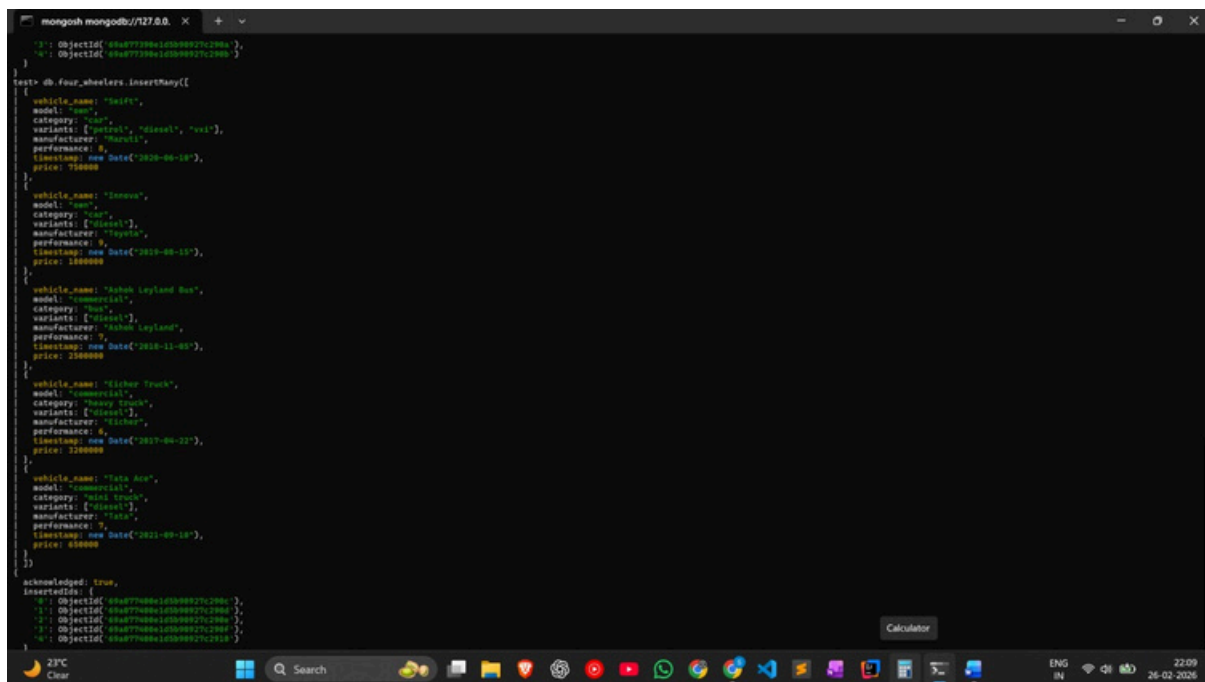
test> use vehicles
switched to db vehicles
vehicles> show dbs
admin    40.00 MiB
config  36.00 MiB
local   40.00 MiB
vehicles> db.createCollection("two_wheelers", { capped: true, size: 5242880 })
{ ok: 1 }
vehicles> | db.createCollection("four_wheelers")
{ ok: 1 }
vehicles>
```

Program 4: Add 5 two-wheeler details to the collection named 'two_wheelers'. Each document consists of following fields as bike_name, model (gear or gearless), category (100cc, 125cc, 150cc, 200cc), colors_available (red, black, blue, sport red etc) as array, manufacturer, performance (out of 10), timestamp (date and year release) and price.

