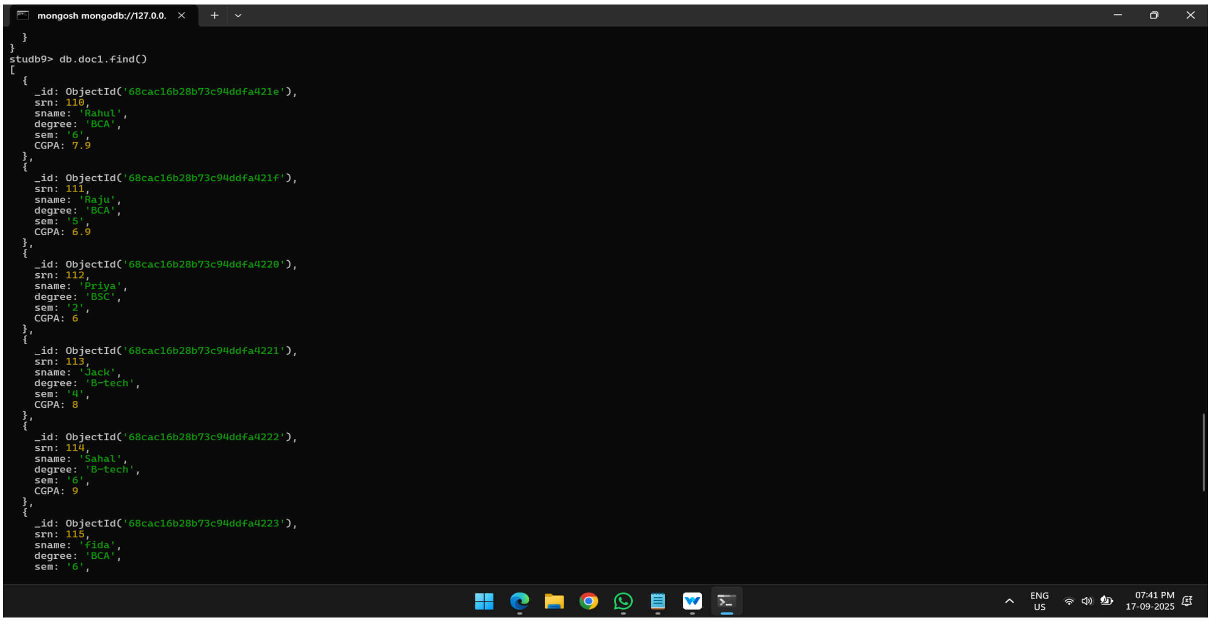
All answers of the assignment

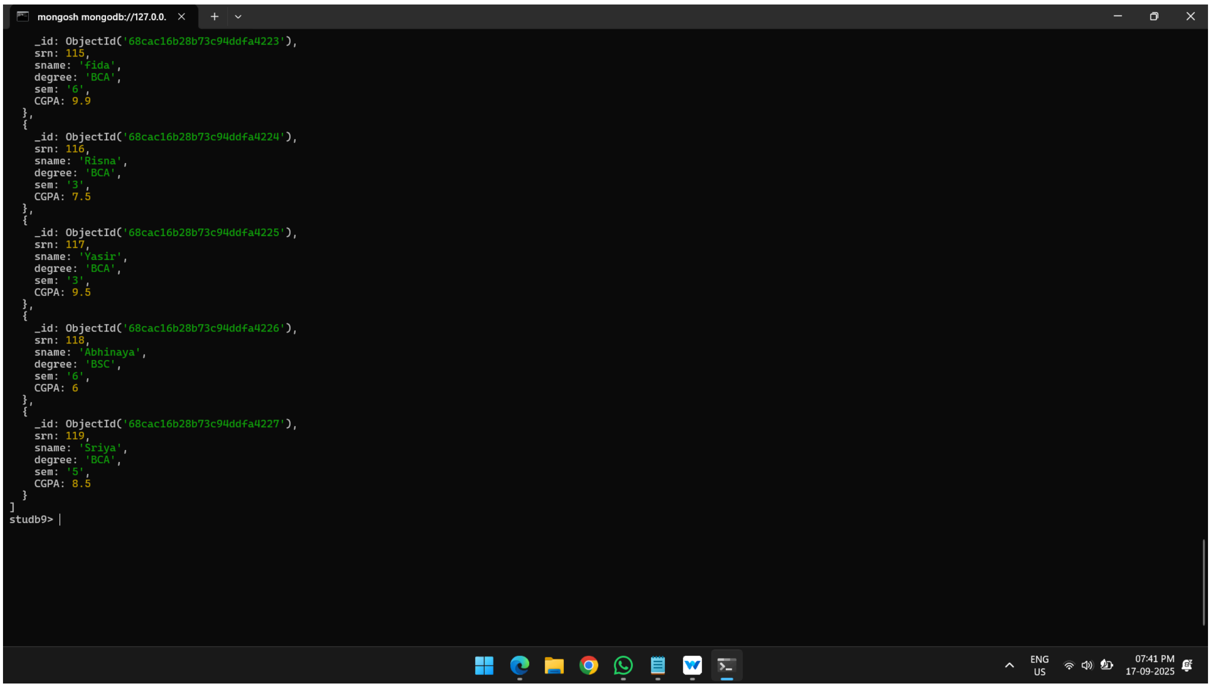
Exercise 1 - Student Database :-

1.display all the documents
a.



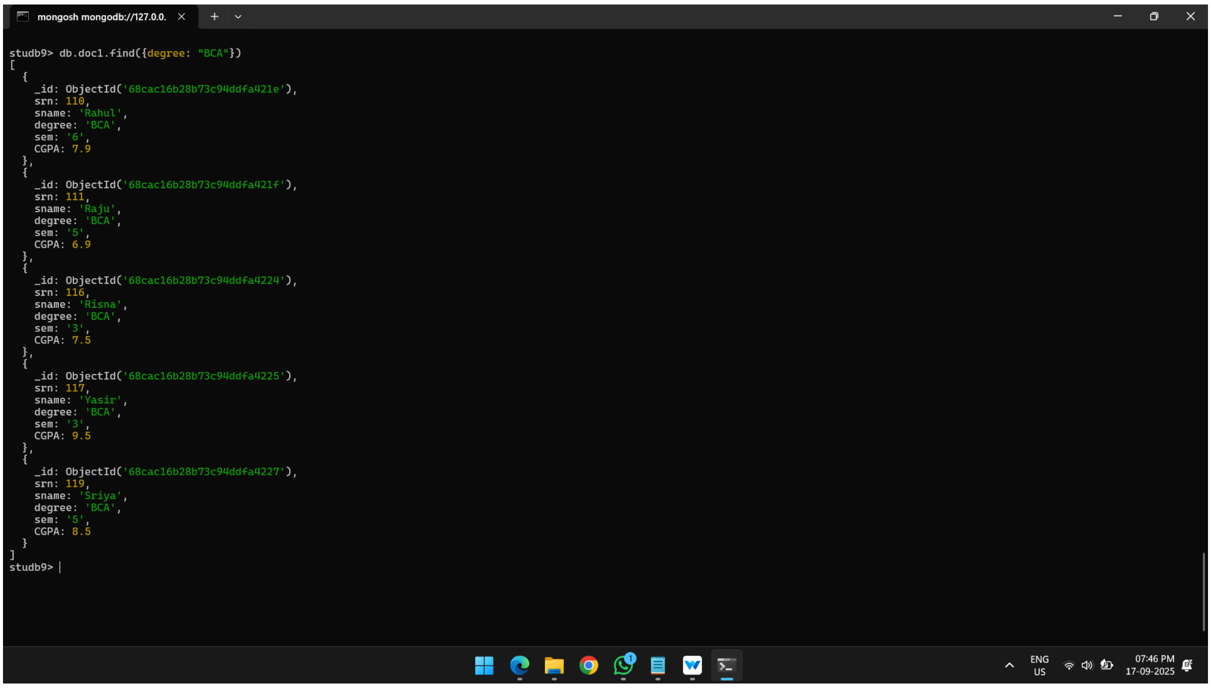
```
  }
}
studb9> db.doc1.find()
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4220'),
    srn: 112,
    sname: 'Priya',
    degree: 'BSC',
    sem: '2',
    CGPA: 6
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4221'),
    srn: 113,
    sname: 'Jack',
    degree: 'B-tech',
    sem: '4',
    CGPA: 8
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'fida',
    degree: 'BCA',
    sem: '6',
```

b.



```
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'fida',
    degree: 'BCA',
    sem: '6',
    CGPA: 9.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4225'),
    srn: 117,
    sname: 'Yasir',
    degree: 'BCA',
    sem: '3',
    CGPA: 9.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4226'),
    srn: 118,
    sname: 'Abhinaya',
    degree: 'BSC',
    sem: '6',
    CGPA: 6
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4227'),
    srn: 119,
    sname: 'Sriya',
    degree: 'BCA',
    sem: '5',
    CGPA: 8.5
  }
]
studb9> |
```

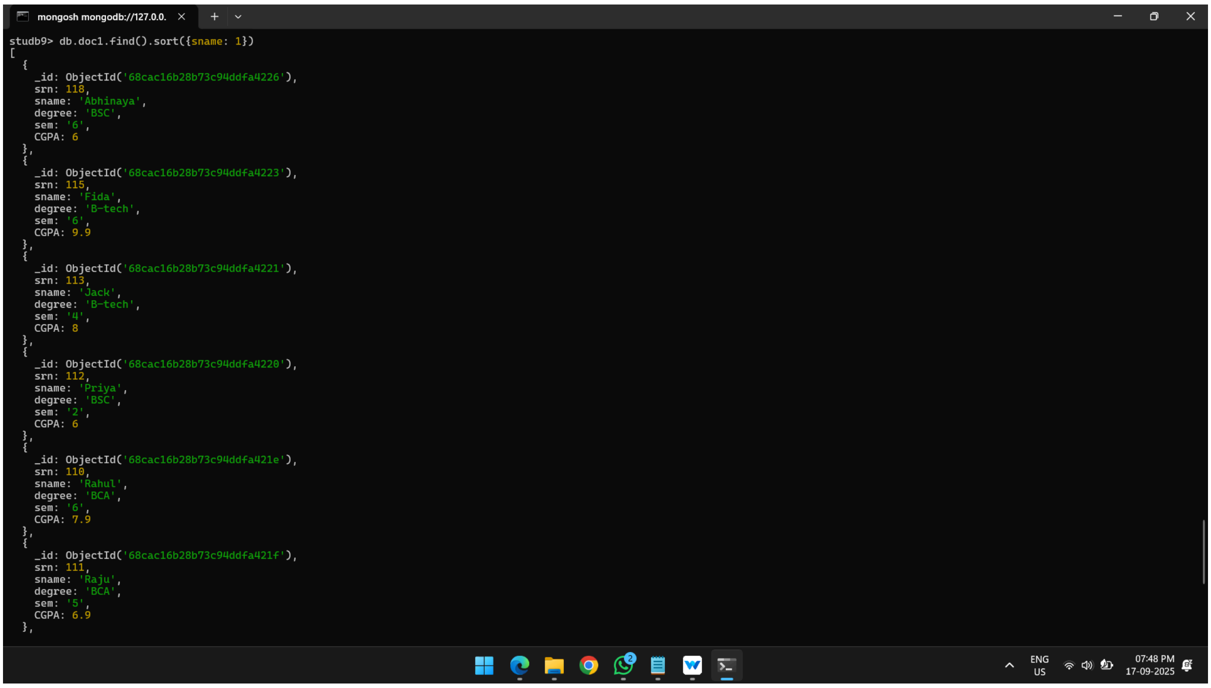
2.Display all the students in BCA



```
studb9> db.doc1.find({degree: "BCA"})
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4225'),
    srn: 117,
    sname: 'Yasir',
    degree: 'BCA',
    sem: '3',
    CGPA: 9.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4227'),
    srn: 119,
    sname: 'Sriya',
    degree: 'BCA',
    sem: '5',
    CGPA: 8.5
  }
]
studb9> |
```

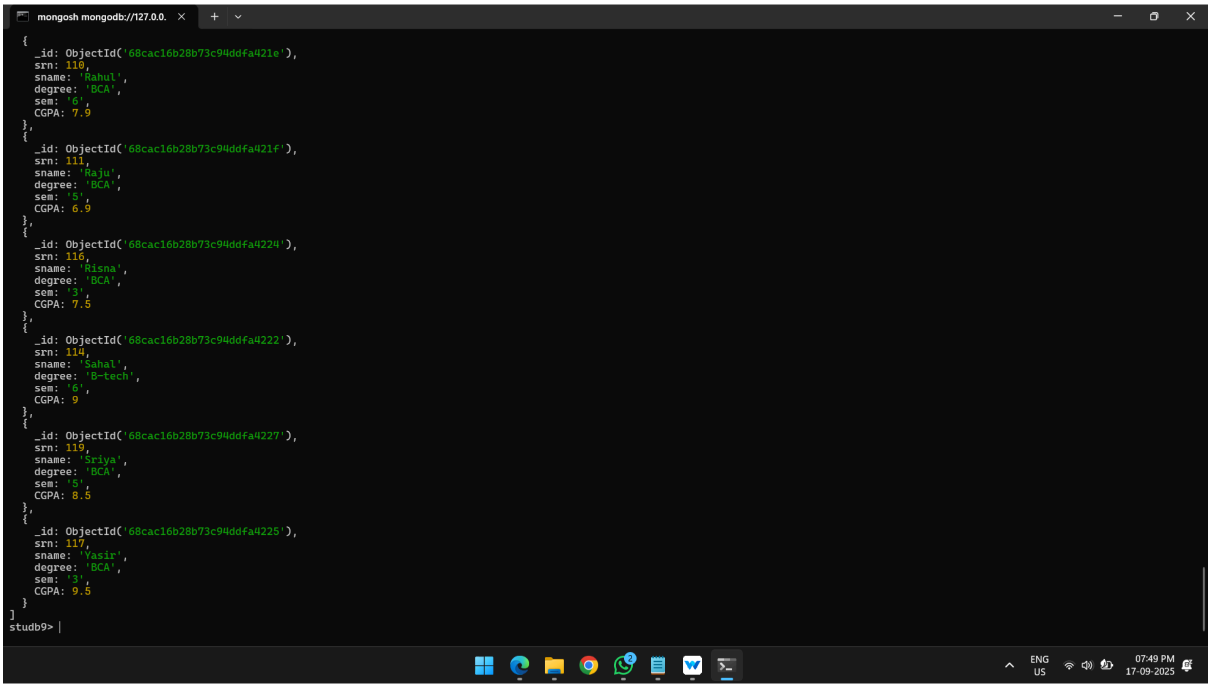
3.Display all the students in ascending order

A.



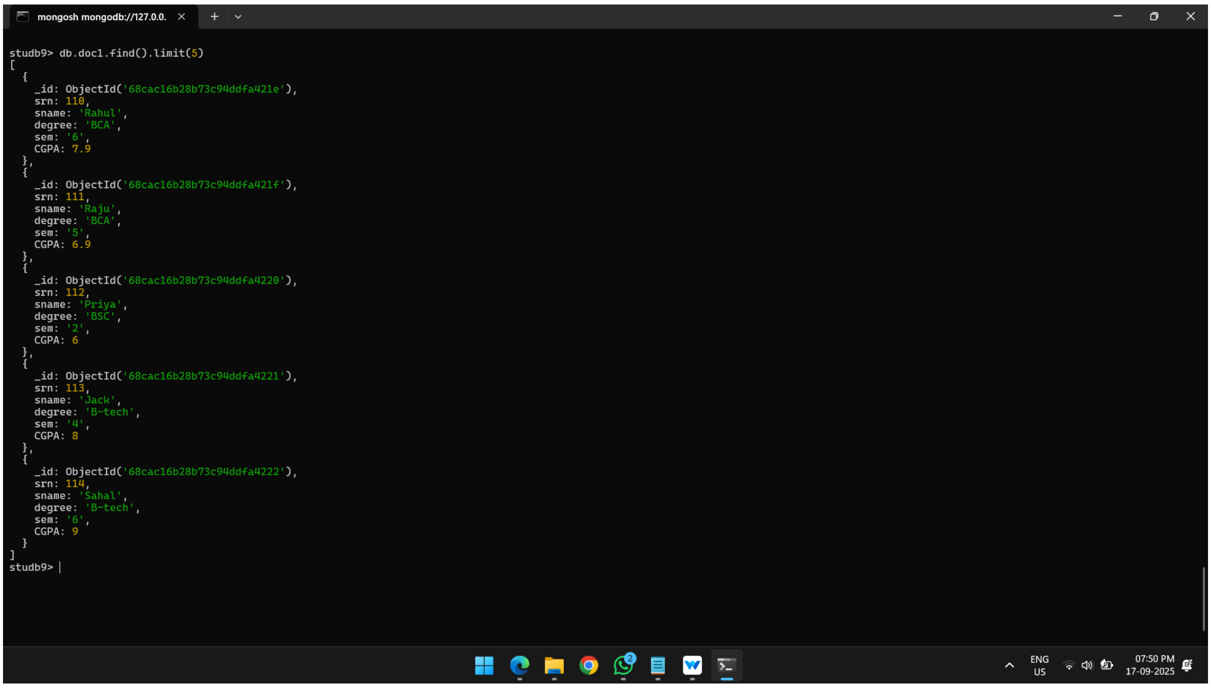
```
studb9> db.doc1.find().sort({sname: 1})
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa4226'),
    srn: 118,
    sname: 'Abhinaya',
    degree: 'BSC',
    sem: '6',
    CGPA: 6
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'Fida',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4221'),
    srn: 113,
    sname: 'Jack',
    degree: 'B-tech',
    sem: '4',
    CGPA: 8
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4220'),
    srn: 112,
    sname: 'Priya',
    degree: 'BSC',
    sem: '2',
    CGPA: 6
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
```

B.



