

Practical 4

Operators in MongoDB:

Importing dataset to the server and reading it in shell:

```
C:\Users\NISHIT>mongoimport --db sales_data --collection sales_data --file C:\Users\NISHIT\Downloads\csvjson.json --jsonArray
2024-03-01T20:00:56.244+0530   connected to: mongodb://localhost/
2024-03-01T20:00:56.346+0530   2823 document(s) imported successfully. 0 document(s) failed to import.

C:\Users\NISHIT>
```

```
nishit> show dbs
admin          40.00 KiB
config         60.00 KiB
local          72.00 KiB
nishit         436.00 KiB
sales_data     436.00 KiB
user1          72.00 KiB
nishit> use sales_data
switched to db sales_data
sales_data> db.sales_data.find()
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a720f'),
    ORDERNUMBER: 10121,
    QUANTITYORDERED: 34,
    PRICEEACH: 81.35,
    ORDERLINENUMBER: 5,
    SALES: 2765.9,
    ORDERDATE: '5/7/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 5,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Reims Collectables',
    PHONE: '26.47.1555',
    ADDRESSLINE1: '59 rue de l'Abbaye',
    ADDRESSLINE2: '',
    CITY: 'Reims',
    STATE: '',
    POSTALCODE: 51100,
    COUNTRY: 'France',
    TERRITORY: 'EMEA',
    CONTACTLASTNAME: 'Henriot',
    CONTACTFIRSTNAME: 'Paul',
    DEALSIZE: 'Small'
  },
]
```

1. Retrieving all those records of sales above 3000:

```
sales_data> db.sales_data.find(
... {SALES:{$gte:3000}}
... );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7211'),
    ORDERNUMBER: 10159,
    QUANTITYORDERED: 49,
    PRICEEACH: 100,
    ORDERLINENUMBER: 14,
    SALES: 5205.27,
    ORDERDATE: '10/10/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 4,
    MONTH_ID: 10,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Corporate Gift Ideas Co.',
    PHONE: Long('6505551386'),
    ADDRESSLINE1: '7734 Strong St.',
    ADDRESSLINE2: '',
    CITY: 'San Francisco',
    STATE: 'CA',
    POSTALCODE: '',
    COUNTRY: 'USA',
    TERRITORY: 'NA',
    CONTACTLASTNAME: 'Brown',
    CONTACTFIRSTNAME: 'Julie',
    DEALSIZE: 'Medium'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7212'),
    ORDERNUMBER: 10145,
    QUANTITYORDERED: 45,
    PRICEEACH: 83.26,
    ORDERLINENUMBER: 6,
    SALES: 3746.7,
```

1. Retrieving all those records of sales above 3000:

2. Retrieving all those records in year 2003:

```
sales_data> db.sales_data.find( { YEAR_ID: { $eq: 2003 } } );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a720f'),
    ORDERNUMBER: 10121,
    QUANTITYORDERED: 34,
    PRICEEACH: 81.35,
    ORDERLINENUMBER: 5,
    SALES: 2765.9,
    ORDERDATE: '5/7/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 5,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Reims Collectables',
    PHONE: '26.47.1555',
    ADDRESSLINE1: '59 rue de l'Abbaye',
    ADDRESSLINE2: '',
    CITY: 'Reims',
    STATE: '',
    POSTALCODE: 51100,
    COUNTRY: 'France',
    TERRITORY: 'EMEA',
    CONTACTLASTNAME: 'Henriot',
    CONTACTFIRSTNAME: 'Paul',
    DEALSIZE: 'Small'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7210'),
    ORDERNUMBER: 10180,
    QUANTITYORDERED: 29,
    PRICEEACH: 86.13,
    ORDERLINENUMBER: 9,
    SALES: 2497.77,
    ORDERDATE: '11/11/2003 0:00',
    STATUS: 'Shipped',
```