```
mongosh mongodb://127.0.0.1:27017/
2026-02-26T21:53:18.397+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted

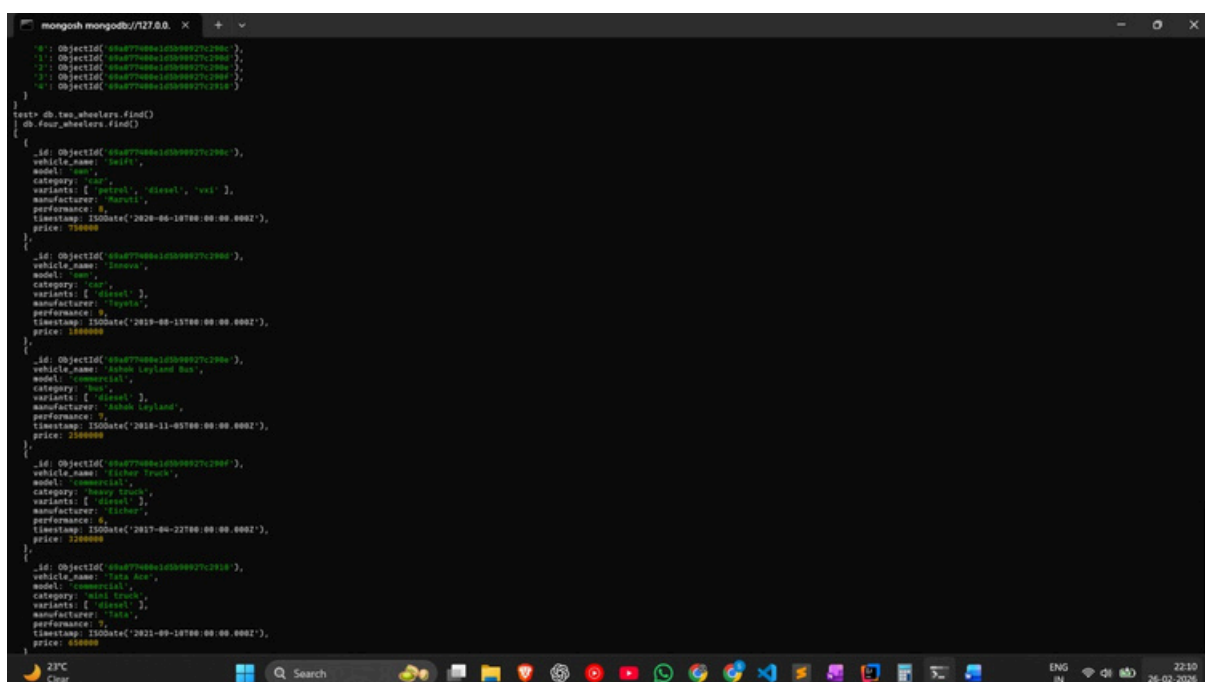
test> db.two_wheelers.insertMany([
  {
    bike_name: "Pulsar",
    model: "gear",
    category: "150cc",
    colors_available: ["red", "black", "blue"],
    manufacturer: "Bajaj",
    performance: 7,
    timestamp: new Date("2019-09-12"),
    price: 11000
  },
  {
    bike_name: "Activa",
    model: "gearless",
    category: "110cc",
    colors_available: ["white", "black", "red"],
    manufacturer: "Honda",
    performance: 6,
    timestamp: new Date("2020-02-08"),
    price: 9000
  }
])
test> db.two_wheelers.insertMany([
  {
    bike_name: "Pulsar",
    model: "gear",
    category: "150cc",
    colors_available: ["red", "black", "blue"],
    manufacturer: "Bajaj",
    performance: 7,
    timestamp: new Date("2019-09-12"),
    price: 11000
  },
  {
    bike_name: "Pulsar",
    model: "gear",
    category: "150cc",
    colors_available: ["red", "black", "blue"],
    manufacturer: "Bajaj",
    performance: 7,
    timestamp: new Date("2019-09-12"),
    price: 11000
  },
  {
    bike_name: "Activa",
    model: "gearless",
    category: "110cc",
    colors_available: ["white", "black", "red"],
    manufacturer: "Honda",
    performance: 6,
    timestamp: new Date("2020-02-08"),
    price: 9000
  },
  {
    bike_name: "Apache",
    model: "gear",
    category: "150cc",
    colors_available: ["black", "sport red"],
    manufacturer: "TVS",
    performance: 8
  }
])
```

Program 5: Add 5 four-wheeler details to the collection named 'four_wheelers'. Each document consists of following fields as vehicle_name, model (commercial or own), category (car, lorry, bus, mini truck, heavy truck, containers), variants (vxi, zxi, petrol, diesel etc) as array, manufacturer, performance (out of 10), timestamp (date and year release) and price.