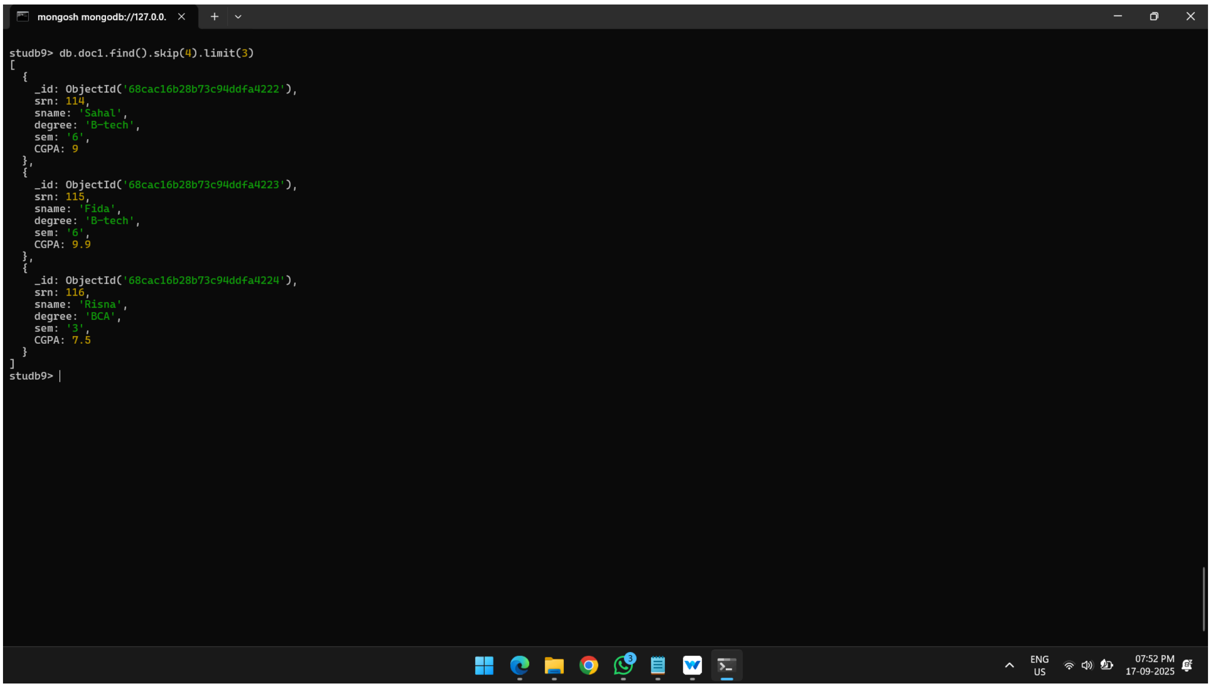
```
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4227'),
    srn: 119,
    sname: 'Sriya',
    degree: 'BCA',
    sem: '5',
    CGPA: 8.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4225'),
    srn: 117,
    sname: 'Yasir',
    degree: 'BCA',
    sem: '3',
    CGPA: 9.5
  }
]
studb9> |
```

4.Display first 5 students



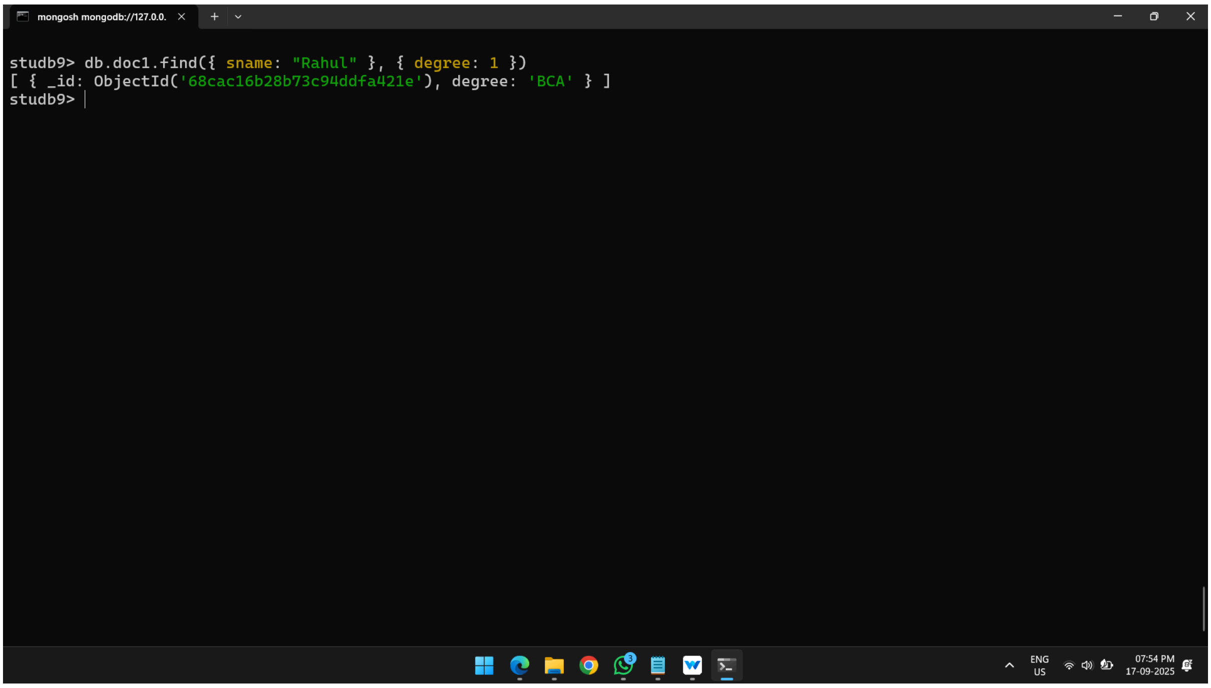
```
studb9> db.doc1.find().limit(5)
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4220'),
    srn: 112,
    sname: 'Priya',
    degree: 'BSC',
    sem: '2',
    CGPA: 6
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4221'),
    srn: 113,
    sname: 'Jack',
    degree: 'B-tech',
    sem: '4',
    CGPA: 8
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  }
]
studb9> |
```

5.display students 5,6,7



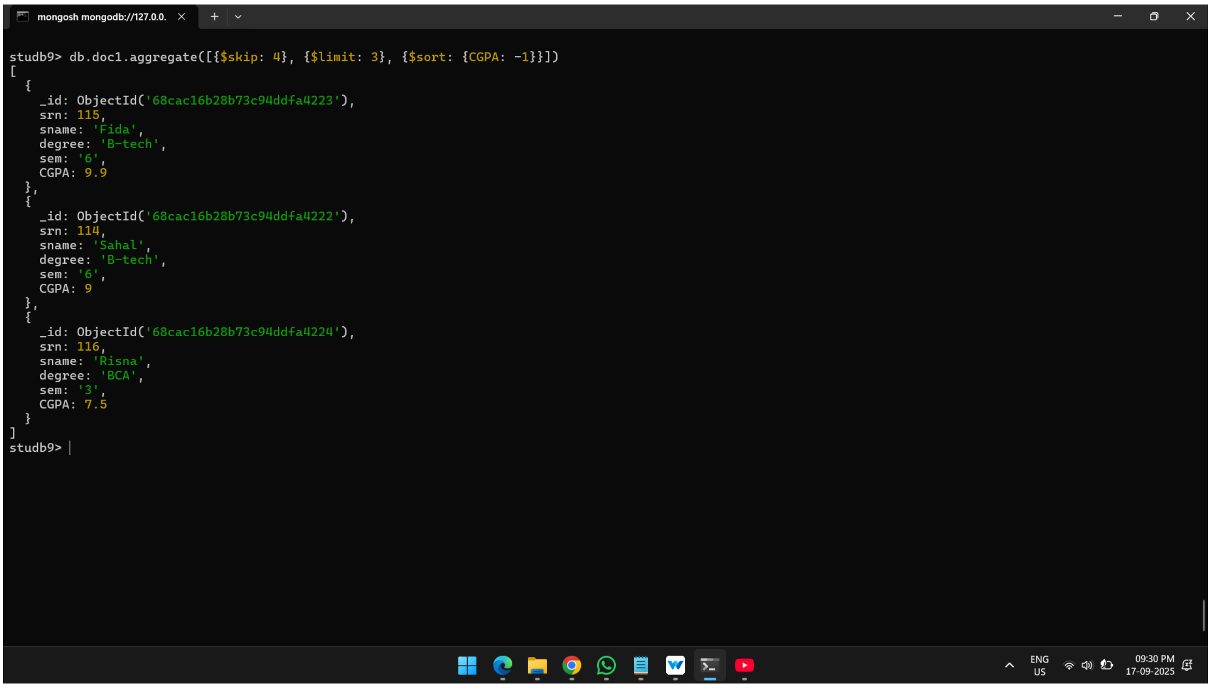
```
studb9> db.doc1.find().skip(4).limit(3)
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'Fida',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  }
]
studb9> |
```

6.list the degree of student "Rahul"



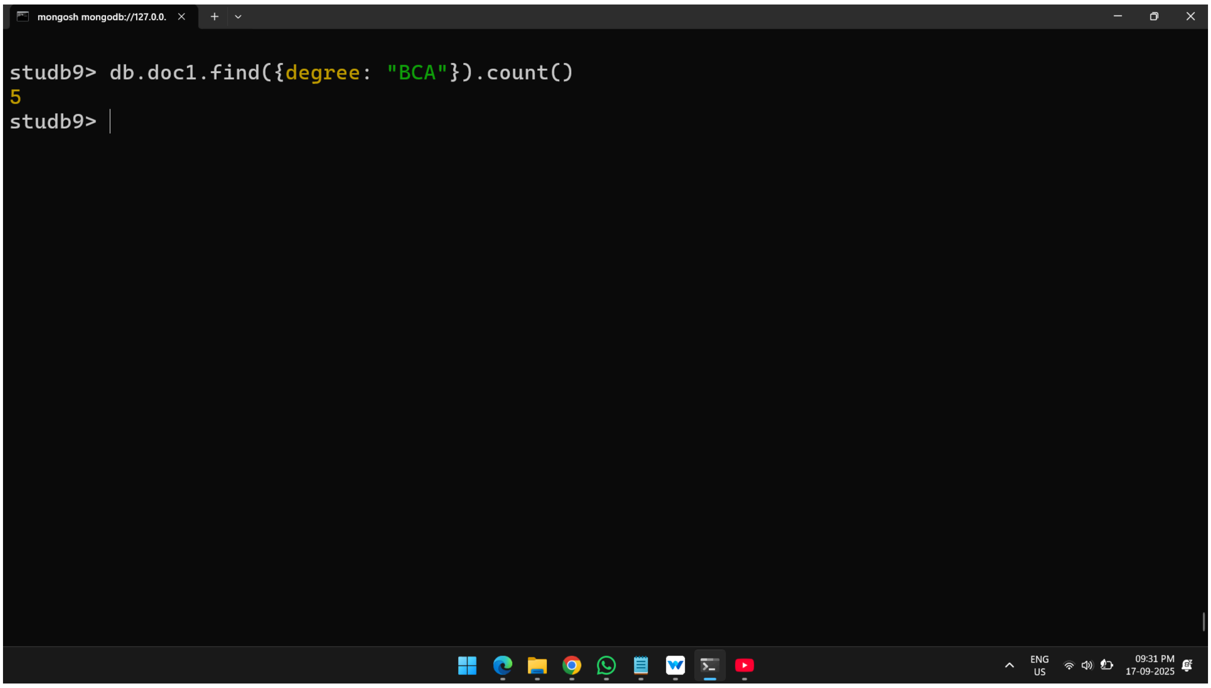
```
studb9> db.doc1.find({ sname: "Rahul" }, { degree: 1 })
[ { _id: ObjectId('68cac16b28b73c94ddfa421e'), degree: 'BCA' } ]
studb9> |
```

7.Display students details of 5,6,7 in descending order of percentage



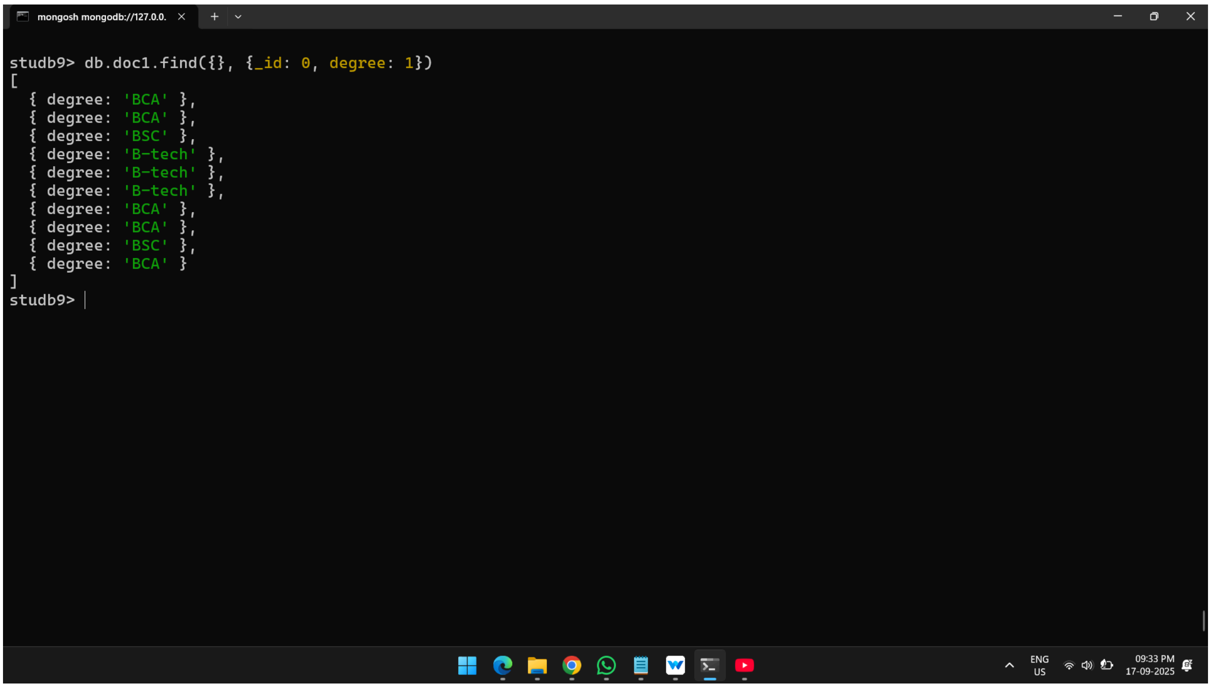
```
studb9> db.doc1.aggregate([{$skip: 4}, {$limit: 3}, {$sort: {CGPA: -1}}])
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'Fida',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  }
]
studb9>
```

8.Display the number of students in BCA



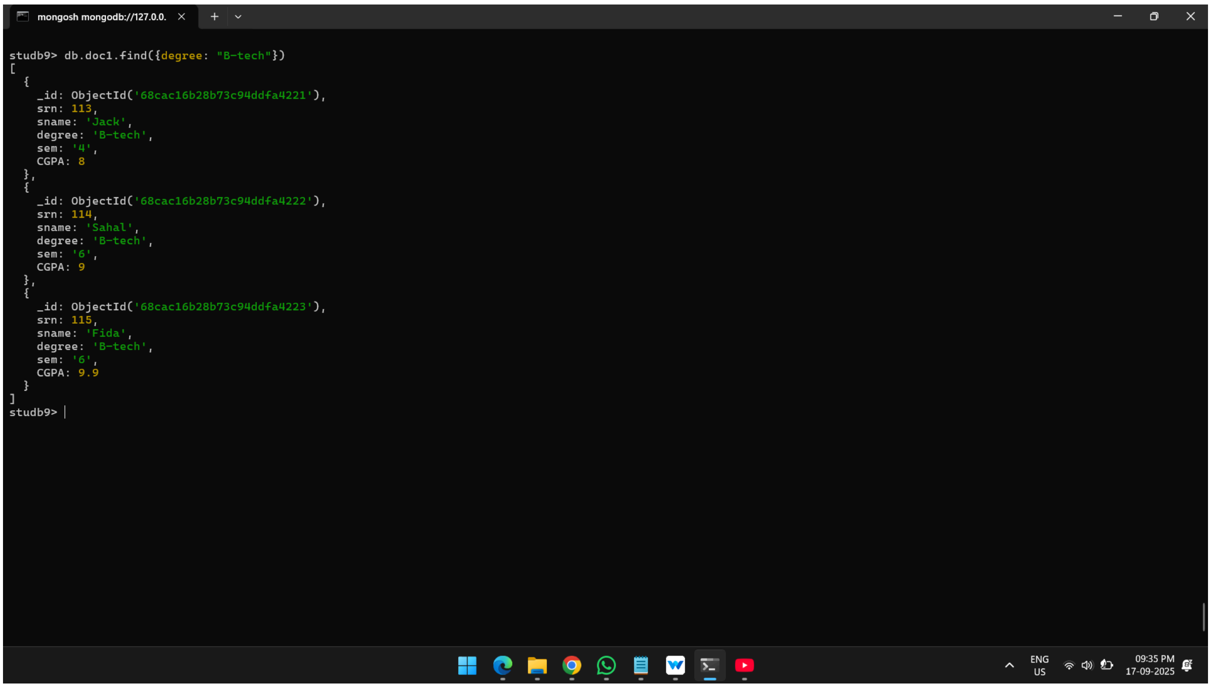
```
studb9> db.doc1.find({degree: "BCA"}).count()
5
studb9>
```

9.Display all the degrees without _id



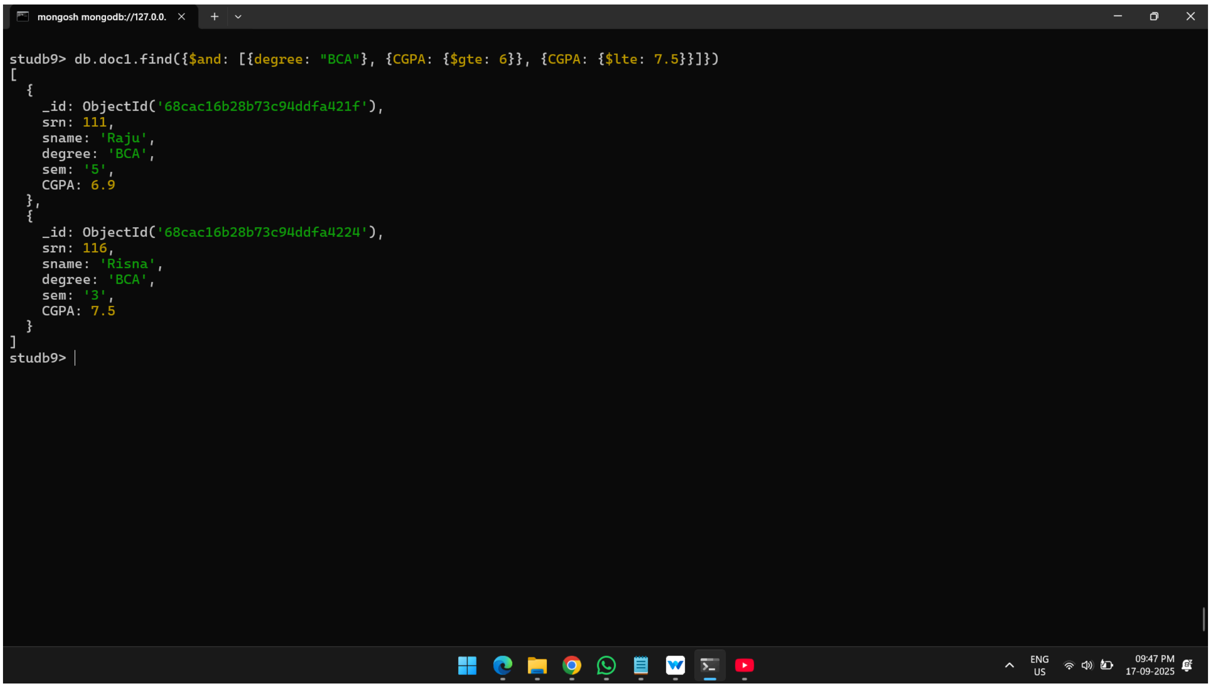
```
studb9> db.doc1.find({}, {_id: 0, degree: 1})
[
  { degree: 'BCA' },
  { degree: 'BCA' },
  { degree: 'BSC' },
  { degree: 'B-tech' },
  { degree: 'B-tech' },
  { degree: 'B-tech' },
  { degree: 'BCA' },
  { degree: 'BCA' },
  { degree: 'BSC' },
  { degree: 'BCA' }
]
studb9> 
```

