MongoDB $avg (aggregation)

- Available in Aggregation Pipeline $group and $project Stages
- Returns the average value of the numeric values
- $avg ignores non-numeric values

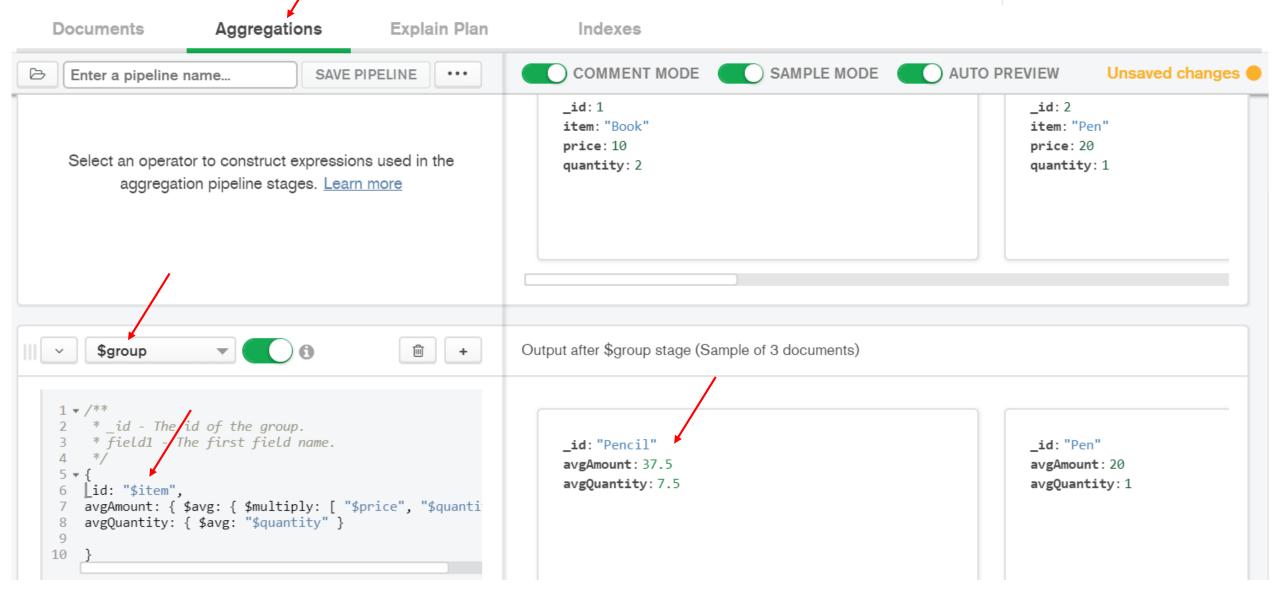# SoldItems Document Collection

```
{ "_id" : 1, "item" : "Book", "price" : 10, "quantity" : 2 }
{ "_id" : 2, "item" : "Pen", "price" : 20, "quantity" : 1 }
{ "_id" : 3, "item" : "Pencil", "price" : 5, "quantity" : 5 }
{ "_id" : 4, "item" : "Book", "price" : 10, "quantity" : 10 }
{ "_id" : 5, "item" : "Pencil", "price" : 5, "quantity" : 10 }
```

$group Stages

```
_id: "$item",
avgAmount: { $avg: { $multiply: [ "$price", "$quantity" ] } },
avgQuantity: { $avg: "$quantity" }
```

demo.SoldItems

TOTAL SIZE **560B**   AVG. SIZE **112B** | INDEXES **1**   TOTAL SIZE **8.0KB**   AVG. SIZE **8.0KB**

DOCUMENTS **5**

Documents   **Aggregations**   Explain Plan   Indexes

📁 | Enter a pipeline name… | SAVE PIPELINE | ⋯   🟢 COMMENT MODE   🟢 SAMPLE MODE   🟢 AUTO PREVIEW   **Unsaved changes** 🟠

Select an operator to construct expressions used in the aggregation pipeline stages. Learn more

```
_id: 1
item: "Book"
price: 10
quantity: 2
```

```
_id: 2
item: "Pen"
price: 20
quantity: 1
```

⋮ | ∨ | $group | ∨ | 🟢 ⓘ | 🗑 | +   Output after $group stage (Sample of 3 documents)

```
1 ▾ /**
2    * _id - The id of the group.
3    * field1 - The first field name.
4    */
5 ▾ {
6   _id: "$item",
7   avgAmount: { $avg: { $multiply: [ "$price", "$quanti
8   avgQuantity: { $avg: "$quantity" }
9
10 }
```

```
_id: "Pencil"
avgAmount: 37.5
avgQuantity: 7.5
```

```
_id: "Pen"
avgAmount: 20
avgQuantity: 1
```

Grades Document Collection

{ "_id": 1, "quizzes": [10, 6, 7], "labs": [5, 8], "final": 80, "midterm": 75 }
{ "_id": 2, "quizzes": [9, 10], "labs": [8, 8], "final": 95, "midterm": 80 }
{ "_id": 3, "quizzes": [4, 5, 5], "labs": [6, 5], "final": 78, "midterm": 70 }

$project Stage

```
quizAvg: { $avg: "$quizzes"},
labAvg: { $avg: "$labs" },
examAvg: { $avg: [ "$final", "$midterm" ] }
```

DOCUMENTS 3

TOTAL SIZE
336B

AVG. SIZE
112B

INDEXES 1

TOTAL SIZE
8.0KB

Documents **Aggregations** Explain Plan Indexes

Enter a pipeline name... SAVE PIPELINE ⋯ ◯ COMMENT MODE ◯ SAMPLE MODE ◯ AUTO PREVIEW **Unsaved ch**

```
                                                0: 10                                    0: 9
Select an operator to construct expressions used in the      1: 6                        1: 10
   aggregation pipeline stages. Learn more                   2: 7                  ▼ labs: Array
                                              ▼ labs: Array                             0: 8
                                                0: 5                                    1: 8
                                                1: 8                              final: 95
```

⌄ **$project** ◯ ⓘ 🗑 +

Output after $project stage (Sample of 3 documents)

```
1 ▾ /**
2    * specifications - The fields to
3    *   include or exclude.
4    */
5 ▾ {
6   quizAvg: { $avg: "$quizzes"},
7   labAvg: { $avg: "$labs" },
8   examAvg: { $avg: [ "$final", "$midterm" ] }
9
10  }
```

_id: 1
quizAvg: 7.666666666666667
labAvg: 6.5
examAvg: 77.5

_id: 2
quizAvg: 9.5
labAvg: 8
examAvg: 87.5