3. Retrieving those Record where OrderNumber is 10341:

```
sales_data> db.sales_data.find( { ORDERNUMBER: { $eq: 10341 }} );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7222'),
    ORDERNUMBER: 10341,
    QUANTITYORDERED: 41,
    PRICEEACH: 100,
    ORDERLINENUMBER: 9,
    SALES: 7737.93,
    ORDERDATE: '11/24/2004 0:00',
    STATUS: 'Shipped',
    QTR_ID: 4,
    MONTH_ID: 11,
    YEAR_ID: 2004,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Salzburg Collectables',
    PHONE: '6562-9555',
    ADDRESSLINE1: 'Geislweg 14',
    ADDRESSLINE2: '',
    CITY: 'Salzburg',
    STATE: '',
    POSTALCODE: 5020,
    COUNTRY: 'Austria',
    TERRITORY: 'EMEA',
    CONTACTLASTNAME: 'Pipps',
    CONTACTFIRSTNAME: 'Georg',
    DEALSIZE: 'Large'
  },
]
```

4. Retrieving those Record Where sales are between 3000 and 5000.

```

sales_data> db.sales_data.find( { $and: [ { SALES: { $gte: 3000 } }, {SALES: { $lte: 5000 }} ] } );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7212'),
    ORDERNUMBER: 10145,
    QUANTITYORDERED: 45,
    PRICEEACH: 83.26,
    ORDERLINENUMBER: 6,
    SALES: 3746.7,
    ORDERDATE: '8/25/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 3,
    MONTH_ID: 8,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Toys4GrownUps.com',
    PHONE: Long('6265557265'),
    ADDRESSLINE1: '78934 Hillside Dr.',
    ADDRESSLINE2: '',
    CITY: 'Pasadena',
    STATE: 'CA',
    POSTALCODE: 90003,
    COUNTRY: 'USA',
    TERRITORY: 'NA',
    CONTACTLASTNAME: 'Young',
    CONTACTFIRSTNAME: 'Julie',
    DEALSIZE: 'Medium'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7214'),
    ORDERNUMBER: 10168,
    QUANTITYORDERED: 36,
    PRICEEACH: 96.66,
    ORDERLINENUMBER: 1,
    SALES: 3479.76,
  }
]

```

5. To check the existence of a field and return its count in the dataset.

```

sales_data> db.sales_data.countDocuments({ "SALES": {$exists: true}});
2823
sales_data> db.sales_data.countDocuments({ "STATE": {$exists: false}});
0
sales_data> |

```

6. check for null values in the existing field

```

sales_data> db.sales_data.countDocuments({ "SALES": null});
0
sales_data> db.sales_data.countDocuments({ "STATE": null});
0
sales_data> |

```

7. . Retrieving all records of not having year 2003.

```
sales_data> db.sales_data.find( { YEAR_ID: { $ne: 2003 } } );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7216'),
    ORDERNUMBER: 10237,
    QUANTITYORDERED: 23,
    PRICEEACH: 100,
    ORDERLINENUMBER: 7,
    SALES: 2333.12,
    ORDERDATE: '4/5/2004 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 4,
    YEAR_ID: 2004,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Vitachrome Inc.',
    PHONE: 2125551500,
    ADDRESSLINE1: '2678 Kingston Rd.',
    ADDRESSLINE2: 'Suite 101',
    CITY: 'NYC',
    STATE: 'NY',
    POSTALCODE: 10022,
    COUNTRY: 'USA',
    TERRITORY: 'NA',
    CONTACTLASTNAME: 'Frick',
    CONTACTFIRSTNAME: 'Michael',
    DEALSIZE: 'Small'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7217'),
    ORDERNUMBER: 10211,
    QUANTITYORDERED: 41,
    PRICEEACH: 100,
    ORDERLINENUMBER: 14,
    SALES: 4708.44,
    ORDERDATE: '1/15/2004 0:00',
    STATUS: 'Shipped',
    QTR_ID: 1,
    MONTH_ID: 1,
    YEAR_ID: 2004,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
```