10.Display all the distinct degrees



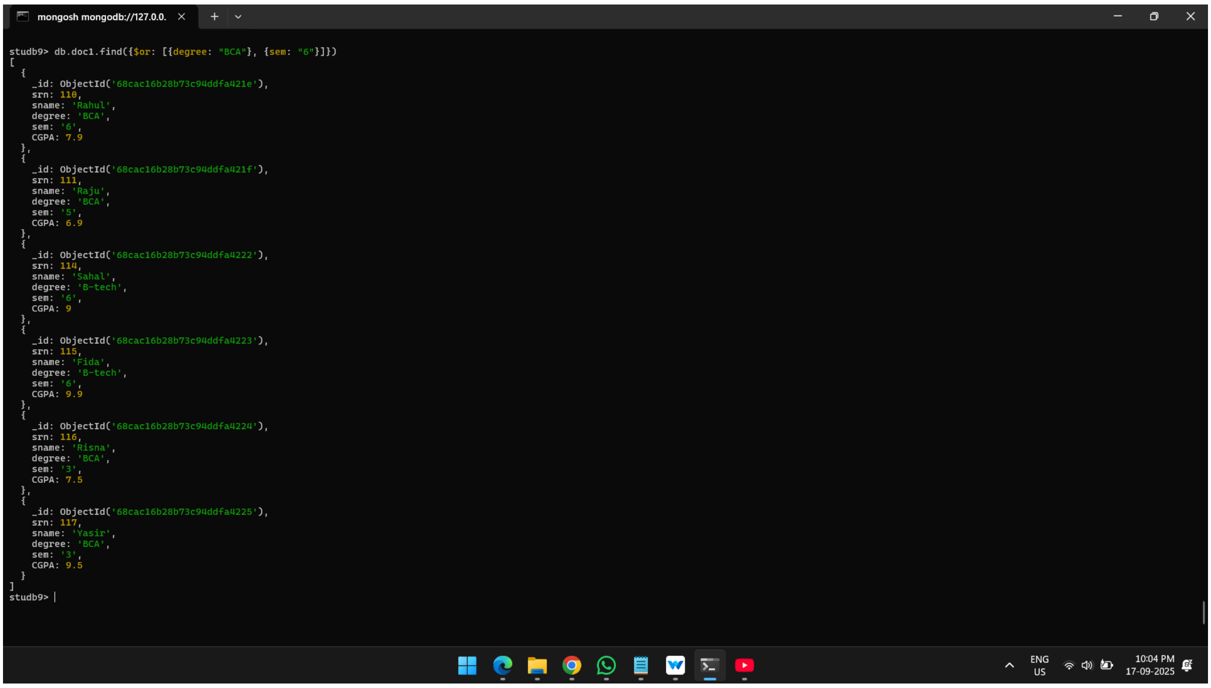
```
studb9> db.doc1.find({degree: "B-tech"})
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa4221'),
    srn: 113,
    sname: 'Jack',
    degree: 'B-tech',
    sem: '4',
    CGPA: 8
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'Fida',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9.9
  }
]
studb9> 
```

11.Display all the BCA students with CGPA greater than 6, but less than 7.5



```
studb9> db.doc1.find({$and: [{degree: "BCA"}, {CGPA: {$gte: 6}}, {CGPA: {$lte: 7.5}}]})
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  }
]
studb9> |
```

12.Display all the students in BCA and in 6th Sem

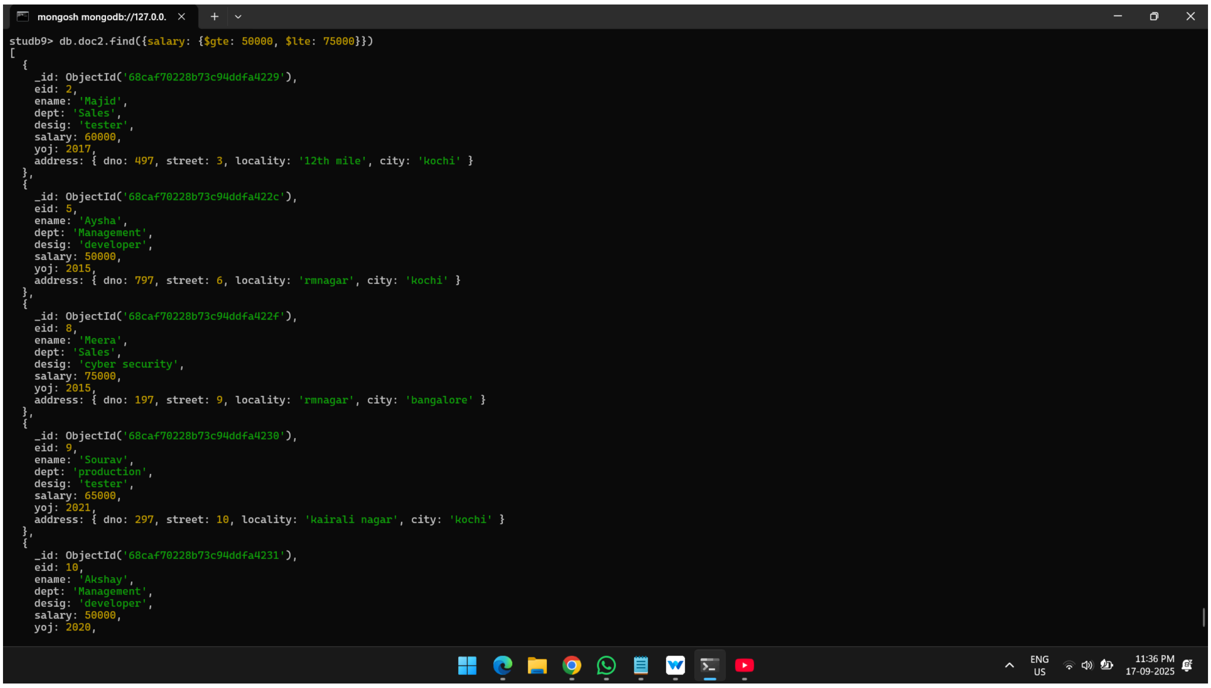


```
studb9> db.doc1.find({$or: [{degree: "BCA"}, {sem: "6"}]})
[
  {
    _id: ObjectId('68cac16b28b73c94ddfa421e'),
    srn: 110,
    sname: 'Rahul',
    degree: 'BCA',
    sem: '6',
    CGPA: 7.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa421f'),
    srn: 111,
    sname: 'Raju',
    degree: 'BCA',
    sem: '5',
    CGPA: 6.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4222'),
    srn: 114,
    sname: 'Sahal',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4223'),
    srn: 115,
    sname: 'Fida',
    degree: 'B-tech',
    sem: '6',
    CGPA: 9.9
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4224'),
    srn: 116,
    sname: 'Risna',
    degree: 'BCA',
    sem: '3',
    CGPA: 7.5
  },
  {
    _id: ObjectId('68cac16b28b73c94ddfa4225'),
    srn: 117,
    sname: 'Yasir',
    degree: 'BCA',
    sem: '3',
    CGPA: 9.5
  }
]
studb9> |
```

End of exercise 1

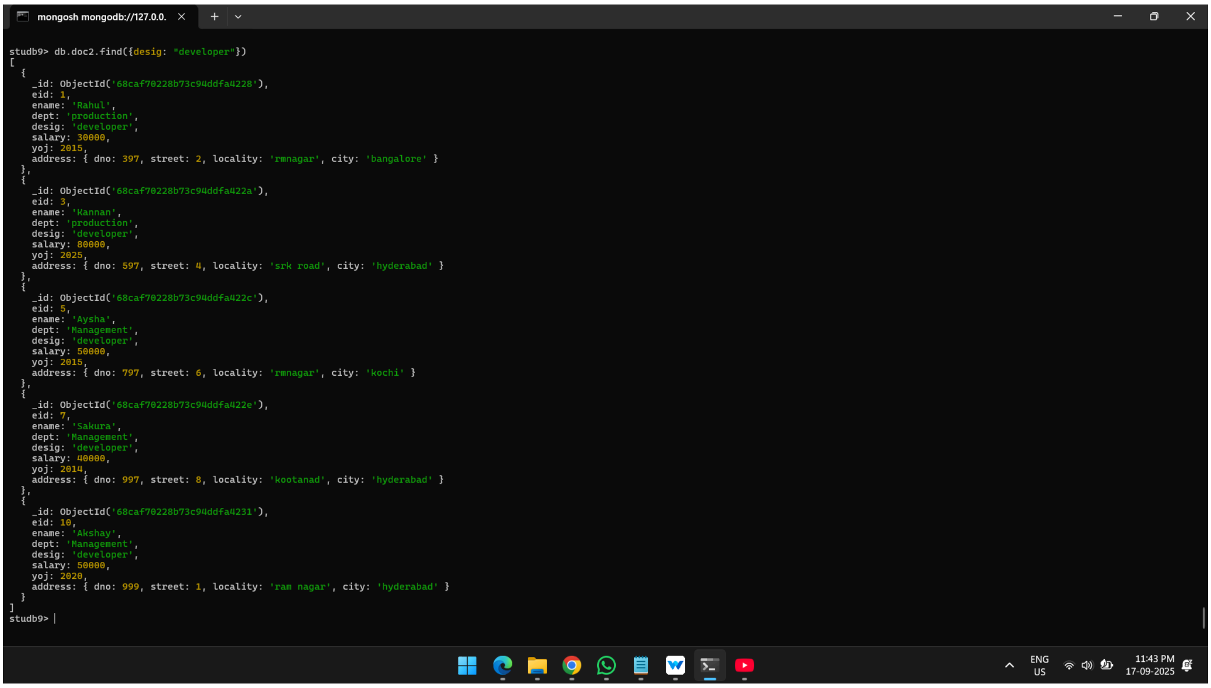
Exercise 2 - Employee Database

1.Display all the employees with salary in range (50000, 75000)



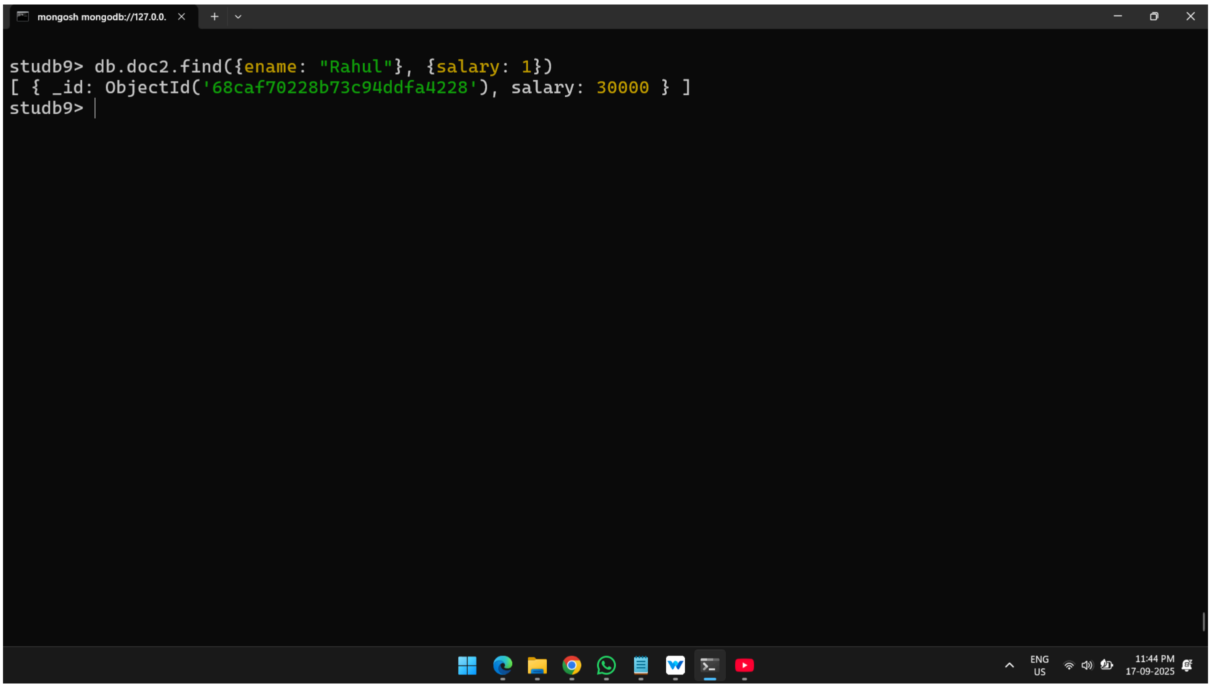
```
studb9> db.doc2.find({salary: {$gte: 50000, $lte: 75000}})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4229'),
    eid: 2,
    ename: 'Majid',
    dept: 'Sales',
    desig: 'tester',
    salary: 60000,
    yoj: 2017,
    address: { dno: 497, street: 3, locality: '12th mile', city: 'kochi' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422c'),
    eid: 5,
    ename: 'Aysha',
    dept: 'Management',
    desig: 'developer',
    salary: 50000,
    yoj: 2015,
    address: { dno: 797, street: 6, locality: 'rmnagar', city: 'kochi' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422f'),
    eid: 8,
    ename: 'Meera',
    dept: 'Sales',
    desig: 'cyber security',
    salary: 75000,
    yoj: 2015,
    address: { dno: 197, street: 9, locality: 'rmnagar', city: 'bangalore' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa4230'),
    eid: 9,
    ename: 'Sourav',
    dept: 'production',
    desig: 'tester',
    salary: 65000,
    yoj: 2021,
    address: { dno: 297, street: 10, locality: 'kairali nagar', city: 'kochi' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa4231'),
    eid: 10,
    ename: 'Akshay',
    dept: 'Management',
    desig: 'developer',
    salary: 50000,
    yoj: 2020,
```

2.Display all the employees with desig developer



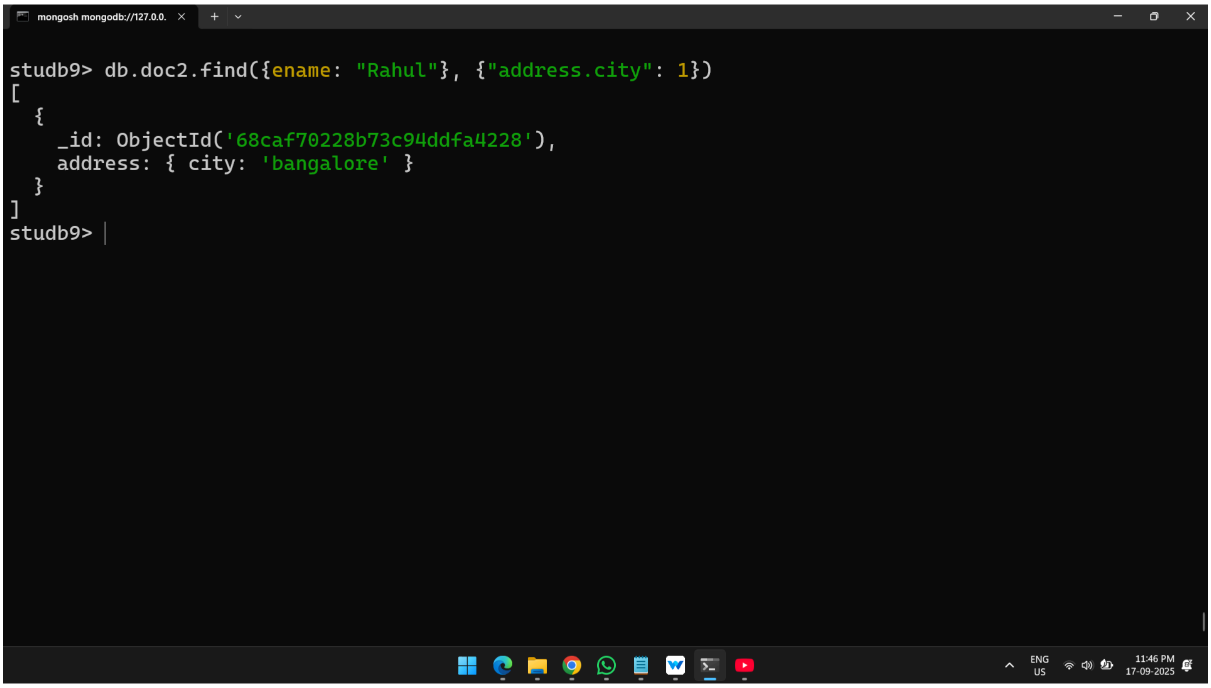
```
studb9> db.doc2.find({desig: "developer"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 30000,
    yoj: 2015,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422a'),
    eid: 3,
    ename: 'Kannan',
    dept: 'production',
    desig: 'developer',
    salary: 80000,
    yoj: 2025,
    address: { dno: 597, street: 4, locality: 'srk road', city: 'hyderabad' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422c'),
    eid: 5,
    ename: 'Aysha',
    dept: 'Management',
    desig: 'developer',
    salary: 50000,
    yoj: 2015,
    address: { dno: 797, street: 6, locality: 'rmnagar', city: 'kochi' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422e'),
    eid: 7,
    ename: 'Sakura',
    dept: 'Management',
    desig: 'developer',
    salary: 40000,
    yoj: 2014,
    address: { dno: 997, street: 8, locality: 'kootanad', city: 'hyderabad' }
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa4231'),
    eid: 10,
    ename: 'Akshay',
    dept: 'Management',
    desig: 'developer',
    salary: 50000,
    yoj: 2020,
    address: { dno: 999, street: 1, locality: 'ram nagar', city: 'hyderabad' }
  }
]
studb9> |
```

3.Display the Salary of “Rahul”



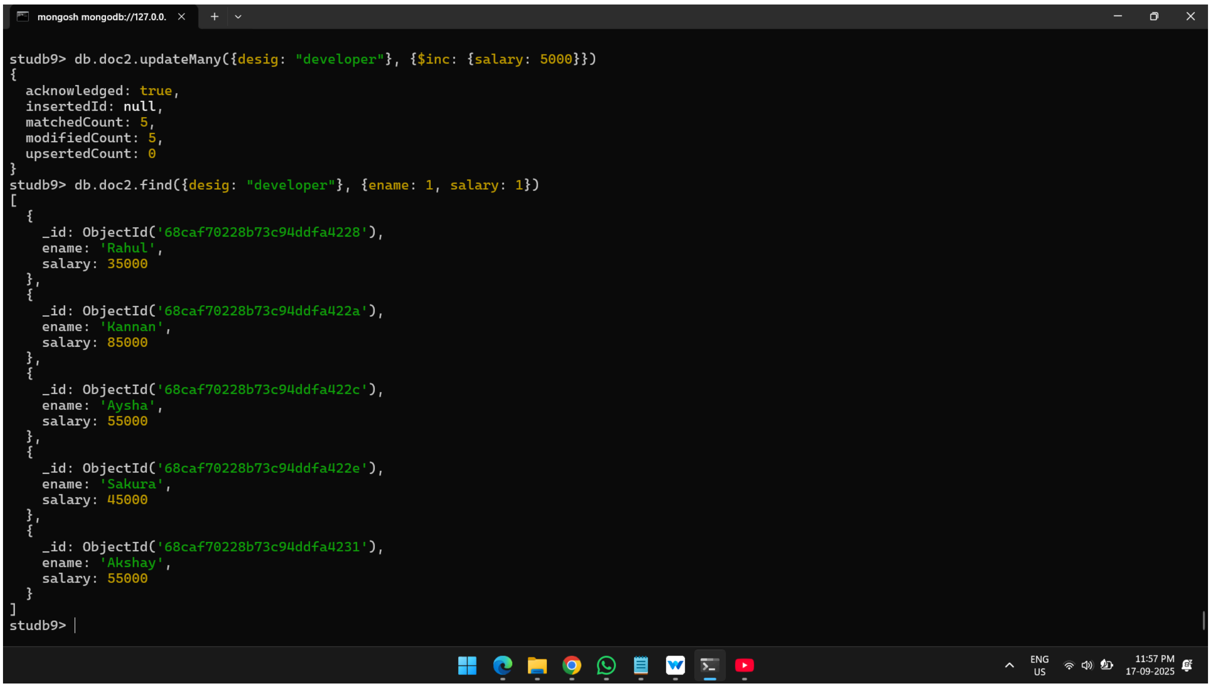
```
studb9> db.doc2.find({ename: "Rahul"}, {salary: 1})
[ { _id: ObjectId('68caf70228b73c94ddfa4228'), salary: 30000 } ]
studb9> 
```

4.Display the city of employee “Rahul”