```
mongo> use test
test> db.four_wheelers.insertMany([
  {
    vehicle_name: "Swift",
    model: "own",
    category: "car",
    variants: ["petrol", "diesel", "vxi"],
    manufacturer: "Maruti",
    performance: 8,
    timestamp: new Date("2020-06-18"),
    price: 700000
  },
  {
    vehicle_name: "Innova",
    model: "own",
    category: "car",
    variants: ["diesel"],
    manufacturer: "Toyota",
    performance: 9,
    timestamp: new Date("2019-08-15"),
    price: 1800000
  },
  {
    vehicle_name: "Ashok Leyland Bus",
    model: "commercial",
    category: "bus",
    variants: ["diesel"],
    manufacturer: "Ashok Leyland",
    performance: 7,
    timestamp: new Date("2018-11-01"),
    price: 2500000
  },
  {
    vehicle_name: "Eicher Truck",
    model: "commercial",
    category: "heavy truck",
    variants: ["diesel"],
    manufacturer: "Eicher",
    performance: 6,
    timestamp: new Date("2017-04-23"),
    price: 2200000
  },
  {
    vehicle_name: "Tata Ace",
    model: "commercial",
    category: "mini truck",
    variants: ["diesel"],
    manufacturer: "Tata",
    performance: 7,
    timestamp: new Date("2021-09-18"),
    price: 650000
  }
])
acknowledged: true,
insertedIds: [
  ObjectId('60a779461d3b0027c290c'),
  ObjectId('60a779461d3b0027c290d'),
  ObjectId('60a779461d3b0027c290e'),
  ObjectId('60a779461d3b0027c290f'),
  ObjectId('60a779461d3b0027c2910')
]
```

Program 6: Write a MongoDB query to display all documents available in two_wheelers and four_wheelers.



```
mongo> use test
test> db.two_wheelers.find()
test> db.four_wheelers.find()
{
  _id: ObjectId('60a779461d3b0027c290c'),
  vehicle_name: "Swift",
  model: "own",
  category: "car",
  variants: ["petrol", "diesel", "vxi"],
  manufacturer: "Maruti",
  performance: 8,
  timestamp: ISODate("2020-06-18T00:00:00.000Z"),
  price: 700000
},
{
  _id: ObjectId('60a779461d3b0027c290d'),
  vehicle_name: "Innova",
  model: "own",
  category: "car",
  variants: ["diesel"],
  manufacturer: "Toyota",
  performance: 9,
  timestamp: ISODate("2019-08-15T00:00:00.000Z"),
  price: 1800000
},
{
  _id: ObjectId('60a779461d3b0027c290e'),
  vehicle_name: "Ashok Leyland Bus",
  model: "commercial",
  category: "bus",
  variants: ["diesel"],
  manufacturer: "Ashok Leyland",
  performance: 7,
  timestamp: ISODate("2018-11-01T00:00:00.000Z"),
  price: 2500000
},
{
  _id: ObjectId('60a779461d3b0027c290f'),
  vehicle_name: "Eicher Truck",
  model: "commercial",
  category: "heavy truck",
  variants: ["diesel"],
  manufacturer: "Eicher",
  performance: 6,
  timestamp: ISODate("2017-04-23T00:00:00.000Z"),
  price: 2200000
},
{
  _id: ObjectId('60a779461d3b0027c2910'),
  vehicle_name: "Tata Ace",
  model: "commercial",
  category: "mini truck",
  variants: ["diesel"],
  manufacturer: "Tata",
  performance: 7,
  timestamp: ISODate("2021-09-18T00:00:00.000Z"),
  price: 650000
}
```

Program 7: Write a MongoDB query to display only vehicle name and price in all the collection of the database

