

LAB-1

Part -2:

1) find the average quarterly sold quantity of a color

Step1: The database is created by inserting the given csv file directly onto the MongoDB cluster.

The screenshot displays the MongoDB Atlas interface for the 'SalesDB.Sales' collection. The top navigation bar shows 'My Queries', 'Databases', 'Sales', and 'samplecolor'. The main area is titled 'SalesDB.Sales' and shows '0 DOCUMENTS' and '1 INDEXES'. The 'Documents' tab is selected, displaying a list of 6 documents. Each document contains the following fields: _id, Color, Quarter, and Sold Quantity. The documents are sorted by Sold Quantity in descending order.

_id	Color	Quarter	Sold Quantity
ObjectId('65b6ada6ca1d0c3a76482fb4')	Blue	1	230
ObjectId('65b6ada6ca1d0c3a76482fb5')	Blue	2	452
ObjectId('65b6ada6ca1d0c3a76482fb6')	Blue	3	6351
ObjectId('65b6ada6ca1d0c3a76482fb7')	Blue	4	5280
ObjectId('65b6ada6ca1d0c3a76482fb8')	Red	1	2453
ObjectId('65b6ada6ca1d0c3a76482fb9')	Red	2	3486

My Queries

Databases

Sales

samplecolor

×

+

Sampledata.samplecolor

0 DOCUMENTS 1 INDEXES

Documents

Aggregations

Schema

Indexes

Validation

Pipeline

\$group

\$project

Explain

Export

Run

Options

Tell Compass what aggregation to build (e.g. how many movies were made each year)

Generate

Untitled - modified

SAVE

CREATE NEW

EXPORT TO LANGUAGE

PREVIEW

STAGES

TEXT

WIZARD

Stage 1 \$group

```

1 {
2   _id: {
3     Quarter: "$Quarter",
4     Color: "$Color",
5   },
6   avgSoldQuantity: {
7     $avg: "$Sold Quantity",
8   },
9 }

```

Output after \$group stage (Sample of 10 documents)

```

{
  _id: {
    Quarter: "1",
    Color: "Blue"
  },
  avgSoldQuantity: 1535
}

```

```

{
  _id: {
    Quarter: "3",
    Color: "Blue"
  },
  avgSoldQuantity: 452
}

```

Stage 2 \$project

```

1 {
2   _id: 0,
3   Quarter: "$_id.Quarter",
4   Color: "$_id.Color",
5   avgSoldQuantity: 1,
6 }

```

Output after \$project stage (Sample of 10 documents)

```

{
  avgSoldQuantity: 230,
  Quarter: 1,
  Color: "Blue"
}

```

```

{
  avgSoldQuantity: 6351,
  Quarter: 3,
  Color: "Blue"
}

```

Below is the final Schema:

My Queries
Databases
Sales
samplecolor

0 DOCUMENTS
1 INDEXES

Documents
Aggregations
Schema
Indexes
Validation

Pipeline
\$group
\$project

Tell Compass what aggregation to build (e.g. how many movies were made each year)
Generate

Untitled - modified
SAVE
CREATE NEW
EXPORT TO LANGUAGE
PREVIEW
STAGES
TEXT
WIZARD

```

1 [
2   {
3     $group: {
4       _id: {
5         Quarter: "$Quarter",
6         Color: "$Color",
7       },
8       avgSoldQuantity: {
9         $avg: "$Sold Quantity",
10      },
11    },
12  },
13  {
14    $project: {
15      _id: 0,
16      Quarter: "$_id.Quarter",
17      Color: "$_id.Color",
18      avgSoldQuantity: 1,
19    },
20  },
21 ]

```

PIPELINE OUTPUT

Sample of 10 documents

avgSoldQuantity: 5788
Quarter: 3
Color: "Silver"

avgSoldQuantity: 4511
Quarter: 4
Color: "Silver"

avgSoldQuantity: 3486
Quarter: 2
Color: "Red"

avgSoldQuantity: 2453
Quarter: 1
Color: "Red"

avgSoldQuantity: 1535
Quarter: 3
Color: "Red"

avgSoldQuantity: 452

2) calculate the average quarterly sold quantity of the blue color.

Step1: The database is created by inserting the given csv file directly onto the MongoDB cluster.

0 1
DOCUMENTS INDEXES

Validation

Options ▶


```
_id: ObjectId('65b6ada6ca1d0c3a76482fb9')
Color: "Red"
Quarter: 2
Sold Quantity: 3486
```

My QueriesDatabasesSales ×samplecolor+

SalesDB.Sales

01DOCUMENTSINDEXES

DocumentsAggregationsSchemaIndexesValidation

Filter ⓘ ⓘ

Type a query: { field: 'value' } or [Generate query](#) ⚡

ExplainResetFind⌘Options ▶

ADD DATA ▾

EXPORT DATA ▾

1 - 12 of 12↺<>⋮⌘⌘

_id: ObjectId('65b6ada6ca1d0c3a76482fba')

Color: "Red"

Quarter: 3

Sold Quantity: 1535

_id: ObjectId('65b6ada6ca1d0c3a76482fbb')

Color: "Red"

Quarter: 4

Sold Quantity: 1250

_id: ObjectId('65b6ada6ca1d0c3a76482fbc')

Color: "Silver"

Quarter: 1

Sold Quantity: 814

_id: ObjectId('65b6ada6ca1d0c3a76482fbd')

Color: "Silver"

Quarter: 2

Sold Quantity: 1039

_id: ObjectId('65b6ada6ca1d0c3a76482fbe')

Color: "Silver"

Quarter: 3

Sold Quantity: 5788

_id: ObjectId('65b6ada6ca1d0c3a76482fbf')

Color: "Silver"

Quarter: 4

Step 2: To calculate the given problem, it is segregated into different stages, wherein stage 1 is the matching operation of getting all the blue colored objects.