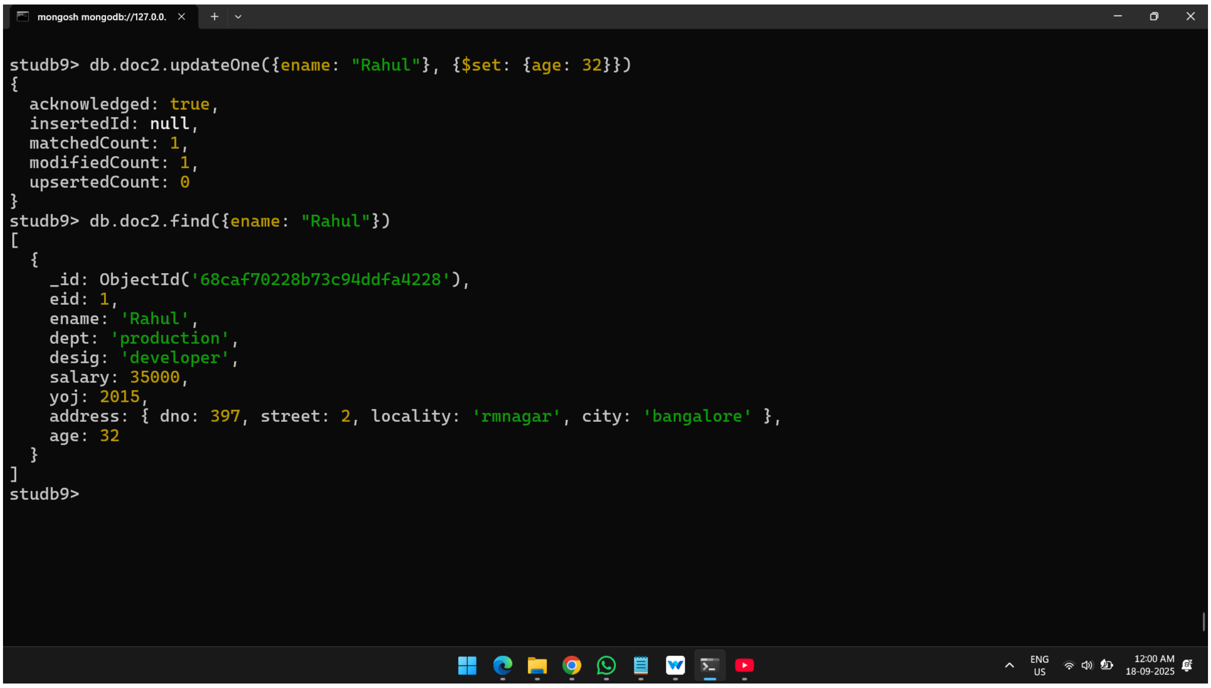
```
studb9> db.doc2.find({ename: "Rahul"}, {"address.city": 1})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    address: { city: 'bangalore' }
  }
]
studb9> 
```

5. Update the salary of developers by 5000 increment



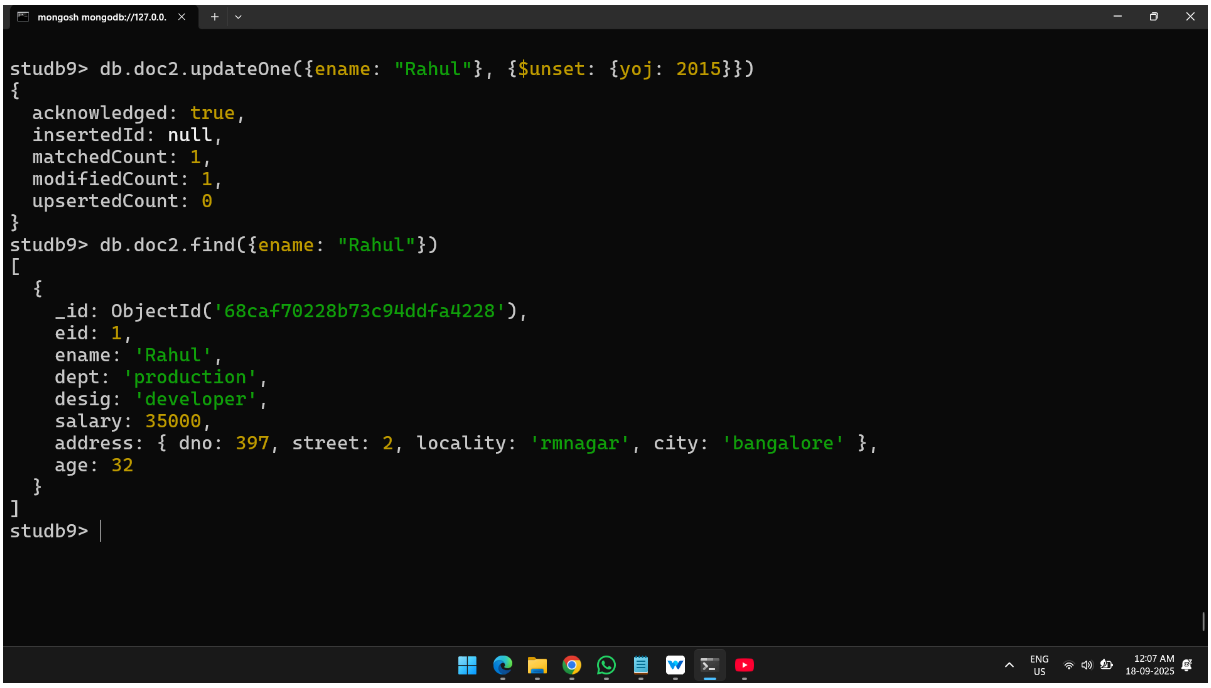
```
studb9> db.doc2.updateMany({desig: "developer"}, {$inc: {salary: 5000}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 5,
  modifiedCount: 5,
  upsertedCount: 0
}
studb9> db.doc2.find({desig: "developer"}, {ename: 1, salary: 1})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    ename: 'Rahul',
    salary: 35000
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422a'),
    ename: 'Kannan',
    salary: 85000
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422c'),
    ename: 'Aysha',
    salary: 55000
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa422e'),
    ename: 'Sakura',
    salary: 45000
  },
  {
    _id: ObjectId('68caf70228b73c94ddfa4231'),
    ename: 'Akshay',
    salary: 55000
  }
]
studb9>
```

6. Add field age to employee “Rahul”



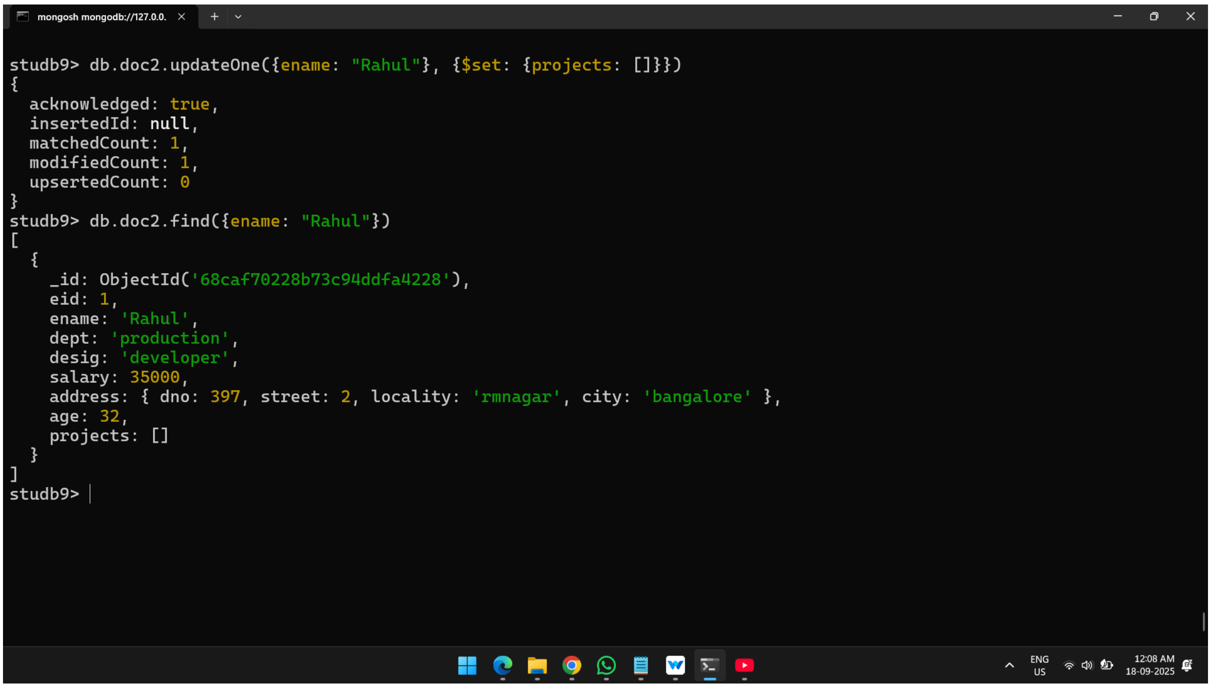
```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$set: {age: 32}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    yoj: 2015,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32
  }
]
studb9>
```

7. Remove YOJ from “Rahul”



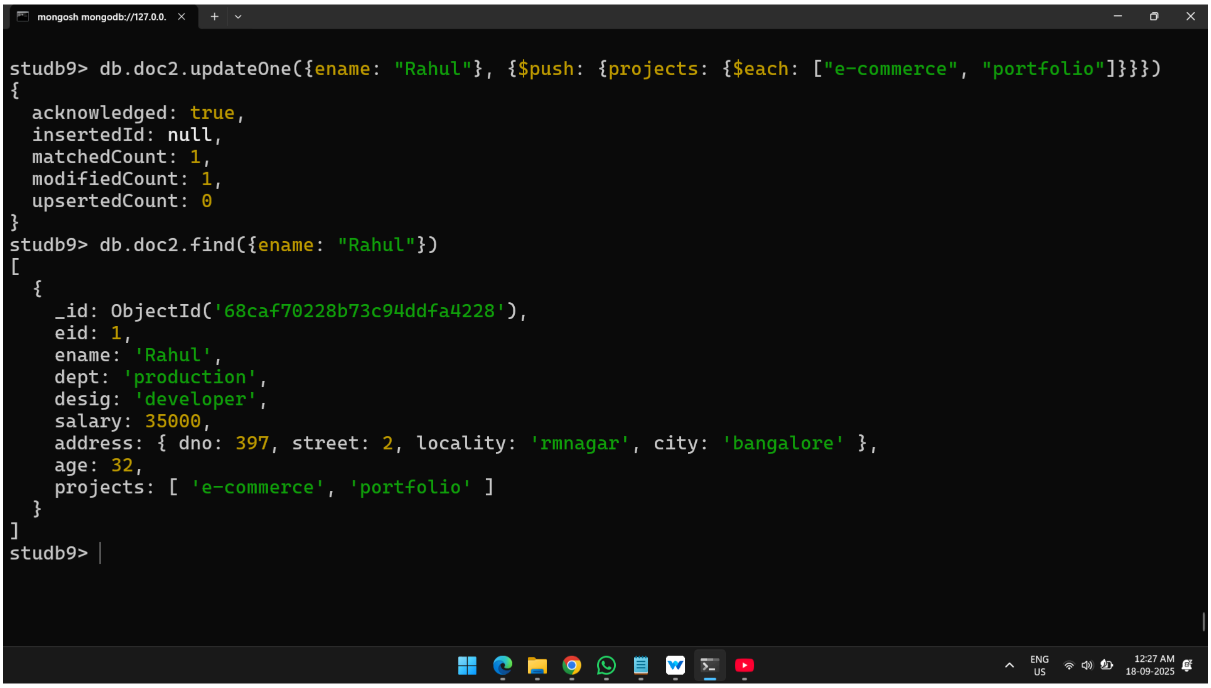
```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$unset: {yoj: 2015}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32
  }
]
studb9>
```

8. Add an array field project to “Rahul”



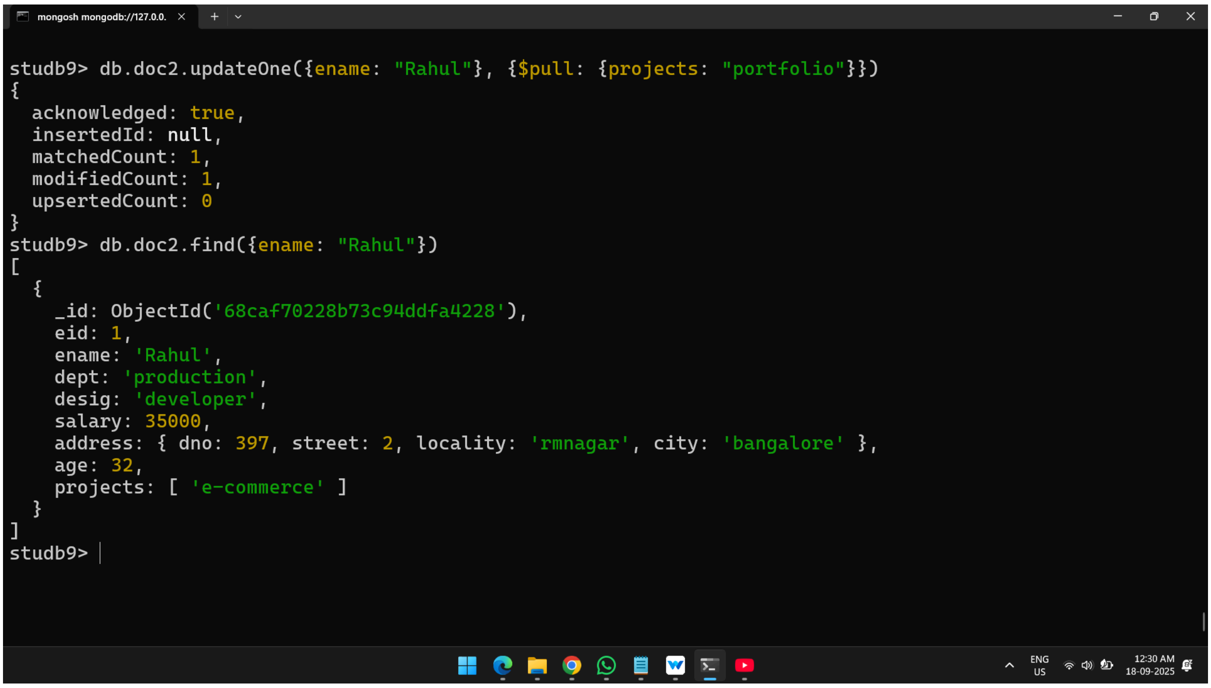
```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$set: {projects: []}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32,
    projects: []
  }
]
studb9>
```

9. Add p2 and p3 project to “Rahul”



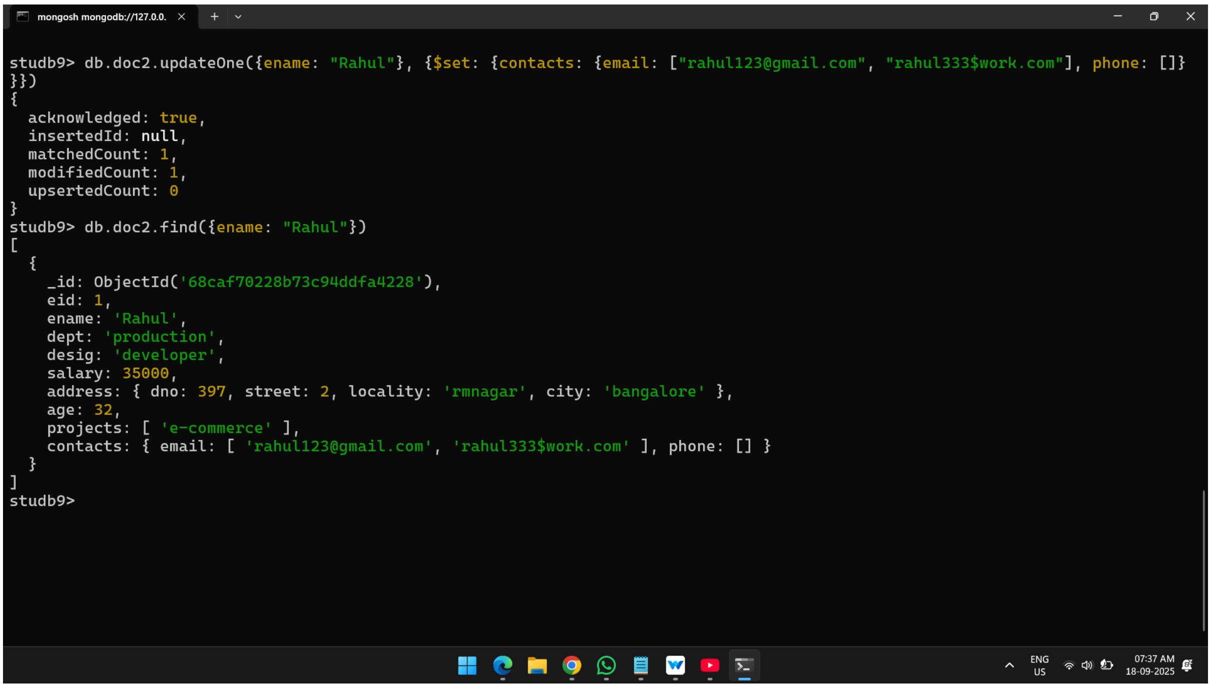
```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$push: {projects: {$each: ["e-commerce", "portfolio"]}}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32,
    projects: [ 'e-commerce', 'portfolio' ]
  }
]
studb9>
```

10. Remove p3 from “Rahul”



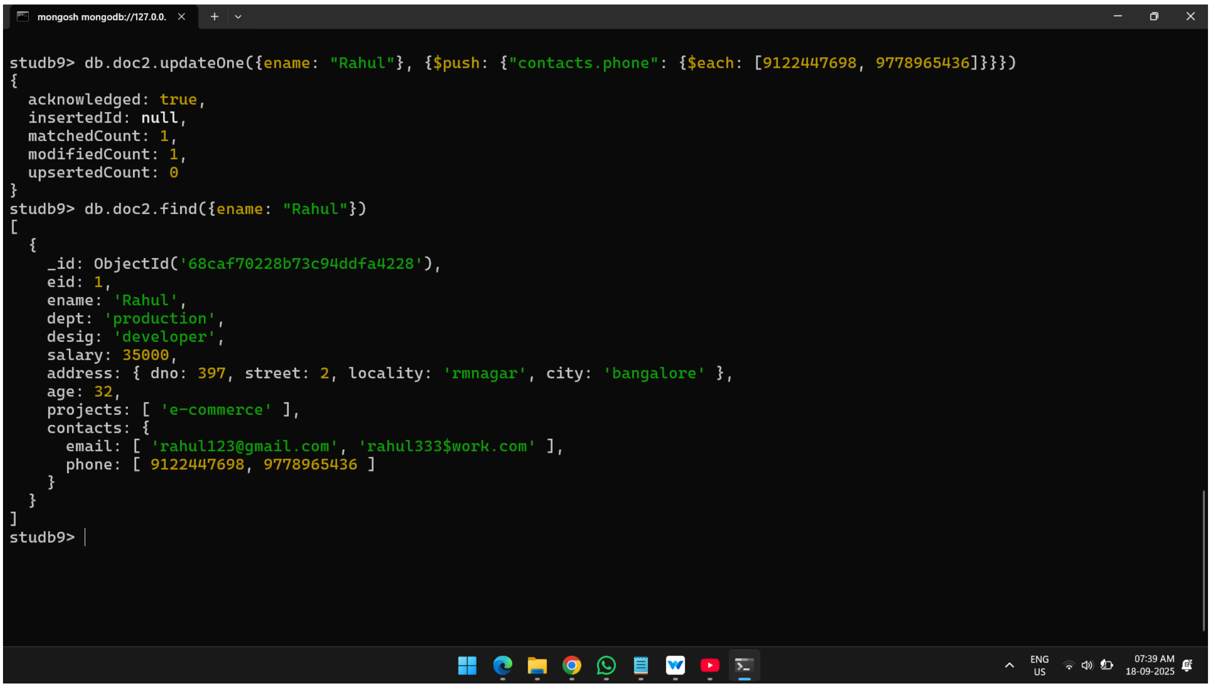
```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$pull: {projects: "portfolio"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32,
    projects: [ 'e-commerce' ]
  }
]
studb9>
```