```
test> use two_wheelers; find({ manufacturer: 'TVS' })
{
  _id: ObjectId('60a077396a1d3b00927c2909'),
  bike_name: 'Ducchi',
  model: 'gear',
  category: 'motor',
  colors_available: [ 'black', 'sport red' ],
  manufacturer: 'TVS',
  performance: 8,
  timestamp: ISODate('2018-07-15T00:00:00.000Z'),
  price: 130000
},
{
  _id: ObjectId('60a077396a1d3b00927c290a'),
  bike_name: 'Jupiter',
  model: 'motor',
  category: 'motor',
  colors_available: [ 'grey', 'black' ],
  manufacturer: 'TVS',
  performance: 8,
  timestamp: ISODate('2021-01-25T00:00:00.000Z'),
  price: 85000
}
```

Program 8: Write a MongoDB query to display two_wheelers from a particular company

```
test> use two_wheelers; find({ manufacturer: 'TVS' })
{
  _id: ObjectId('60a077396a1d3b00927c2909'),
  bike_name: 'Ducchi',
  model: 'gear',
  category: 'motor',
  colors_available: [ 'black', 'sport red' ],
  manufacturer: 'TVS',
  performance: 8,
  timestamp: ISODate('2018-07-15T00:00:00.000Z'),
  price: 130000
},
{
  _id: ObjectId('60a077396a1d3b00927c290a'),
  bike_name: 'Jupiter',
  model: 'motor',
  category: 'motor',
  colors_available: [ 'grey', 'black' ],
  manufacturer: 'TVS',
  performance: 8,
  timestamp: ISODate('2021-01-25T00:00:00.000Z'),
  price: 85000
}
```

Program 9: Write a MongoDB query to display four_wheelers available in diesel variants