8. Retrieving all records where Quantity Ordered is equal to 32.

```
sales_data> db.sales_data.find( { QUANTITYORDERED: { $eq: 32 } } );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7235'),
    ORDERNUMBER: 10258,
    QUANTITYORDERED: 32,
    PRICEEACH: 100,
    ORDERLINENUMBER: 6,
    SALES: 7680.64,
    ORDERDATE: '6/15/2004 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 6,
    YEAR_ID: 2004,
    PRODUCTLINE: 'Classic Cars',
    MSRP: 214,
    PRODUCTCODE: 'S10_1949',
    CUSTOMERNAME: 'Tokyo Collectables, Ltd',
    PHONE: '+81 3 3584 0555',
    ADDRESSLINE1: '2-2-8 Roppongi',
    ADDRESSLINE2: '',
    CITY: 'Minato-ku',
    STATE: 'Tokyo',
    POSTALCODE: '106-0032',
    COUNTRY: 'Japan',
    TERRITORY: 'Japan',
    CONTACTLASTNAME: 'Shimamura',
    CONTACTFIRSTNAME: 'Akiko',
    DEALSIZE: 'Large'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a723d'),
    ORDERNUMBER: 10357,
    QUANTITYORDERED: 32,
    PRICEEACH: 100,
    ORDERLINENUMBER: 10,
    SALES: 5691.84,
    ORDERDATE: '12/10/2004 0:00',
    STATUS: 'Shipped',
    QTR_ID: 4,
    MONTH_ID: 12,
    YEAR_ID: 2004,
    PRODUCTLINE: 'Classic Cars',
    MSRP: 214,
    PRODUCTCODE: 'S10_1949',
    CUSTOMERNAME: 'Mini Gifts Distributors Ltd.'
```

9. Retrieving all records.

```
sales_data> db.sales_data.find();
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a720f'),
    ORDERNUMBER: 10121,
    QUANTITYORDERED: 34,
    PRICEEACH: 81.35,
    ORDERLINENUMBER: 5,
    SALES: 2765.9,
    ORDERDATE: '5/7/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 5,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Reims Collectables',
    PHONE: '26.47.1555',
    ADDRESSLINE1: '59 rue de l'Abbaye',
    ADDRESSLINE2: '',
    CITY: 'Reims',
    STATE: '',
    POSTALCODE: 51100,
    COUNTRY: 'France',
    TERRITORY: 'EMEA',
    CONTACTLASTNAME: 'Henriot',
    CONTACTFIRSTNAME: 'Paul',
    DEALSIZE: 'Small'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7210'),
    ORDERNUMBER: 10180,
    QUANTITYORDERED: 29,
    PRICEEACH: 86.13,
    ORDERLINENUMBER: 9,
    SALES: 2497.77,
    ORDERDATE: '11/11/2003 0:00',
    STATUS: 'Shipped',
    QTR_ID: 4,
    MONTH_ID: 11,
    YEAR_ID: 2003,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Daedalus Designs Imports',
  }
]
```


10. Retrieving all records where sales greater then 3000 and Quantity Order greater then 54.

```
sales_data> db.sales_data.find( { $and: [ { SALES: { $gte: 3000 } }, {QUANTITYORDERED: { $gte: 54 } } ] } );
[
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7226'),
    ORDERNUMBER: 10417,
    QUANTITYORDERED: 66,
    PRICEEACH: 100,
    ORDERLINENUMBER: 2,
    SALES: 7516.08,
    ORDERDATE: '5/13/2005 0:00',
    STATUS: 'Disputed',
    QTR_ID: 2,
    MONTH_ID: 5,
    YEAR_ID: 2005,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 95,
    PRODUCTCODE: 'S10_1678',
    CUSTOMERNAME: 'Euro Shopping Channel',
    PHONE: '(91) 555 94 44',
    ADDRESSLINE1: 'C/ Moralezarzal, 86',
    ADDRESSLINE2: '',
    CITY: 'Madrid',
    STATE: '',
    POSTALCODE: 28034,
    COUNTRY: 'Spain',
    TERRITORY: 'EMEA',
    CONTACTLASTNAME: 'Freyre',
    CONTACTFIRSTNAME: 'Diego',
    DEALSIZE: 'Large'
  },
  {
    _id: ObjectId('65e1e6a090ab6b5aa21a7275'),
    ORDERNUMBER: 10403,
    QUANTITYORDERED: 66,
    PRICEEACH: 100,
    ORDERLINENUMBER: 9,
    SALES: 11886.6,
    ORDERDATE: '4/8/2005 0:00',
    STATUS: 'Shipped',
    QTR_ID: 2,
    MONTH_ID: 4,
    YEAR_ID: 2005,
    PRODUCTLINE: 'Motorcycles',
    MSRP: 193,
    PRODUCTCODE: 'S10_4698',
  }
]
```