11. Add a new embedded object “contacts” with “email” and “phone” as array objects to “Rahul”



```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$set: {contacts: {email: ["rahul123@gmail.com", "rahul333$work.com"], phone: []}
}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32,
    projects: [ 'e-commerce' ],
    contacts: { email: [ 'rahul123@gmail.com', 'rahul333$work.com' ], phone: [] }
  }
]
studb9>
```

12. Add two phone numbers to “Rahul”

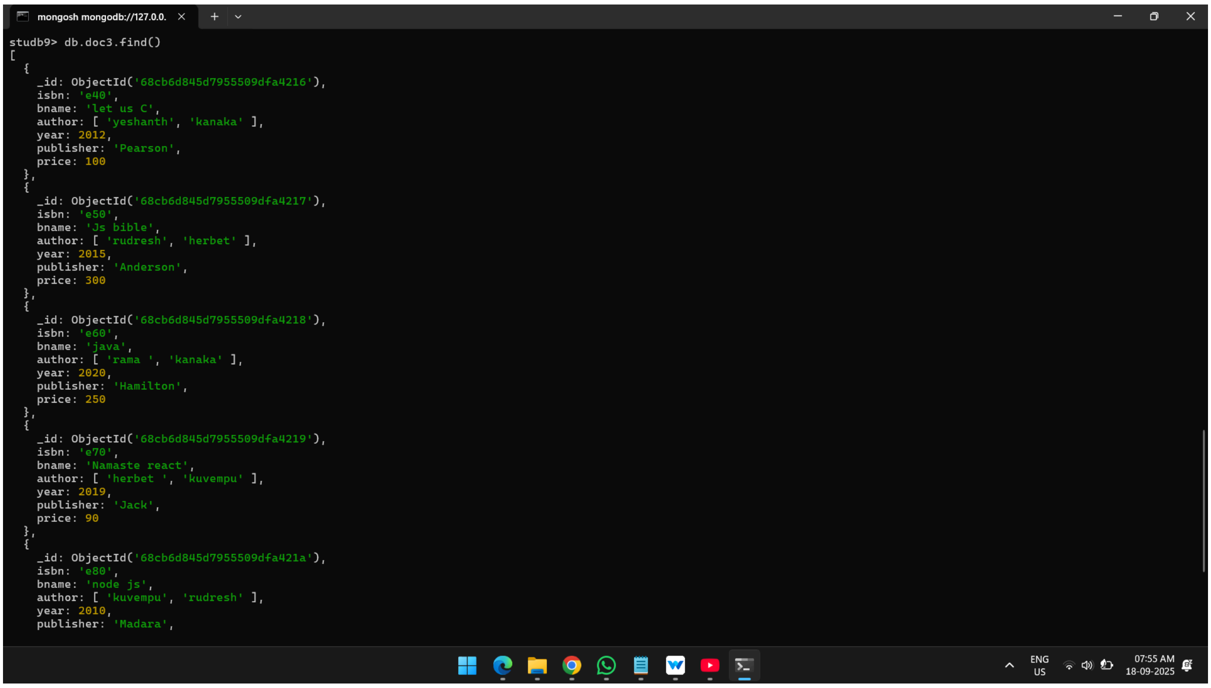


```
studb9> db.doc2.updateOne({ename: "Rahul"}, {$push: {"contacts.phone": {$each: [9122447698, 9778965436]}}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc2.find({ename: "Rahul"})
[
  {
    _id: ObjectId('68caf70228b73c94ddfa4228'),
    eid: 1,
    ename: 'Rahul',
    dept: 'production',
    desig: 'developer',
    salary: 35000,
    address: { dno: 397, street: 2, locality: 'rmnagar', city: 'bangalore' },
    age: 32,
    projects: [ 'e-commerce' ],
    contacts: {
      email: [ 'rahul123@gmail.com', 'rahul333$work.com' ],
      phone: [ 9122447698, 9778965436 ]
    }
  }
]
studb9>
```

End of Exercise 2

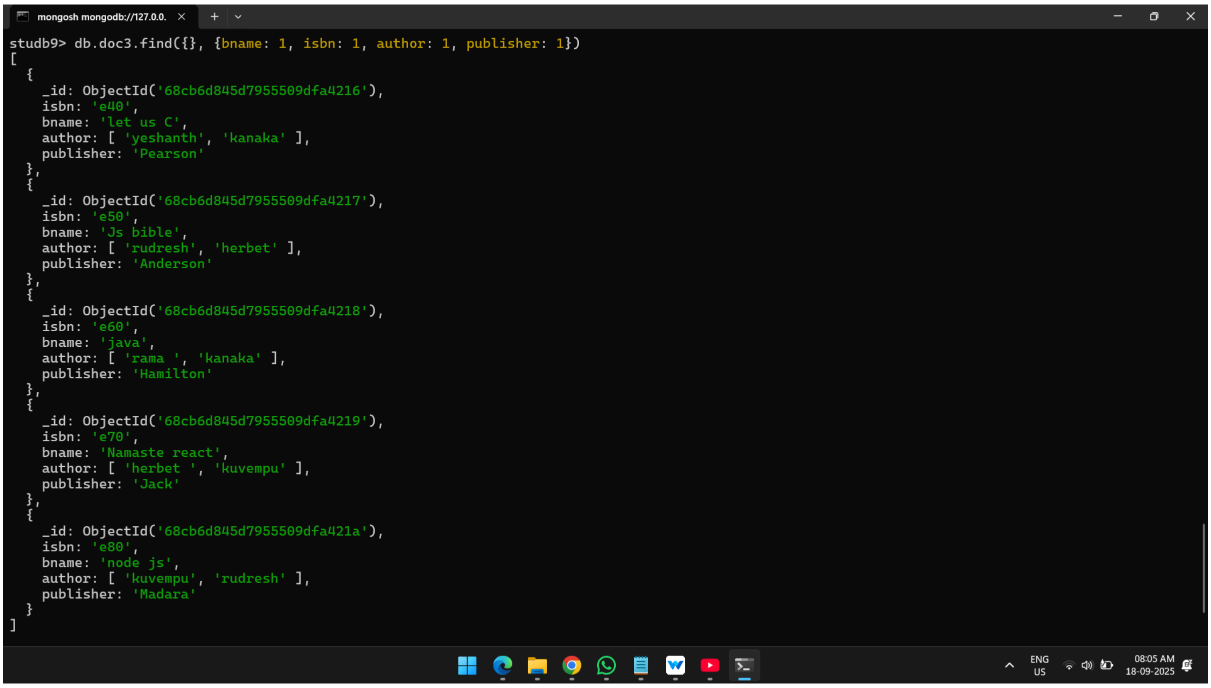
Exercise 3 - Book Database

1. list all the documents.



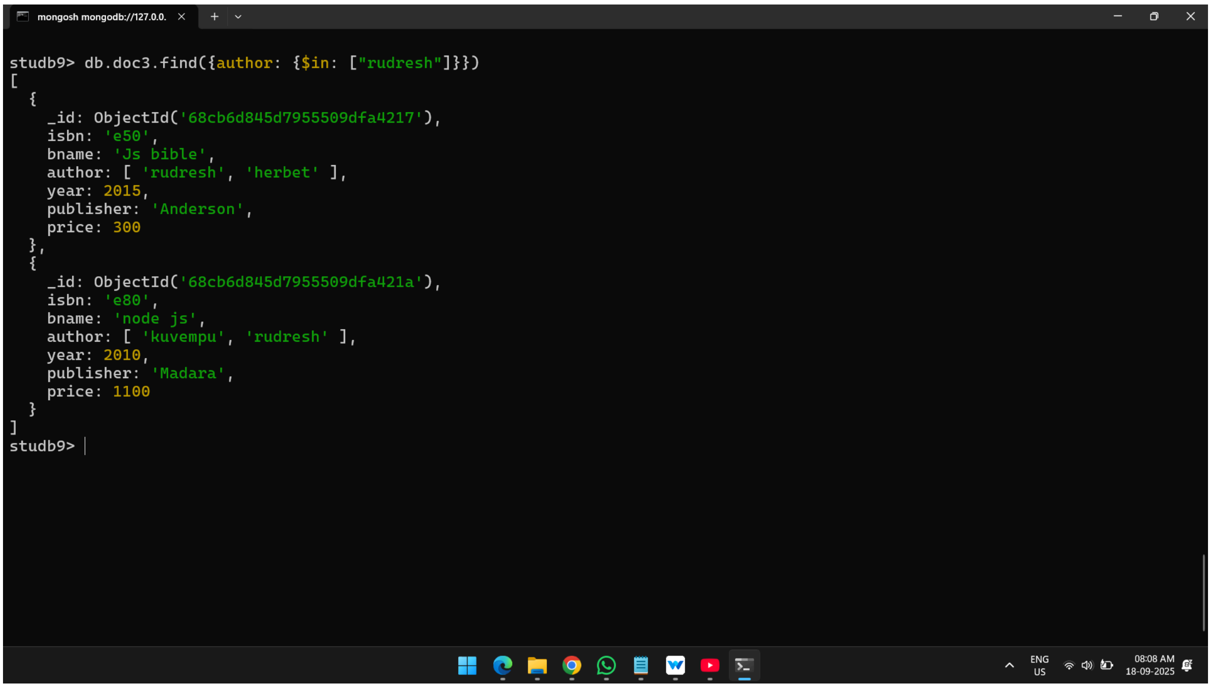
```
studb9> db.doc3.find()
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4216'),
    isbn: 'e40',
    bname: 'let us C',
    author: [ 'yeshanth', 'kanaka' ],
    year: 2012,
    publisher: 'Pearson',
    price: 100
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'Js bible',
    author: [ 'rudresh', 'herbet' ],
    year: 2015,
    publisher: 'Anderson',
    price: 300
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4218'),
    isbn: 'e60',
    bname: 'java',
    author: [ 'rama ', 'kanaka' ],
    year: 2020,
    publisher: 'Hamilton',
    price: 250
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4219'),
    isbn: 'e70',
    bname: 'Namaste react',
    author: [ 'herbet ', 'kuvempu' ],
    year: 2019,
    publisher: 'Jack',
    price: 90
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    year: 2010,
    publisher: 'Madara',
```

2. list all the book name except year and price.



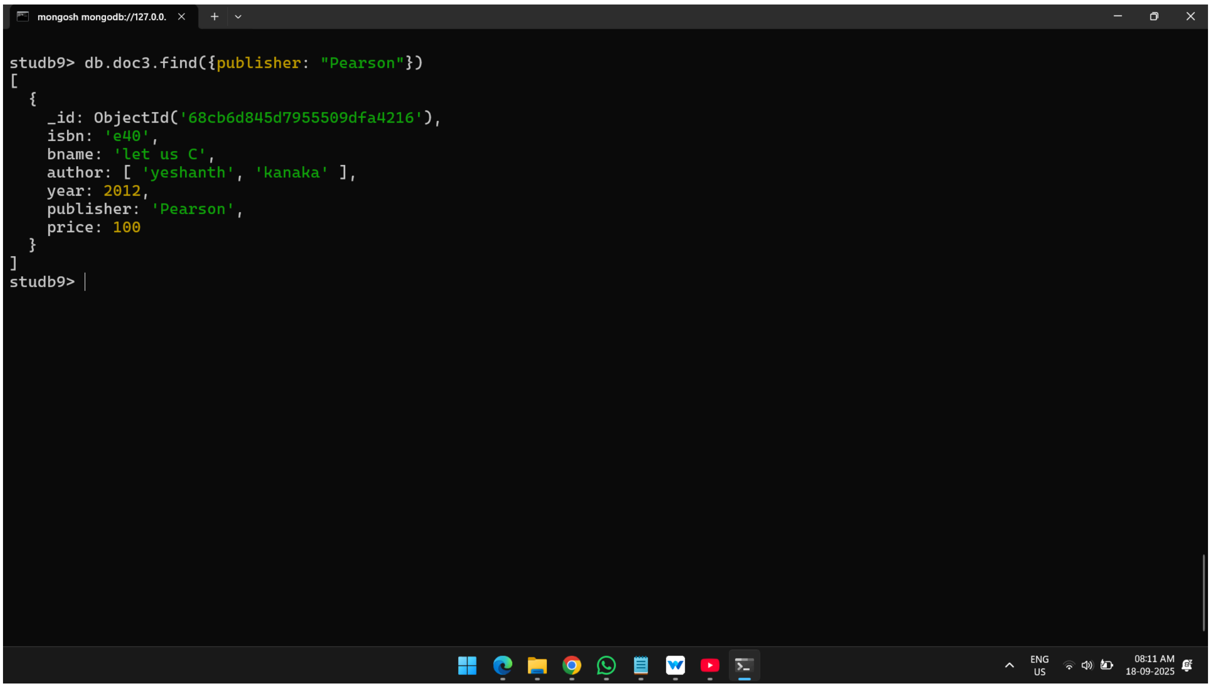
```
studb9> db.doc3.find({}, {bname: 1, isbn: 1, author: 1, publisher: 1})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4216'),
    isbn: 'e40',
    bname: 'let us C',
    author: [ 'yeshanth', 'kanaka' ],
    publisher: 'Pearson'
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'Js bible',
    author: [ 'rudresh', 'herbet' ],
    publisher: 'Anderson'
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4218'),
    isbn: 'e60',
    bname: 'java',
    author: [ 'rama ', 'kanaka' ],
    publisher: 'Hamilton'
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4219'),
    isbn: 'e70',
    bname: 'Namaste react',
    author: [ 'herbet ', 'kuvempu' ],
    publisher: 'Jack'
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    publisher: 'Madara'
  }
]
```

3.display all the books authored by rudresh



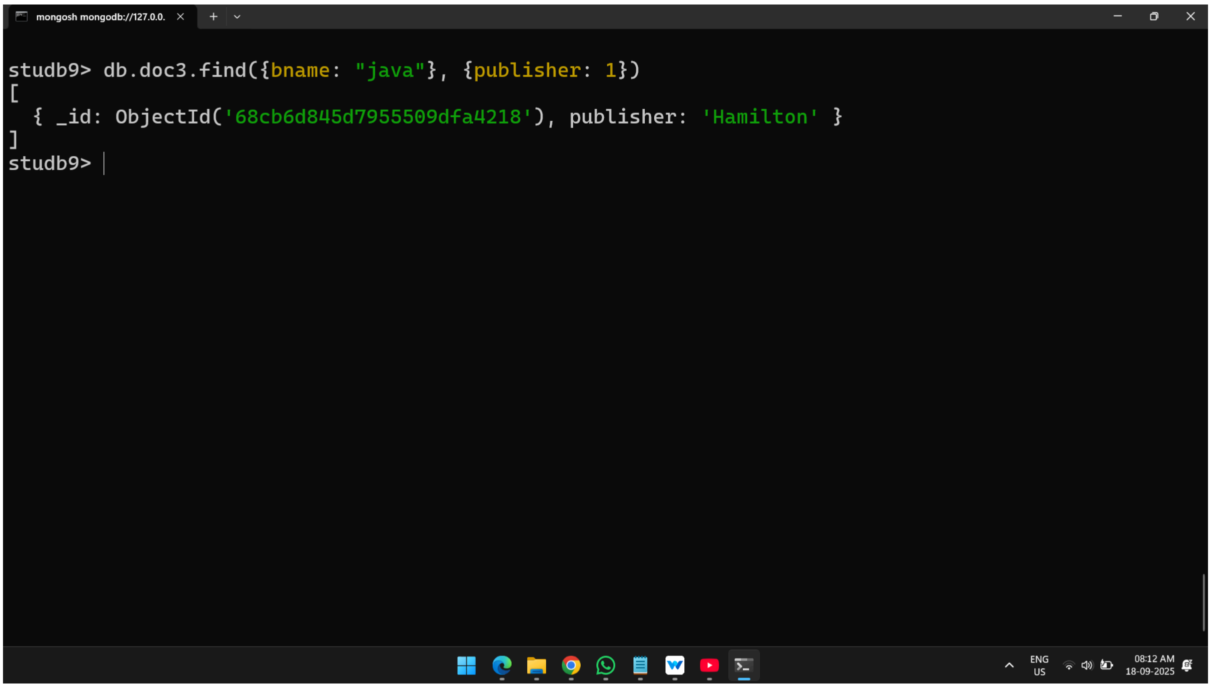
```
studb9> db.doc3.find({author: {$in: ["rudresh"]}})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'Js bible',
    author: [ 'rudresh', 'herbet' ],
    year: 2015,
    publisher: 'Anderson',
    price: 300
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    year: 2010,
    publisher: 'Madara',
    price: 1100
  }
]
studb9>
```

4.list all the books published by pearson



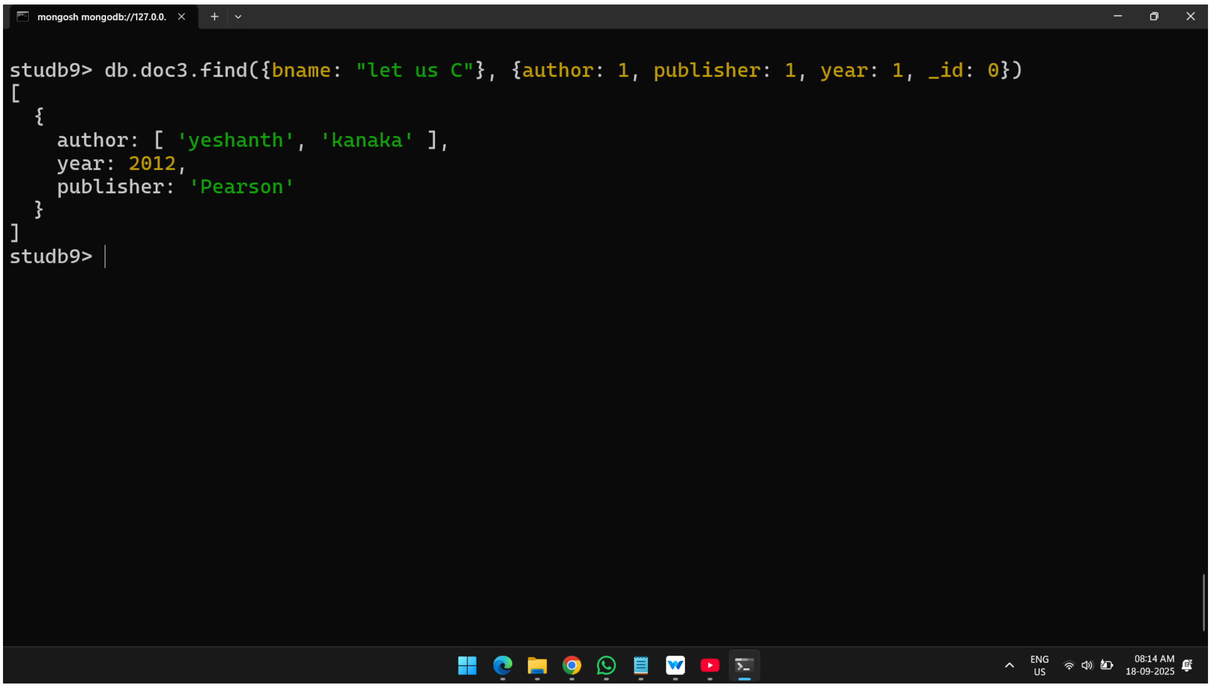
```
studb9> db.doc3.find({publisher: "Pearson"})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4216'),
    isbn: 'e40',
    bname: 'let us C',
    author: [ 'yeshanth', 'kanaka' ],
    year: 2012,
    publisher: 'Pearson',
    price: 100
  }
]
studb9>
```

5.list the publisher of book java



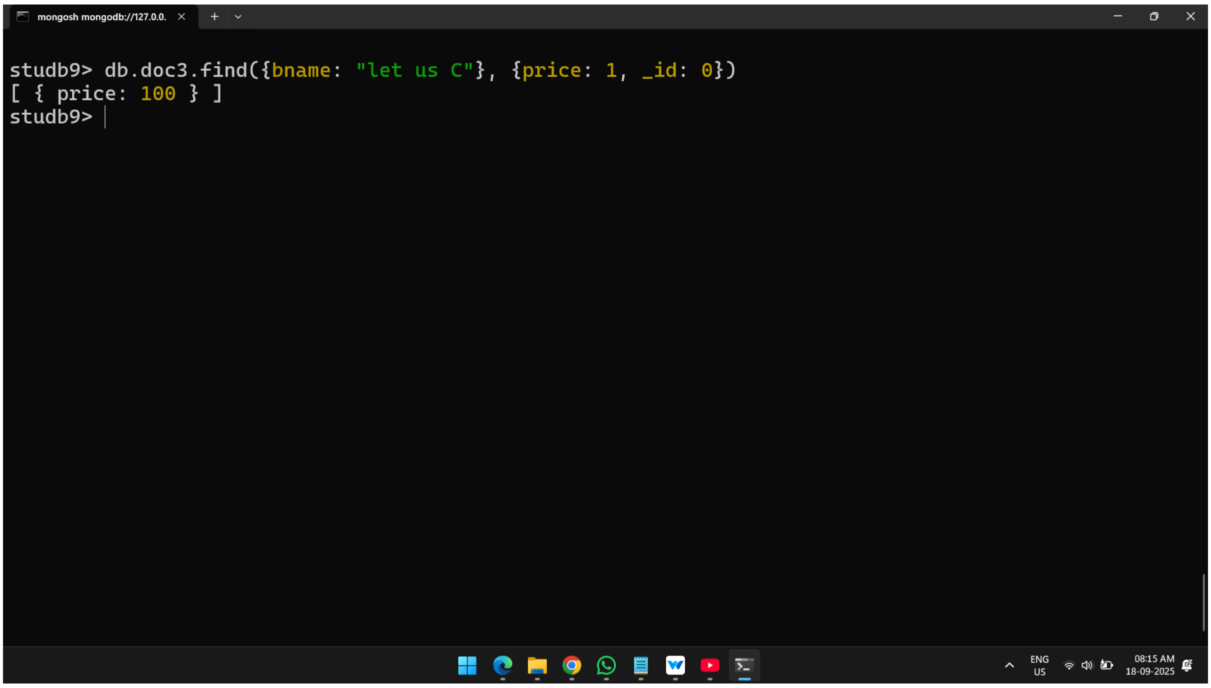
```
studb9> db.doc3.find({bname: "java"}, {publisher: 1})
[
  { _id: ObjectId('68cb6d845d7955509dfa4218'), publisher: 'Hamilton' }
]
studb9>
```

6.list the author,publisher and year of the book let us see.