```
mongo> use mongo; use four_wheelers; find({ variants: 'diesel' })
{
  _id: ObjectId('60a077396a1d3b00927c2909'),
  vehicle_name: 'Safari',
  model: 'van',
  category: 'van',
  variants: [ 'petrol', 'diesel', 'cng' ],
  manufacturer: 'Maruti',
  performance: 8,
  timestamp: ISODate('2020-06-18T00:00:00.000Z'),
  price: 750000
},
{
  _id: ObjectId('60a077396a1d3b00927c290a'),
  vehicle_name: 'Innova',
  model: 'van',
  category: 'van',
  variants: [ 'diesel' ],
  manufacturer: 'Toyota',
  performance: 9,
  timestamp: ISODate('2019-08-15T00:00:00.000Z'),
  price: 180000
},
{
  _id: ObjectId('60a077396a1d3b00927c290b'),
  vehicle_name: 'Ashok Leyland Bus',
  model: 'commercial',
  category: 'bus',
  variants: [ 'diesel' ],
  manufacturer: 'Ashok Leyland',
  performance: 8,
  timestamp: ISODate('2018-11-05T00:00:00.000Z'),
  price: 1500000
},
{
  _id: ObjectId('60a077396a1d3b00927c290c'),
  vehicle_name: 'Tata Nano',
  model: 'commercial',
  category: 'mini truck',
  variants: [ 'diesel' ],
  manufacturer: 'Tata',
  performance: 8,
  timestamp: ISODate('2021-09-18T00:00:00.000Z'),
  price: 65000
}
```

Program 10: Write a MongoDB query to display vehicles name, category and manufacturer details whose rating is more than 5.

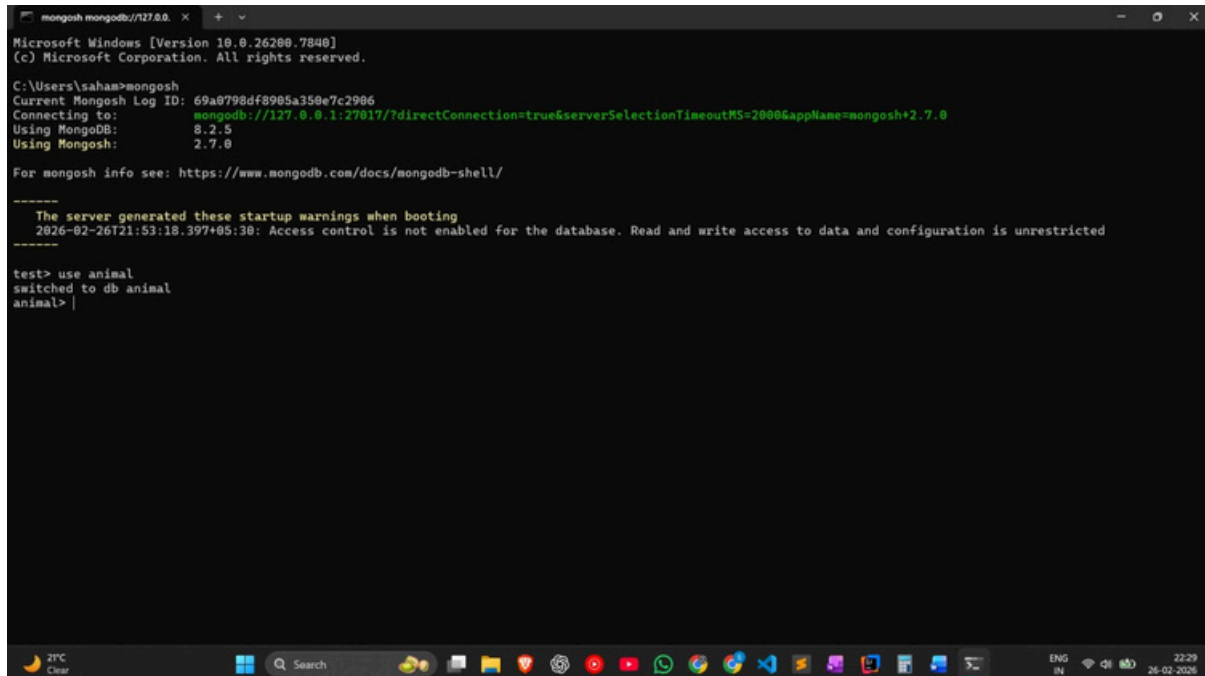
```
test> db.two_wheeler.find(
  {
    performance: { $gt: 5 } },
  {
    bike_name: 1, category: 1, manufacturer: 1, _id: 0 }
)

db.four_wheeler.find(
  {
    performance: { $gt: 5 } },
  {
    vehicle_name: 1, category: 1, manufacturer: 1, _id: 0 }
)

{
  vehicle_name: 'Swift', category: 'car', manufacturer: 'Maruti' },
{
  vehicle_name: 'Innova', category: 'car', manufacturer: 'Toyota' },
{
  vehicle_name: 'Ashok Leyland Bus',
  category: 'bus',
  manufacturer: 'Ashok Leyland'
},
{
  vehicle_name: 'Eicher Truck',
  category: 'Heavy Truck',
  manufacturer: 'Eicher'
},
{
  vehicle_name: 'Tata Ace',
  category: 'Mini Truck',
  manufacturer: 'Tata'
}
```

DATABASE – 2: ZOO

Program 1: Create a database called 'animal' and write a MongoDB query to select database as 'animal'.



```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26200.7840]
(c) Microsoft Corporation. All rights reserved.

