

Lab1: Part 2: Mongo DB

Document: Below document contains all the 12 rows from the csv file

<div><div>ADD DATA</div><div>EXPORT DATA</div></div>		1 - 12 of 12
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1ea')</div><div>Color: "Blue"</div><div>Quarter: 1</div><div>Sold Quantity: 230</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1eb')</div><div>Color: "Blue"</div><div>Quarter: 2</div><div>Sold Quantity: 452</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1ec')</div><div>Color: "Blue"</div><div>Quarter: 3</div><div>Sold Quantity: 6351</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1ed')</div><div>Color: "Blue"</div><div>Quarter: 4</div><div>Sold Quantity: 5280</div></div>		
<div><div>▶ <div>_id: ObjectId('65b6fdaaefb51420f85db1ee')</div><div>Color: "Red"</div><div>Quarter: 1</div><div>Sold Quantity: 2453</div></div></div>		1
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1ef')</div><div>Color: "Red"</div><div>Quarter: 2</div><div>Sold Quantity: 3486</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f0')</div><div>Color: "Red"</div><div>Quarter: 3</div><div>Sold Quantity: 1535</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f1')</div><div>Color: "Red"</div><div>Quarter: 4</div><div>Sold Quantity: 1250</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f2')</div><div>Color: "Silver"</div><div>Quarter: 1</div><div>Sold Quantity: 814</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f3')</div><div>Color: "Silver"</div><div>Quarter: 2</div><div>Sold Quantity: 1039</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f4')</div><div>Color: "Silver"</div><div>Quarter: 3</div><div>Sold Quantity: 5788</div></div>		
<div><div>_id: ObjectId('65b6fdaaefb51420f85db1f5')</div><div>Color: "Silver"</div><div>Quarter: 4</div><div>Sold Quantity: 4511</div></div>		

Part1: Aggregate: Average sold quantity of all colors

Formula:

```
[
  {
    $group:
      /**
       * _id: The id of the group.
       * fieldN: The first field name.
       */
    {
      _id: {
        Quarter: "$Quarter",
        Color: "$Color",
      },
      AverageSoldQuantity: {
        $avg: "$Sold Quantity",
      },
    },
  },
  {
    $project:
      /**
       * specifications: The fields to
       * include or exclude.
       */
    {
      _id: 0,
      Quarter: "$_id.Quarter",
      Color: "$_id.Color",
      AverageSoldQuantity: 1,
    },
  },
]
```

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Validation

Pipeline

\$group

\$project

Generate aggregation

Explain

Export

Run

Options

Untitled - modified

SAVE

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TEXT

WIZARD

1 /**

2 * _id: The id of the group.

3 * fieldN: The first field name.

4 */

5 {

6 _id: {

7 Quarter: '\$Quarter',

8 Color: '\$Color'

9 },

10 AverageSoldQuantity: {

11 \$avg: '\$Sold Quantity'

12 }

13 }

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

_id: Object

AverageSoldQuantity: 2453

_id: Object

AverageSoldQuantity: 1250

_id: Ob

Average

Stage 2

\$project

1 /**

2 * specifications: The fields to

3 * include or exclude.

4 */

5 {

6 id:0,

7 Quarter: '\$_id.Quarter',

8 Color: '\$_id.Color',

9 AverageSoldQuantity:1,

10 }

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

AverageSoldQuantity: 1039

Quarter: 2

Color: "Silver"

AverageSoldQuantity: 230

Quarter: 1

Color: "Blue"

Average

Quarters

Color:

Pipeline

\$group

\$project

Generate aggregation

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Options

Untitled - modified

SAVE

CREATE NEW

EXPORT TO LANGUAGE

PREVIEW

STAGES

TEXT

WIZARD

1 [

2 {

3 \$group:

4 /**

5 * _id: The id of the group.

6 * fieldN: The first field name.

7 */

8 {

9 _id: {

10 Quarter: '\$Quarter',

11 Color: '\$Color',

12 },

13 AverageSoldQuantity: {

14 \$avg: '\$Sold Quantity',

15 },

16 },

17 },

18 {

19 \$project:

20 /**

21 * specifications: The fields to

22 * include or exclude.