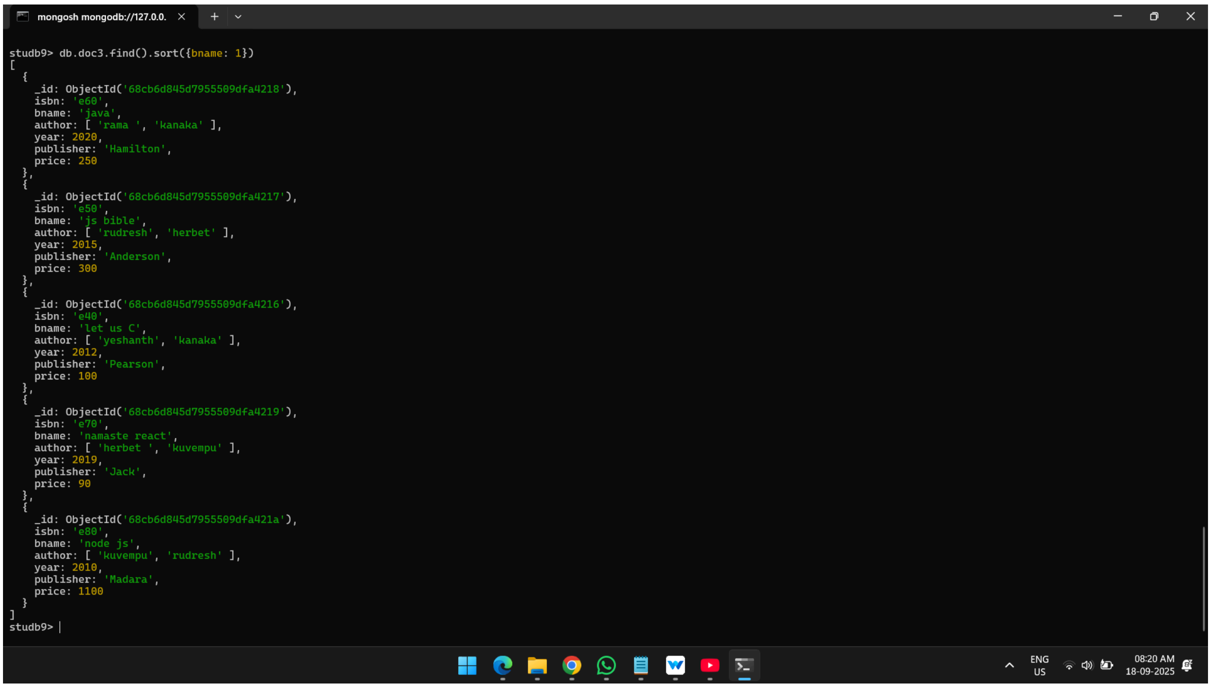
```
studb9> db.doc3.find({bname: "let us C"}, {author: 1, publisher: 1, year: 1, _id: 0})
[
  {
    author: [ 'yeshanth', 'kanaka' ],
    year: 2012,
    publisher: 'Pearson'
  }
]
studb9>
```

7.Display the price of “let us see” except _id



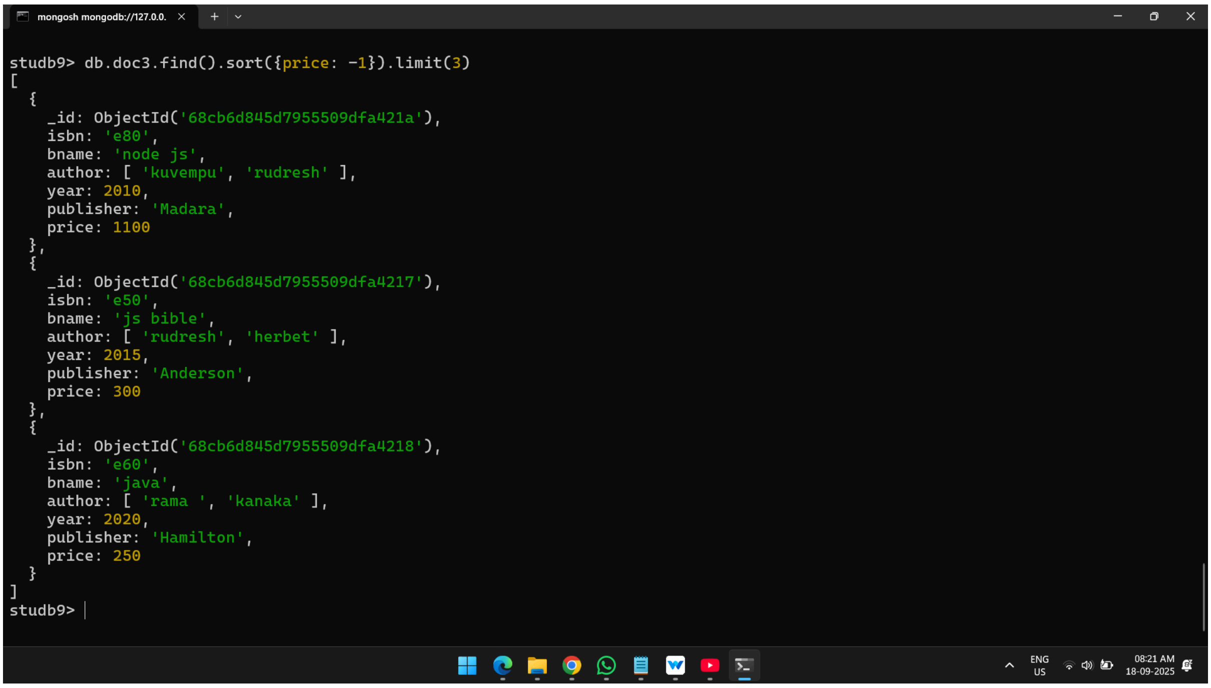
```
studb9> db.doc3.find({bname: "let us C"}, {price: 1, _id: 0})
[ { price: 100 } ]
studb9> 
```

8.sort and display all books in ascending order of book names



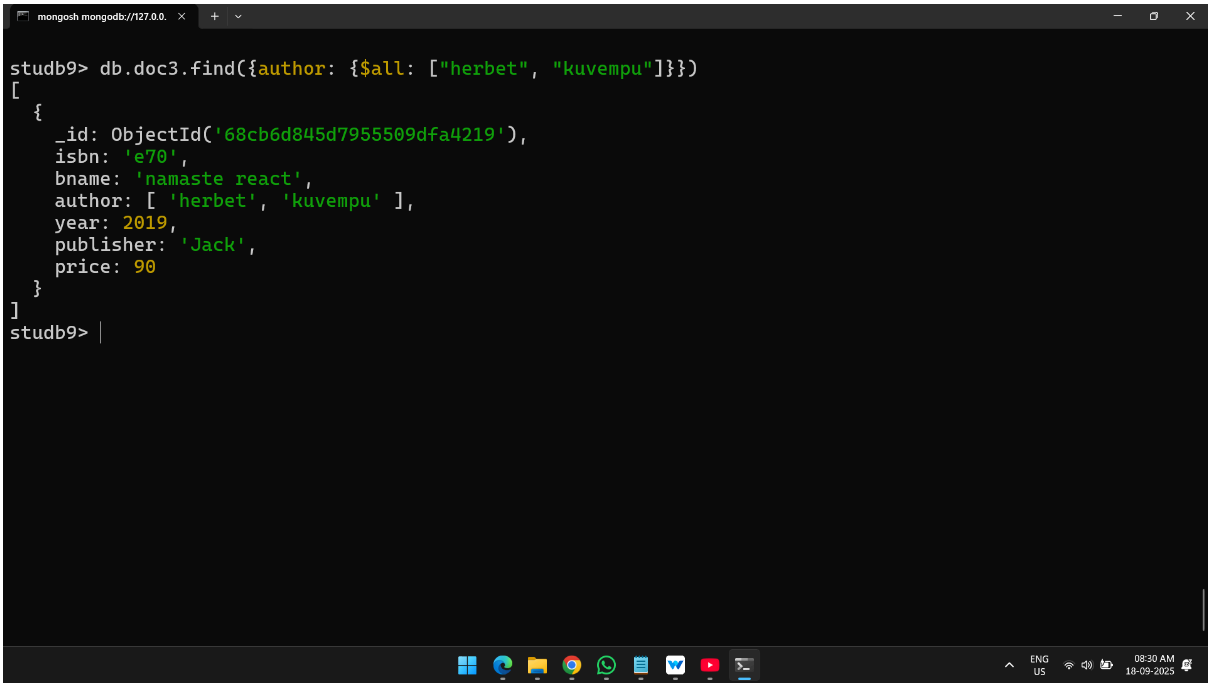
```
studb9> db.doc3.find().sort({bname: 1})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4218'),
    isbn: 'e60',
    bname: 'java',
    author: [ 'rama ', 'kanaka' ],
    year: 2020,
    publisher: 'Hamilton',
    price: 250
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'js bible',
    author: [ 'rudresh', 'herbet' ],
    year: 2015,
    publisher: 'Anderson',
    price: 300
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4216'),
    isbn: 'e40',
    bname: 'let us C',
    author: [ 'yeshanth', 'kanaka' ],
    year: 2012,
    publisher: 'Pearson',
    price: 100
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4219'),
    isbn: 'e70',
    bname: 'namaste react',
    author: [ 'herbet ', 'kuvempu' ],
    year: 2019,
    publisher: 'Jack',
    price: 90
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    year: 2010,
    publisher: 'Madara',
    price: 1100
  }
]
studb9> 
```

9.sort and display only 3 books in descending order of price.



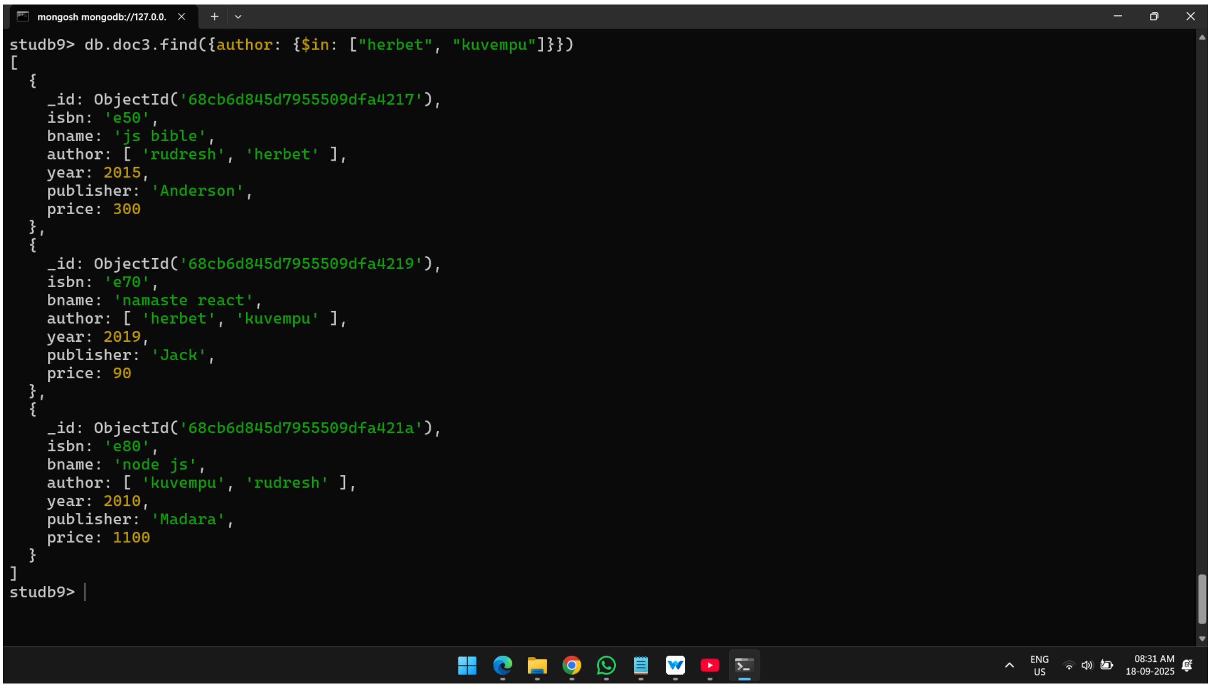
```
studb9> db.doc3.find().sort({price: -1}).limit(3)
[
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    year: 2010,
    publisher: 'Madara',
    price: 1100
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'js bible',
    author: [ 'rudresh', 'herbet' ],
    year: 2015,
    publisher: 'Anderson',
    price: 300
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4218'),
    isbn: 'e60',
    bname: 'java',
    author: [ 'rama ', 'kanaka' ],
    year: 2020,
    publisher: 'Hamilton',
    price: 250
  }
]
studb9>
```

10.Display all the books written by herbet and kuvempu



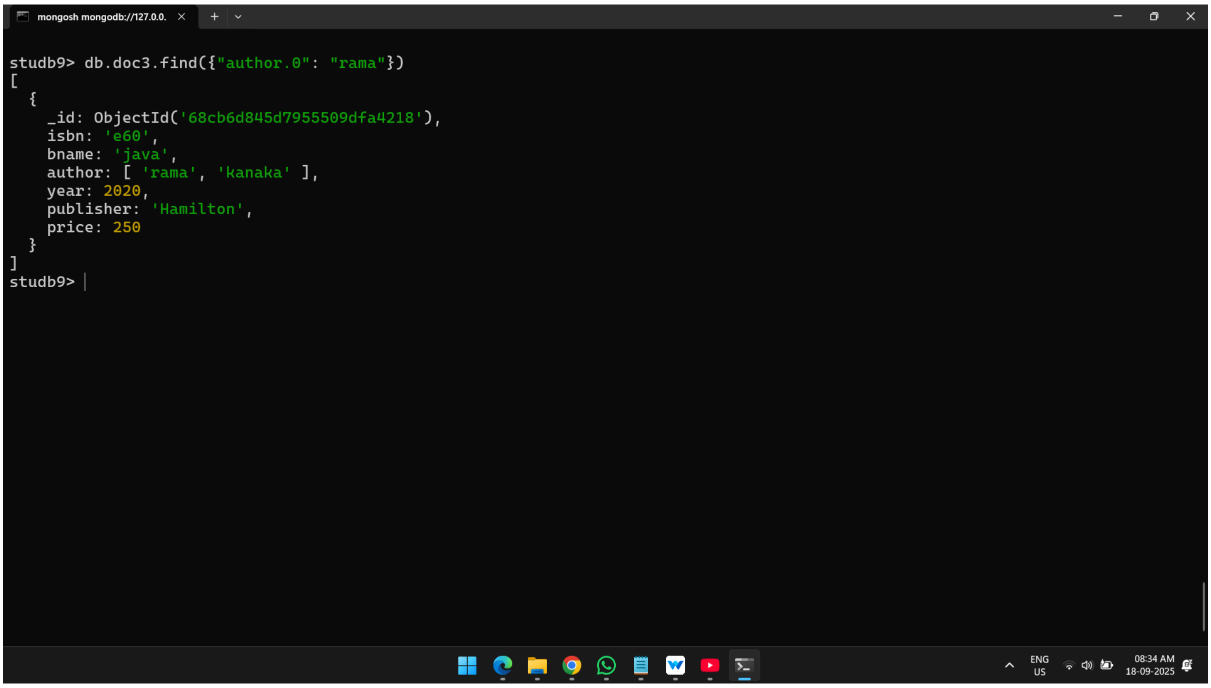
```
studb9> db.doc3.find({author: {$all: ["herbet", "kuvempu"]}})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4219'),
    isbn: 'e70',
    bname: 'namaste react',
    author: [ 'herbet', 'kuvempu' ],
    year: 2019,
    publisher: 'Jack',
    price: 90
  }
]
studb9>
```

11. Display all the books either written by herbet and kuvempu



```
studb9> db.doc3.find({author: {$in: ["herbet", "kuvempu"]}})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4217'),
    isbn: 'e50',
    bname: 'js bible',
    author: [ 'rudresh', 'herbet' ],
    year: 2015,
    publisher: 'Anderson',
    price: 300
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa4219'),
    isbn: 'e70',
    bname: 'namaste react',
    author: [ 'herbet', 'kuvempu' ],
    year: 2019,
    publisher: 'Jack',
    price: 90
  },
  {
    _id: ObjectId('68cb6d845d7955509dfa421a'),
    isbn: 'e80',
    bname: 'node js',
    author: [ 'kuvempu', 'rudresh' ],
    year: 2010,
    publisher: 'Madara',
    price: 1100
  }
]
studb9> |
```