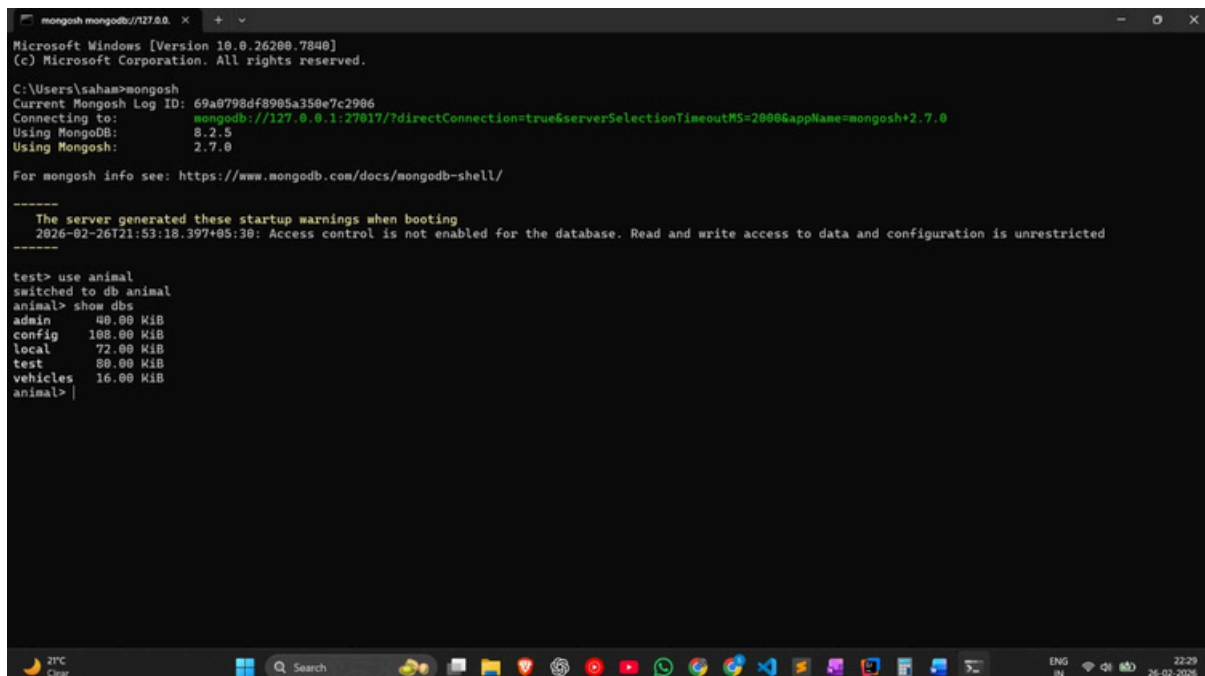
C:\Users\saham>mongosh
Current Mongosh Log ID: 69a0798df8905a350e7c2906
Connecting to: mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB: 8.2.5
Using Mongosh: 2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T21:53:18.397+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use animal
switched to db animal
animal> |
```

Program 2: Write a MongoDB query to display all the databases.



```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26200.7840]
(c) Microsoft Corporation. All rights reserved.

C:\Users\saham>mongosh
Current Mongosh Log ID: 69a0798df8905a350e7c2906
Connecting to: mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB: 8.2.5
Using Mongosh: 2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T21:53:18.397+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use animal
switched to db animal
animal> show dbs
admin          48.00 KiB
config         108.00 KiB
local          72.00 KiB
test           80.00 KiB
vehicles       16.00 KiB
animal> |
```

Program 3: Create a collection called 'wild_animals'.(use capping) and Create a collection called 'domestic_animals'.

```
mongosh mongodb://127.0.0.1:27017/
Microsoft Windows [Version 10.0.26280.7840]
(c) Microsoft Corporation. All rights reserved.

C:\Users\sahas>mongosh
Current Mongosh Log ID: 69a8798df8985a350e7c2906
Connecting to:  mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.7.0
Using MongoDB:  8.2.5
Using Mongosh:  2.7.0

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

-----
The server generated these startup warnings when booting
2026-02-26T21:53:18.397+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
-----

test> use animal
switched to db animal
animal> show dbs
admin            48.00 KiB
config           188.00 KiB
local            72.00 KiB
test             80.00 KiB
vehicles         16.00 KiB
animal> db.createCollection("wild_animals", { capped: true, size: 5242880 })
| db.createCollection("domestic_animals")
{ ok: 1 }
animal>
```

Program 4: Add 5 wild_animal details to the collection named 'wild_animals'. Each document consists of following fields as animal_name, nature (harm or harmless), favorite_foods (meat, rabbits, deer etc) as array, care_taker_name, life span (in years), timestamp (when the animal registered at the Zoo) and expenses.