23 */

24 {

25 _id: 0,

26 Quarter: '\$_id.Quarter',

27 Color: '\$_id.Color',

28 AverageSoldQuantity: 1,

29 },

30 },

31]

PIPELINE OUTPUT

Sample of 10 documents

AverageSoldQuantity: 3486

Quarter: 2

Color: "Red"

AverageSoldQuantity: 6351

Quarter: 3

Color: "Blue"

AverageSoldQuantity: 2453

Quarter: 1

Color: "Red"

AverageSoldQuantity: 452

Quarter: 2

Color: "Blue"

AverageSoldQuantity: 5280

Quarter: 4

Color: "Blue"

AverageSoldQuantity: 814

Quarter: 1

Color: "Silver"

AverageSoldQuantity: 5788

Quarter: 3

+

Pipeline

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WIZARD

```

1  [
2  {
3    $group:
4    /**
5     * _id: The id of the group.
6     * fieldN: The first field name.
7     */
8    {
9      _id: {
10       Quarter: "$Quarter",
11       Color: "$Color",
12     },
13     AverageSoldQuantity: {
14       $avg: "$Sold Quantity",
15     },
16   },
17 },
18 {
19   $project:
20   /**
21    * specifications: The fields to
22    * include or exclude.
23    */
24   {
25     _id: 0,
26     Quarter: "$_id.Quarter",
27     Color: "$_id.Color",
28     AverageSoldQuantity: 1,
29   },
30 },
31 ]

```

PIPELINE OUTPUT

Sample of 10 documents

Quarter: 2
Color: "Blue"

AverageSoldQuantity: 5280
Quarter: 4
Color: "Blue"

AverageSoldQuantity: 814
Quarter: 1
Color: "Silver"

AverageSoldQuantity: 5788
Quarter: 3
Color: "Silver"

AverageSoldQuantity: 4511
Quarter: 4
Color: "Silver"

AverageSoldQuantity: 1039
Quarter: 2
Color: "Silver"

Silver

AverageSoldQuantity: 230
Quarter: 1
Color: "Blue"

Part 2: Aggregation: to calculate the average quarterly sold quantity of the blue color I followed below steps:

1. In the first stage I used the '\$match' aggregator.

Formula:

```
{
  Color: "Blue"
}
```

2. In the second stage I used the '\$group' aggregator.

Formula:

```
{
  _id: "$Color",
  AverageofQuantity: {
    $avg: "$Sold Quantity"
  }
}
```

Screenshot of Aggregator Pipeline

Output:

Pipeline **\$match** **\$group** [Generate aggregation](#) [Explain](#) [Export](#) [Run](#) [Options](#)

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```
1 /**
2  * query: The query in MQL.
3  */
4 {
5   Color: "Blue"
6 }
```

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

<pre>{ "_id": ObjectId('65b6fdaaefb51420f85db1ea'), "Color": "Blue", "Quarter": 1, "Sold Quantity": 230 }</pre>	<pre>{ "_id": ObjectId('65b6fdaaefb51420f85db1eb'), "Color": "Blue", "Quarter": 2, "Sold Quantity": 452 }</pre>	<pre>{ "_id": ObjectId('65b6fdaaefb51420f85db1ec'), "Color": "Blue", "Quarter": 3, "Sold Quantity": 300 }</pre>	<pre>{ "_id": ObjectId('65b6fdaaefb51420f85db1ed'), "Color": "Blue", "Quarter": 4, "Sold Quantity": 100 }</pre>
---	---	---	---

Stage 2 **\$group** [Output after \\$group stage \(Sample of 1 document\)](#)

```
1 /**
2  * _id: The id of the group.
3  * fieldN: The first field name.
4  */
5 {
6   _id: "$Color",
7   AverageofQuantity: {
8     $avg: "$Sold Quantity"
9   }
10 }
```

Output after **\$group** stage (Sample of 1 document)

```
{
  "_id": "Blue",
  "AverageofQuantity": 3078.25
}
```

Lab_1.Color

0 1
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```
1 [
2   {
3     $match:
4     /**
5      * query: The query in MQL.
6      */
7     {
8       Color: "Blue",
9     },
10  },
11  {
12    $group:
13    /**
14     * _id: The id of the group.
15     * fieldN: The first field name.
16     */
17    {
18      _id: "$Color",
19      AverageofQuantity: {
20        $avg: "$Sold Quantity",
21      },
22    },
23  },
24 ]
```

PIPELINE OUTPUT
Sample of 1 document

```
{
  "_id": "Blue",
  "AverageofQuantity": 3078.25
}
```

OUTPUT OPTIONS

Output:

Average Sold Quantity for Color Blue: 3078.25