12.display all the books where rama is the first author

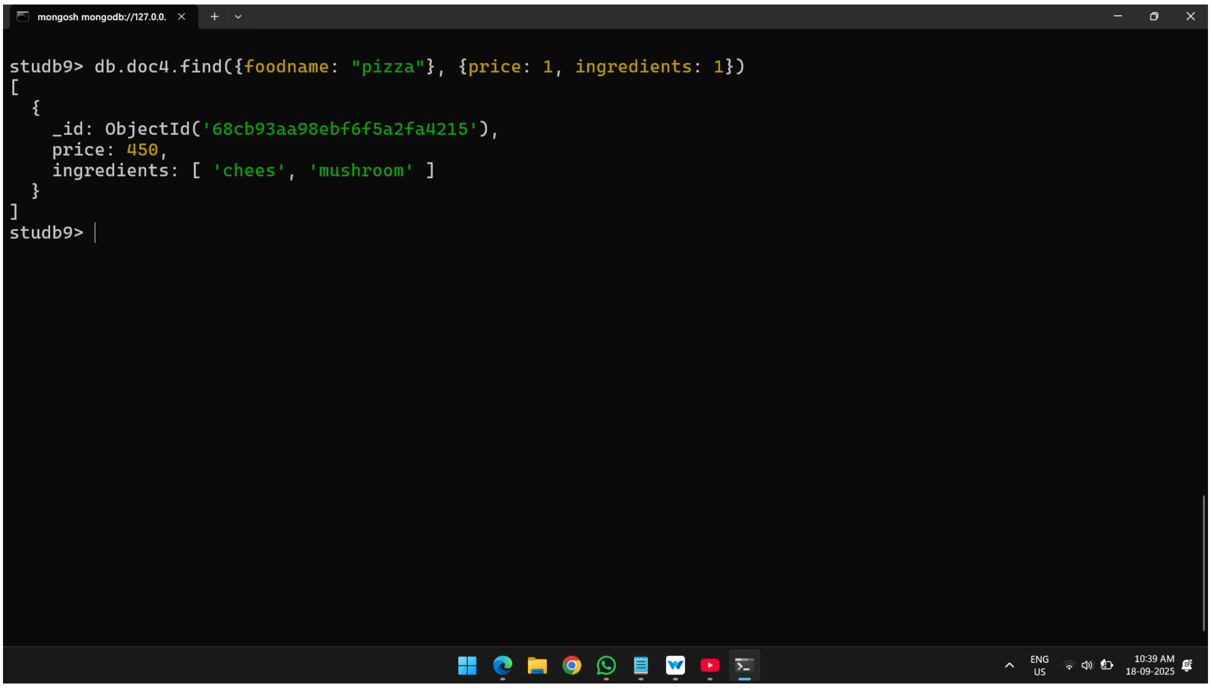


```
studb9> db.doc3.find({"author.0": "rama"})
[
  {
    _id: ObjectId('68cb6d845d7955509dfa4218'),
    isbn: 'e60',
    bname: 'java',
    author: [ 'rama', 'kanaka' ],
    year: 2020,
    publisher: 'Hamilton',
    price: 250
  }
]
studb9> |
```

End of exercise 3

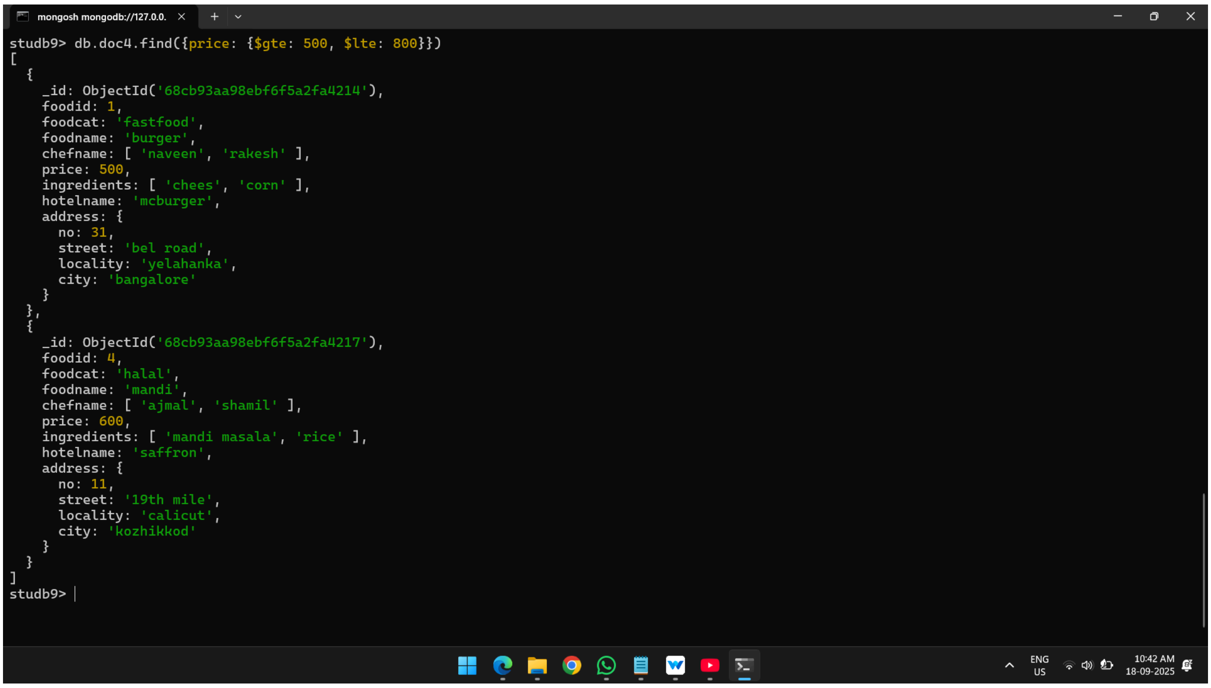
Exercise 4 - Food Database

1. list the price of pizza with ingredients.



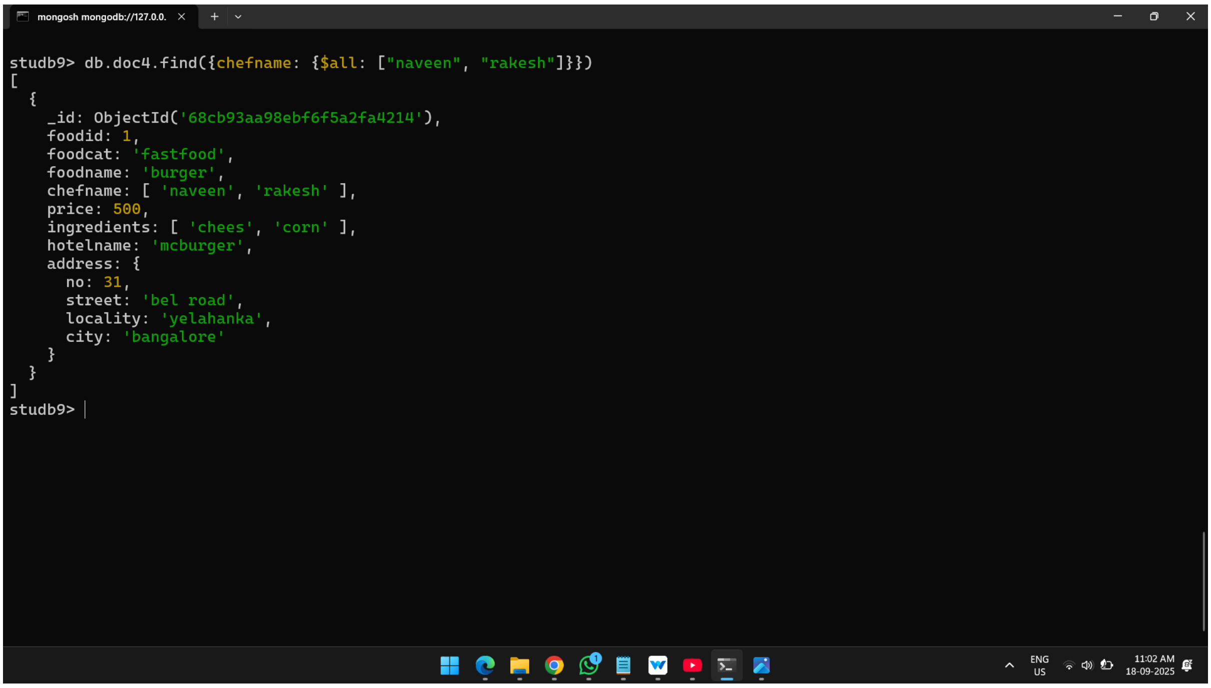
```
studb9> db.doc4.find({foodname: "pizza"}, {price: 1, ingredients: 1})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4215'),
    price: 450,
    ingredients: [ 'chees', 'mushroom' ]
  }
]
studb9>
```

2. display the item in the price range(500,800)



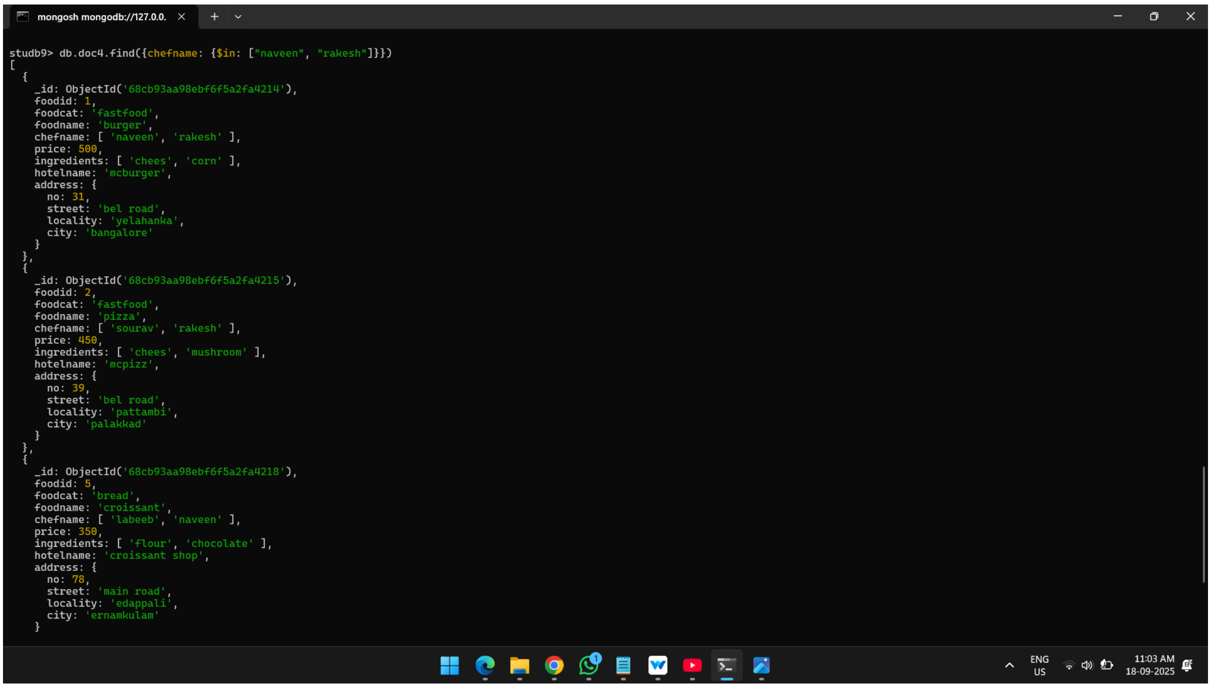
```
studb9> db.doc4.find({price: {$gte: 500, $lte: 800}})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 500,
    ingredients: [ 'chees', 'corn' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    }
  },
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4217'),
    foodid: 4,
    foodcat: 'halal',
    foodname: 'mandi',
    chefname: [ 'ajmal', 'shamil' ],
    price: 600,
    ingredients: [ 'mandi masala', 'rice' ],
    hotelname: 'saffron',
    address: {
      no: 11,
      street: '19th mile',
      locality: 'calicut',
      city: 'kozhikkod'
    }
  }
]
studb9>
```

3.display the item prepared by x and y



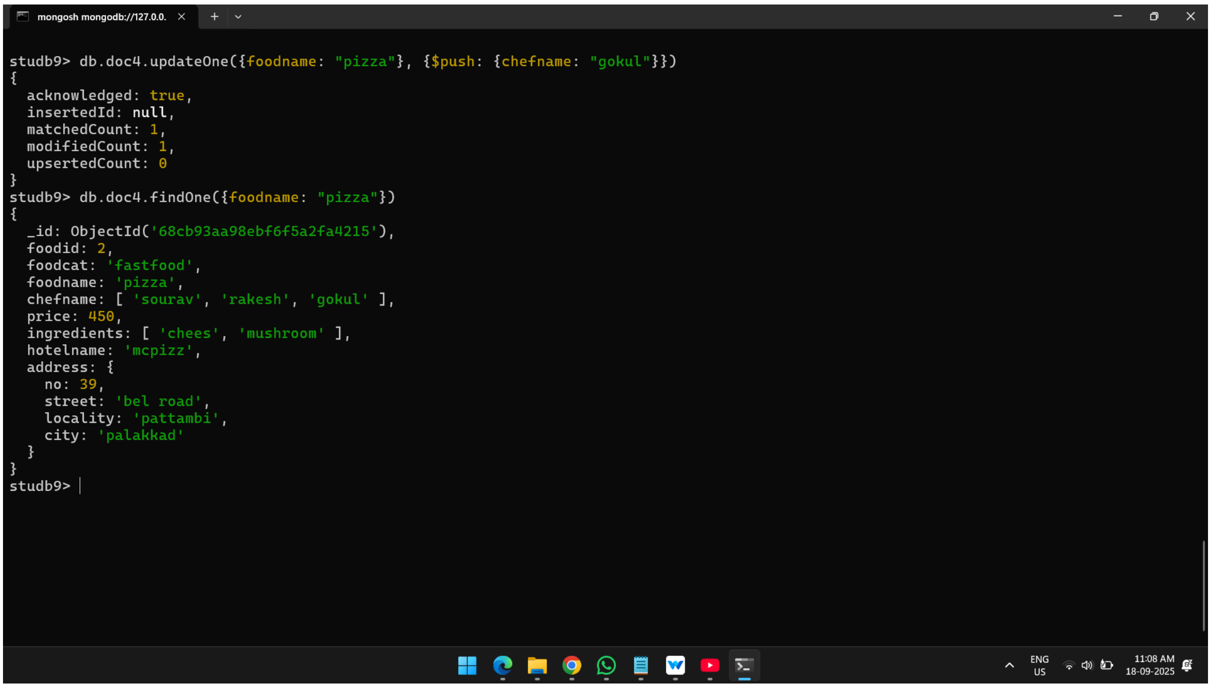
```
studb9> db.doc4.find({chefname: {$all: ["naveen", "rakesh"]}})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 500,
    ingredients: [ 'chees', 'corn' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    }
  }
]
studb9> 
```

4. Display the item prepared by x or y



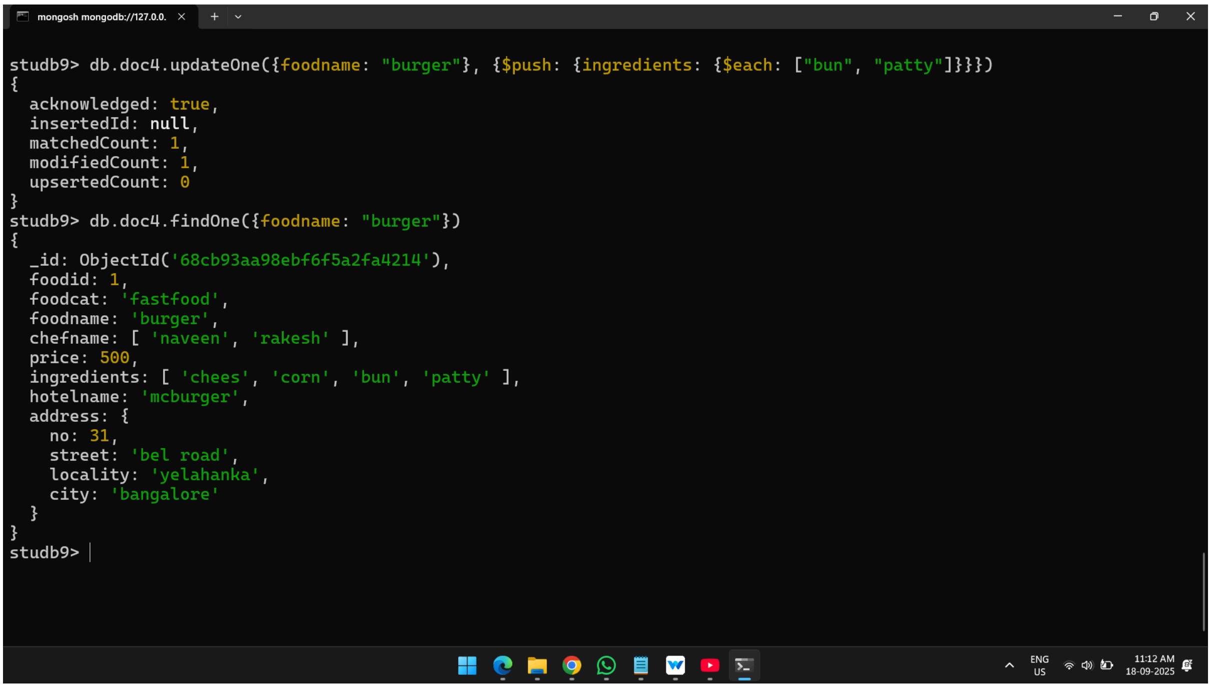
```
studb9> db.doc4.find({chefname: {$in: ["naveen", "rakesh"]}})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 500,
    ingredients: [ 'chees', 'corn' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    }
  },
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4215'),
    foodid: 2,
    foodcat: 'fastfood',
    foodname: 'pizza',
    chefname: [ 'sourav', 'rakesh' ],
    price: 450,
    ingredients: [ 'chees', 'mushroom' ],
    hotelname: 'mcpizz',
    address: {
      no: 39,
      street: 'bel road',
      locality: 'pattambi',
      city: 'palakkad'
    }
  },
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4218'),
    foodid: 5,
    foodcat: 'bread',
    foodname: 'croissant',
    chefname: [ 'labeeb', 'naveen' ],
    price: 350,
    ingredients: [ 'flour', 'chocolate' ],
    hotelname: 'croissant shop',
    address: {
      no: 78,
      street: 'main road',
      locality: 'edappali',
      city: 'ernamkulam'
    }
```