```
mongosh mongodb://127.0.0.1:27017/
{
  care_taker_name: "Suresh",
  life_span: 20,
  timestamp: new Date("2019-06-18"),
  expenses: 60000
},
{
  animal_name: "Santhal",
  nature: "harmless",
  favorite_foods: ["grass", "fruits"],
  care_taker_name: "Ravi",
  life_span: 60,
  timestamp: new Date("2017-01-25"),
  expenses: 70000
},
{
  animal_name: "Bear",
  nature: "harm",
  favorite_foods: ["fish", "honey"],
  care_taker_name: "Anil",
  life_span: 25,
  timestamp: new Date("2020-08-14"),
  expenses: 40000
},
{
  animal_name: "Parrot",
  nature: "harmless",
  favorite_foods: ["grass"],
  care_taker_name: "Anil",
  life_span: 10,
  timestamp: new Date("2021-11-20"),
  expenses: 20000
}
}
acknowledged: true,
insertedIds: [
  '0': ObjectId('69a87c6ef8985a350e7c2907'),
  '1': ObjectId('69a87c6ef8985a350e7c2908'),
  '2': ObjectId('69a87c6ef8985a350e7c2909'),
  '3': ObjectId('69a87c6ef8985a350e7c290a'),
  '4': ObjectId('69a87c6ef8985a350e7c290b')
]
}
```


Program 5: Add 5 domestic-animal details to the collection named 'domestic_animals'. Each document consists of following fields as animal_name, gender (male or female), favorite_foods (meat, rabbits, deer etc) as array, animal_petname, life span (in years), timestamp (when the animal registered at the Zoo) and expenses.

```
mongosh mongoDB://127.0.0.1
{
  animal_petname: "Kitty",
  life_span: 15,
  timestamp: new Date("2019-05-18"),
  expenses: 12000
},
{
  animal_name: "Cow",
  gender: "female",
  favorite_foods: ["grass"],
  animal_petname: "Ganga",
  life_span: 20,
  timestamp: new Date("2018-07-25"),
  expenses: 20000
},
{
  animal_name: "Goat",
  gender: "male",
  favorite_foods: ["leaves"],
  animal_petname: "Kannu",
  life_span: 10,
  timestamp: new Date("2021-01-10"),
  expenses: 8000
},
{
  animal_name: "Horse",
  gender: "male",
  favorite_foods: ["grass"],
  animal_petname: "Chetak",
  life_span: 25,
  timestamp: new Date("2017-09-30"),
  expenses: 30000
}
}
acknowledged: true,
insertedIds: {
  '0': ObjectId('69a07ca6f8905a350e7c290c'),
  '1': ObjectId('69a07ca6f8905a350e7c290d'),
  '2': ObjectId('69a07ca6f8905a350e7c290e'),
  '3': ObjectId('69a07ca6f8905a350e7c290f'),
  '4': ObjectId('69a07ca6f8905a350e7c2910')
}
```

Program 6: Write a MongoDB query to display all documents available in wild_animals and domestic_animals.