The above query is inputted to get the desired result.

My QueriesDatabasesSales × samplecolor+

SalesDB.Sales

0DOCUMENTS1INDEXES

DocumentsAggregationsSchemaIndexesValidation

Pipeline ▾\$match\$group\$sort\$project

ⓘ Explain Export Run Options ▾

🔧 Tell Compass what aggregation to build (e.g. how many movies were made each year)Generate

Untitled - modifiedSAVE+ CREATE NEWEXPORT TO LANGUAGEPREVIEWSTAGESTEXTWIZARD

12 Documents in the collection

Preview of documents

```
_id: ObjectId('65b6ada6ca1d0c3a76482fb4')
Color: "Blue"
Quarter: 1
Sold Quantity: 230
```

```
_id: ObjectId('65b6ada6ca1d0c3a76482fb5')
Color: "Blue"
Quarter: 2
Sold Quantity: 452
```

```
_id: ObjectId('65b6ada6ca1d0c3a76482fb6')
Color: "Blue"
Quarter: 3
Sold Quantity: 6351
```

Stage 1 \$match

```
1 {
2   Color: "Blue",
3 }
```

Output after \$match stage (Sample of 4 documents)

```
_id: ObjectId('65b6ada6ca1d0c3a76482fb4')
Color: "Blue"
Quarter: 1
Sold Quantity: 230
```

```
_id: ObjectId('65b6ada6ca1d0c3a76482fb5')
Color: "Blue"
Quarter: 2
Sold Quantity: 452
```

Step 3: The following 2 queries are majorly based on group into quarters and then sorting them accordingly.

My Queries

Databases

Sales

×

samplecolor

+

SalesDB.Sales

0DOCUMENTS1INDEXES

DocumentsAggregationsSchemaIndexesValidation

Pipeline

\$match\$group\$sort\$project

?

Explain

Export

Run

Options

Tell Compass what aggregation to build (e.g. how many movies were made each year)

Generate

Untitled - modified

SAVE

+ CREATE NEW

EXPORT TO LANGUAGE

PREVIEW

STAGES

TEXT

WIZARD

Stage 2 (\$group)

```
1 {
2   _id: "$Quarter",
3   averageQuantity: {
4     $avg: "$Sold Quantity",
5   },
6 }
```

Output after \$group stage (Sample of 4 documents)

_id: 1

averageQuantity: 230

_id: 2

averageQuantity: 452

Stage 3 (\$sort)

```
1 {
2   _id: 1,
3 }
```

Output after \$sort stage (Sample of 4 documents)

_id: 1

averageQuantity: 230

_id: 2

averageQuantity: 452

My QueriesDatabasesSalesXsamplecolor+

SalesDB.Sales

01DOCUMENTSINDEXES

DocumentsAggregationsSchemaIndexesValidation

Pipeline

\$match\$group\$sort\$project

Tell Compass what aggregation to build (e.g. how many movies were made each year)Generate

Untitled - modifiedSAVE+ CREATE NEWEXPORT TO LANGUAGEPREVIEWSTAGESTEXTWIZARD

Stage 3\$sort

```
1 {
2   _id: 1,
3 }
```

Output after \$sort stage (Sample of 4 documents)

_id: 1
averageQuantity: 230

_id: 2
averageQuantity: 452

Stage 4\$project

```
1 {
2   _id: 0,
3   Quarter: "$_id",
4   averageQuantity: 1,
5 }
```

Output after \$project stage (Sample of 4 documents)

averageQuantity: 230
Quarter: 1

averageQuantity: 452
Quarter: 2

Below is the final schema:

SalesDB.Sales

0

DOCUMENTS

1

INDEXES

Documents

Aggregations

Schema

Indexes

Validation

Pipeline

📄

\$match

\$group

\$sort

\$project

🔗

Explain

Export

Run

Options ▶

🔗

Tell Compass what aggregation to build (e.g. how many movies were made each year)

Generate 🔄

Untitled - modified

📄 SAVE

+ CREATE NEW

🔗 EXPORT TO LANGUAGE

🔵 PREVIEW

{} STAGES

🔗 TEXT

🔧 WIZARD

⚙️

1 [

2 {

3 \$match: {

4 color: "Blue",

5 },

6 },

7 {

8 \$group: {

9 _id: "\$Quarter",

10 averageQuantity: {

11 \$avg: "\$Sold Quantity",

12 },

13 },

14 },

15 {

16 \$sort: {

17 _id: 1,

18 },

19 },

20 {

21 \$project: {

22 _id: 0,

23 Quarter: "\$_id",

24 averageQuantity: 1,

25 },

26 },

27]

PIPELINE OUTPUT

Sample of 4 documents

OUTPUT OPTIONS ▼

averageQuantity: 230

Quarter: 1

averageQuantity: 452

Quarter: 2

averageQuantity: 6351

Quarter: 3

averageQuantity: 5280

Quarter: 4