5. Add one chef to the food pizza



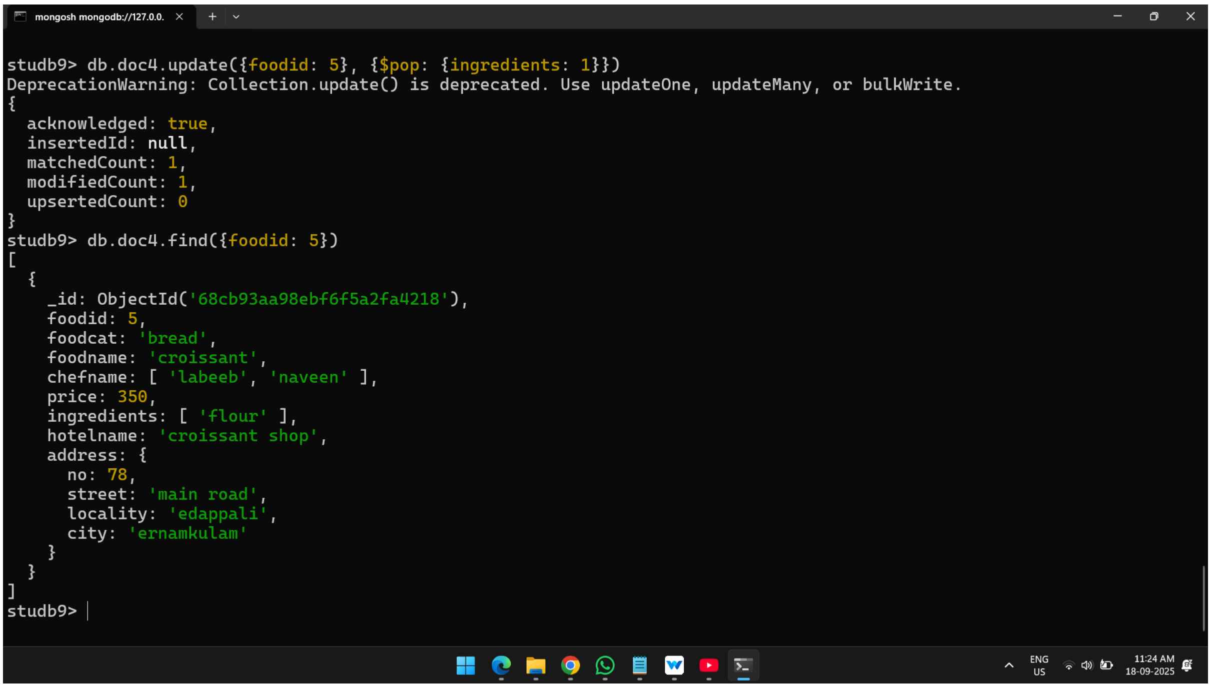
```
studb9> db.doc4.updateOne({foodname: "pizza"}, {$push: {chefname: "gokul"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.findOne({foodname: "pizza"})
{
  _id: ObjectId('68cb93aa98ebf6f5a2fa4215'),
  foodid: 2,
  foodcat: 'fastfood',
  foodname: 'pizza',
  chefname: [ 'sourav', 'rakesh', 'gokul' ],
  price: 450,
  ingredients: [ 'chees', 'mushroom' ],
  hotelname: 'mcpizz',
  address: {
    no: 39,
    street: 'bel road',
    locality: 'pattambi',
    city: 'palakkad'
  }
}
studb9>
```

6. Add ingredients to the food Burger



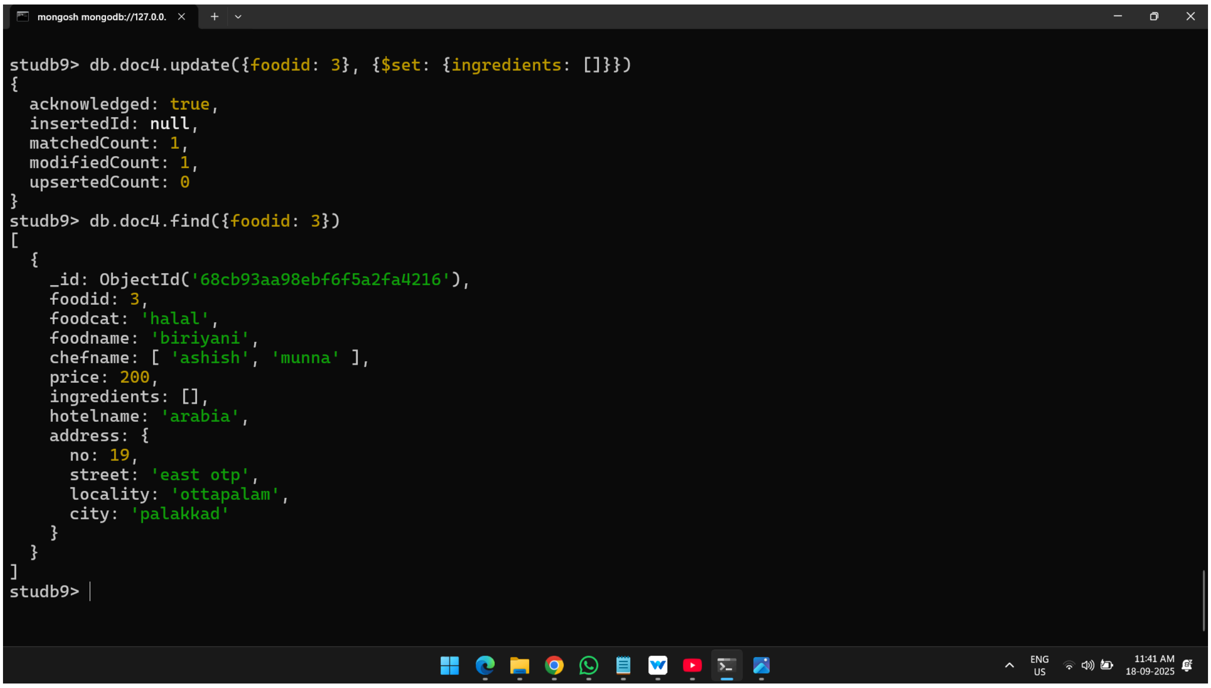
```
studb9> db.doc4.updateOne({foodname: "burger"}, {$push: {ingredients: {$each: ["bun", "patty"]}}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.findOne({foodname: "burger"})
{
  _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
  foodid: 1,
  foodcat: 'fastfood',
  foodname: 'burger',
  chefname: [ 'naveen', 'rakesh' ],
  price: 500,
  ingredients: [ 'chees', 'corn', 'bun', 'patty' ],
  hotelname: 'mcburger',
  address: {
    no: 31,
    street: 'bel road',
    locality: 'yelahanka',
    city: 'bangalore'
  }
}
studb9>
```

7. Delete last ingredient added to the food burger



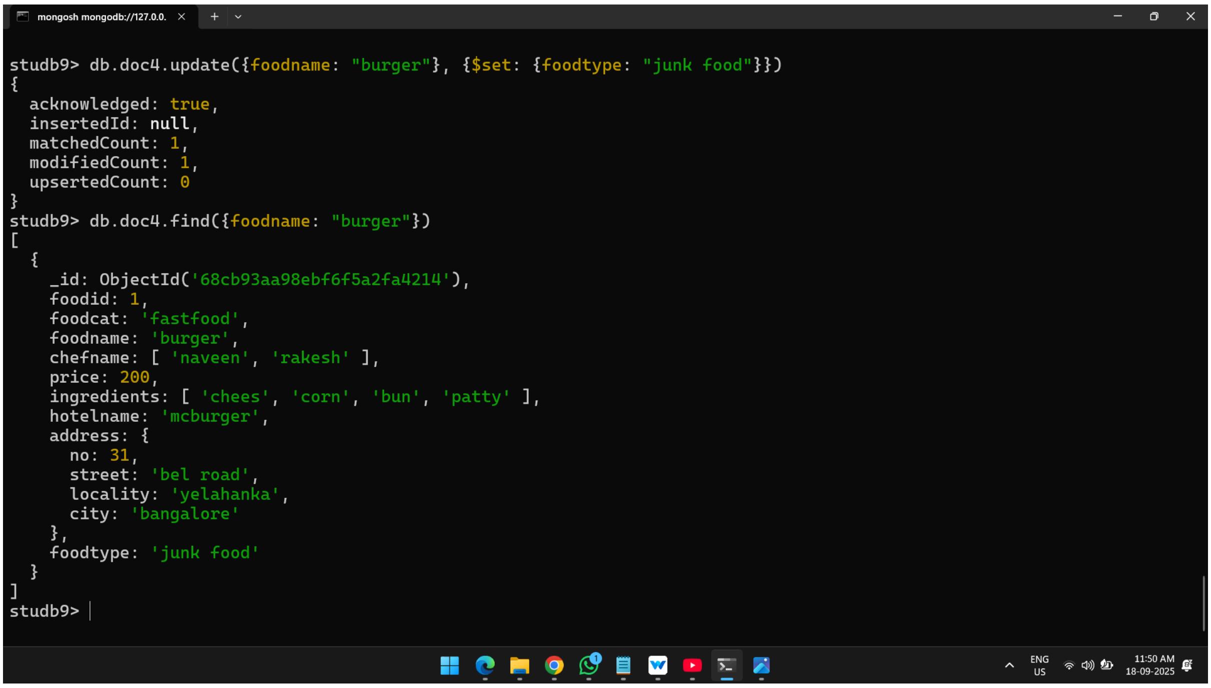
```
studb9> db.doc4.update({foodid: 5}, {$pop: {ingredients: 1}})
DeprecationWarning: Collection.update() is deprecated. Use updateOne, updateMany, or bulkWrite.
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.find({foodid: 5})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4218'),
    foodid: 5,
    foodcat: 'bread',
    foodname: 'croissant',
    chefname: [ 'labeeb', 'naveen' ],
    price: 350,
    ingredients: [ 'flour' ],
    hotelname: 'croissant shop',
    address: {
      no: 78,
      street: 'main road',
      locality: 'edappali',
      city: 'ernamkulam'
    }
  }
]
studb9> 
```

8.Delete All the ingredients from the food biryani



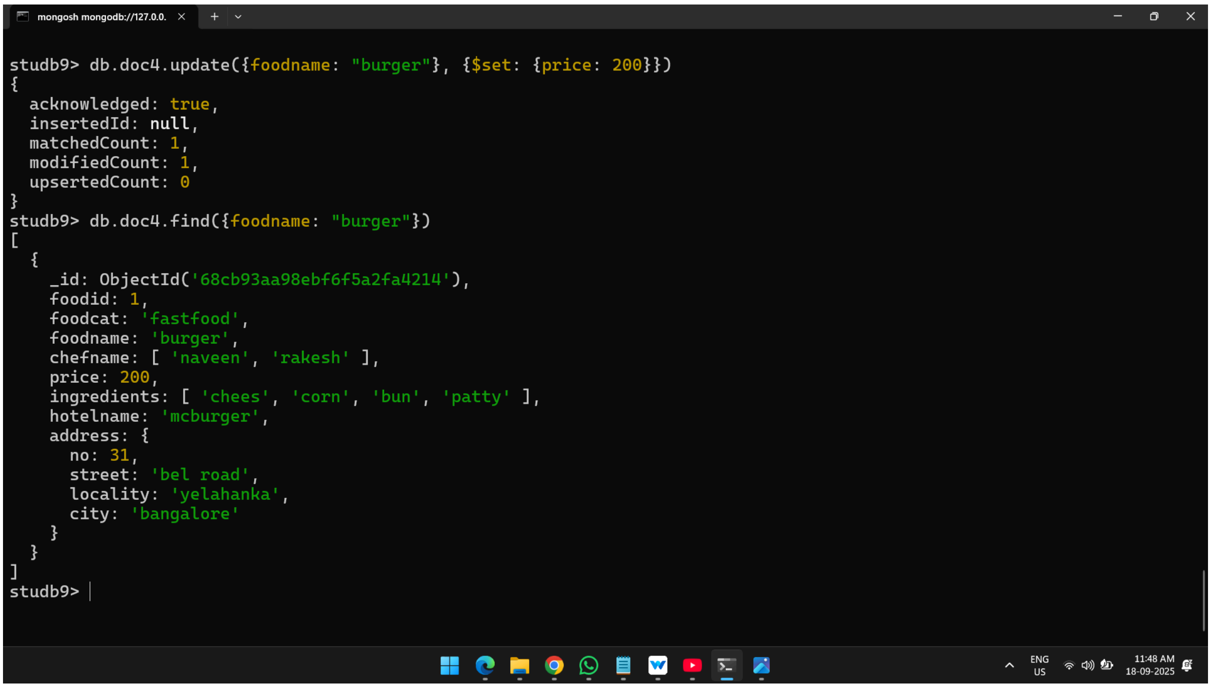
```
studb9> db.doc4.update({foodid: 3}, {$set: {ingredients: []}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.find({foodid: 3})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4216'),
    foodid: 3,
    foodcat: 'halal',
    foodname: 'biriyani',
    chefname: [ 'ashish', 'munna' ],
    price: 200,
    ingredients: [],
    hotelname: 'arabia',
    address: {
      no: 19,
      street: 'east otp',
      locality: 'ottapalam',
      city: 'palakkad'
    }
  }
]
studb9> 
```

9. Add food type to the food Burger.



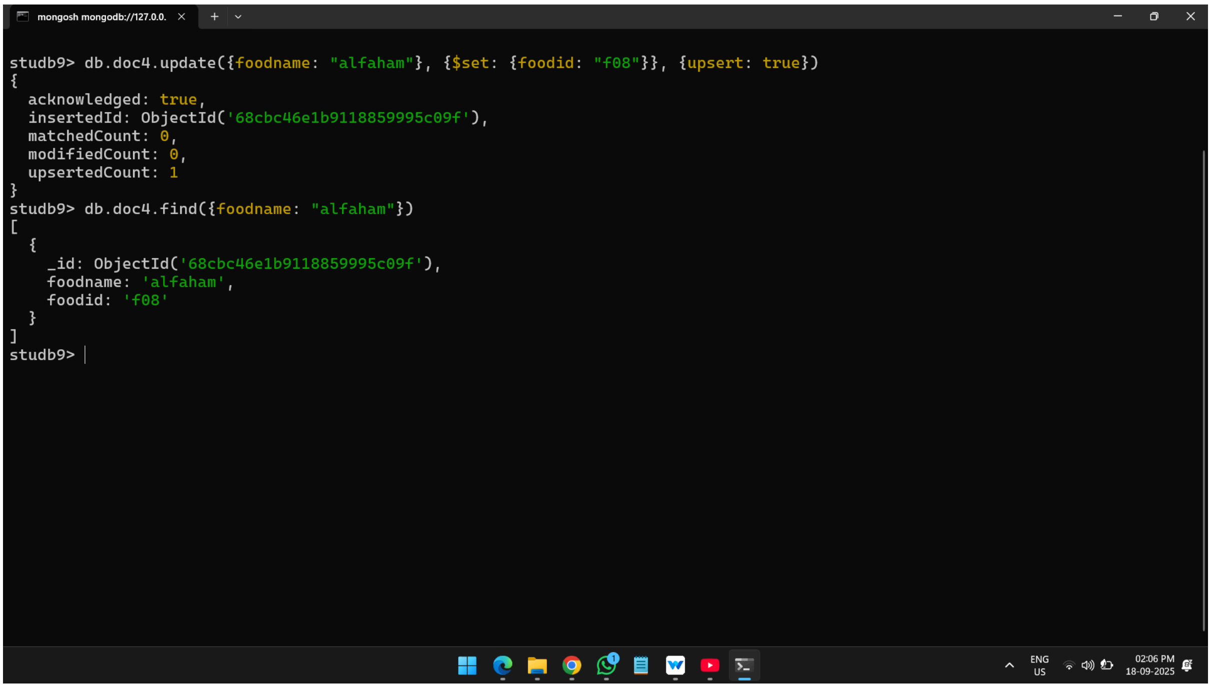
```
studb9> db.doc4.update({foodname: "burger"}, {$set: {foodtype: "junk food"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.find({foodname: "burger"})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 200,
    ingredients: [ 'chees', 'corn', 'bun', 'patty' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    },
    foodtype: 'junk food'
  }
]
studb9>
```

10. Modify the burger price by 200



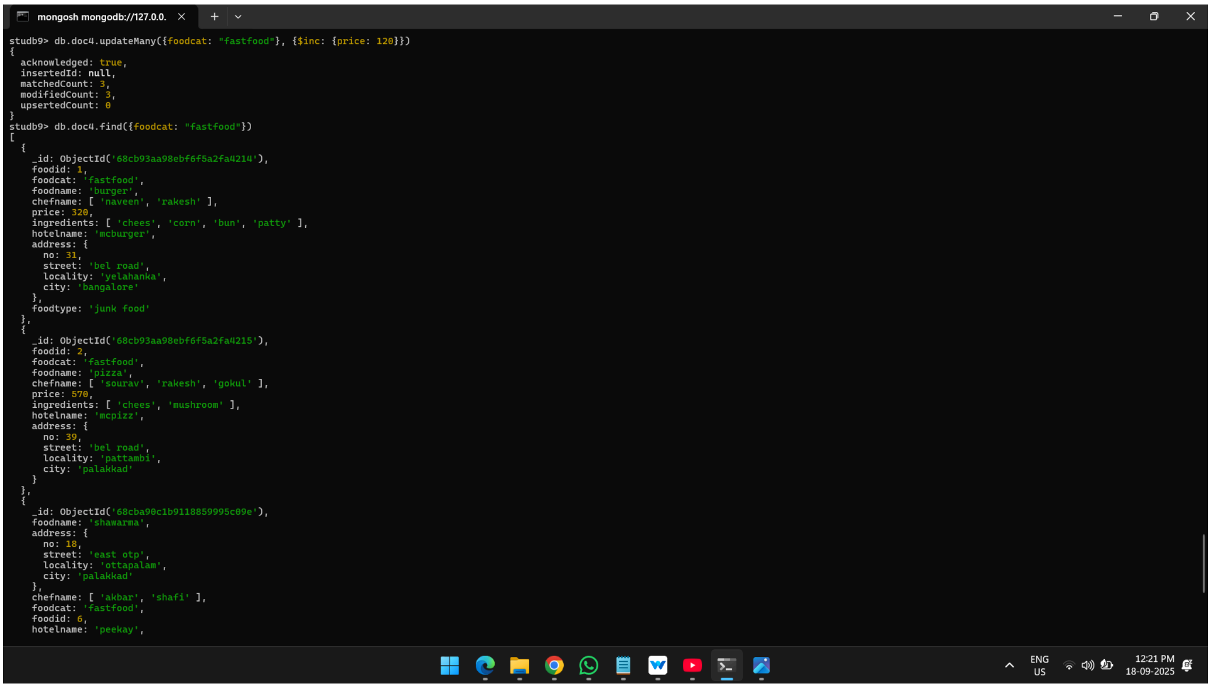
```
studb9> db.doc4.update({foodname: "burger"}, {$set: {price: 200}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
studb9> db.doc4.find({foodname: "burger"})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 200,
    ingredients: [ 'chees', 'corn', 'bun', 'patty' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    }
  }
]
studb9>
```

11. Add or insert a new food item with the food Id “f08 “ using upsert as True.



```
studb9> db.doc4.update({foodname: "alfaham"}, {$set: {foodid: "f08"}}, {upsert: true})
{
  acknowledged: true,
  insertedId: ObjectId('68cbc46e1b9118859995c09f'),
  matchedCount: 0,
  modifiedCount: 0,
  upsertedCount: 1
}
studb9> db.doc4.find({foodname: "alfaham"})
[
  {
    _id: ObjectId('68cbc46e1b9118859995c09f'),
    foodname: 'alfaham',
    foodid: 'f08'
  }
]
studb9> 
```

12. Increment the price of all food item in food cat: fastfood by 120.



```
studb9> db.doc4.updateMany({foodcat: "fastfood"}, {$inc: {price: 120}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 3,
  modifiedCount: 3,
  upsertedCount: 0
}
studb9> db.doc4.find({foodcat: "fastfood"})
[
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4214'),
    foodid: 1,
    foodcat: 'fastfood',
    foodname: 'burger',
    chefname: [ 'naveen', 'rakesh' ],
    price: 320,
    ingredients: [ 'chees', 'corn', 'bun', 'patty' ],
    hotelname: 'mcburger',
    address: {
      no: 31,
      street: 'bel road',
      locality: 'yelahanka',
      city: 'bangalore'
    },
    foodtype: 'junk food'
  },
  {
    _id: ObjectId('68cb93aa98ebf6f5a2fa4215'),
    foodid: 2,
    foodcat: 'fastfood',
    foodname: 'pizza',
    chefname: [ 'sourav', 'rakesh', 'gokul' ],
    price: 570,
    ingredients: [ 'chees', 'mushroom' ],
    hotelname: 'mcpizz',
    address: {
      no: 39,
      street: 'bel road',
      locality: 'pattambi',
      city: 'palakkad'
    }
  },
  {
    _id: ObjectId('68cba90c1b9118859995c09e'),
    foodname: 'shawarma',
    address: {
      no: 18,
      street: 'east otp',
      locality: 'ottapalam',
      city: 'palakkad'
    },
    chefname: [ 'akbar', 'shafi' ],
    foodcat: 'fastfood',
    foodid: 6,
    hotelname: 'peekay',
```

End of exercise 4