```
mongosh mongoDB://127.0.0.1
expenses: 15000
},
{
  _id: ObjectId('69a07ca6f8905a350e7c290d'),
  animal_name: 'Cat',
  gender: 'female',
  favorite_foods: [ 'milk', 'fish' ],
  animal_petname: 'Kitty',
  life_span: 15,
  timestamp: ISODate('2019-05-18T00:00:00.000Z'),
  expenses: 12000
},
{
  _id: ObjectId('69a07ca6f8905a350e7c290e'),
  animal_name: 'Cow',
  gender: 'female',
  favorite_foods: [ 'grass' ],
  animal_petname: 'Ganga',
  life_span: 20,
  timestamp: ISODate('2018-07-25T00:00:00.000Z'),
  expenses: 20000
},
{
  _id: ObjectId('69a07ca6f8905a350e7c290f'),
  animal_name: 'Goat',
  gender: 'male',
  favorite_foods: [ 'leaves' ],
  animal_petname: 'Kannu',
  life_span: 10,
  timestamp: ISODate('2021-01-10T00:00:00.000Z'),
  expenses: 8000
},
{
  _id: ObjectId('69a07ca6f8905a350e7c2910'),
  animal_name: 'Horse',
  gender: 'male',
  favorite_foods: [ 'grass' ],
  animal_petname: 'Chetak',
  life_span: 25,
  timestamp: ISODate('2017-09-30T00:00:00.000Z'),
  expenses: 30000
}
}
```

Program 7: Write a MongoDB query to display only animal name and expenses in all the collection of the database

```
animal> db.wild_animals.find({}, { animal_name: 1, expenses: 1, _id: 0 })
[ db.domestic_animals.find({}, { animal_name: 1, expenses: 1, _id: 0 }) ]
[ { animal_name: 'Dog', expenses: 15000 },
  { animal_name: 'Cat', expenses: 12000 },
  { animal_name: 'Cow', expenses: 20000 },
  { animal_name: 'Goat', expenses: 8000 },
  { animal_name: 'Horse', expenses: 30000 } ]
```

Program 8: Write a MongoDB query to display domestic_animals whose life is a particular year

```
animal> db.domestic_animals.find({ life_span: 10 })
[ { _id: ObjectId('69a07ca6f8905a350e7c290f'),
  animal_name: 'Goat',
  gender: 'male',
  favorite_foods: [ 'leaves' ],
  animal_petname: 'Nannu',
  life_span: 10,
  timestamp: ISODate('2021-01-10T00:00:00.000Z'),
  expenses: 8000 } ]
```

Program 9: Write a MongoDB query to display wild_animals available under a particular care_taker

```
animal> db.wild_animals.find({ care_taker_name: 'Ravi' })
[ { _id: ObjectId('69a07c6ef8905a350e7c2907'),
  animal_name: 'Lion',
  nature: 'harm',
  favorite_foods: [ 'meat', 'deer' ],
  care_taker_name: 'Ravi',
  life_span: 15,
  timestamp: ISODate('2018-03-10T00:00:00.000Z'),
  expenses: 50000 },
  { _id: ObjectId('69a07c6ef8905a350e7c2909'),
  animal_name: 'Santhal',
  nature: 'harmless',
  favorite_foods: [ 'grass', 'fruits' ],
  care_taker_name: 'Ravi',
  life_span: 60,
  timestamp: ISODate('2017-01-25T00:00:00.000Z'),
  expenses: 70000 } ]
```

Program 10: Write a MongoDB query to display animal name, favorite_foods and expenses details whose lifespan is more than 5 years.

```
animal> db.wild_animals.find(
  { life_span: { $gt: 5 } },
  { animal_name: 1, favorite_foods: 1, expenses: 1, _id: 0 }
)
[ db.domestic_animals.find(
  { life_span: { $gt: 5 } },
  { animal_name: 1, favorite_foods: 1, expenses: 1, _id: 0 }
) ]
[ { animal_name: 'Dog',
  favorite_foods: [ 'meat', 'rice' ],
  expenses: 15000 },
  { animal_name: 'Cat',
  favorite_foods: [ 'milk', 'fish' ],
  expenses: 12000 },
  { animal_name: 'Cow', favorite_foods: [ 'grass' ], expenses: 20000 },
  { animal_name: 'Goat', favorite_foods: [ 'leaves' ], expenses: 8000 },
  { animal_name: 'Horse', favorite_foods: [ 'grass' ], expenses: 30000 } ]
```

