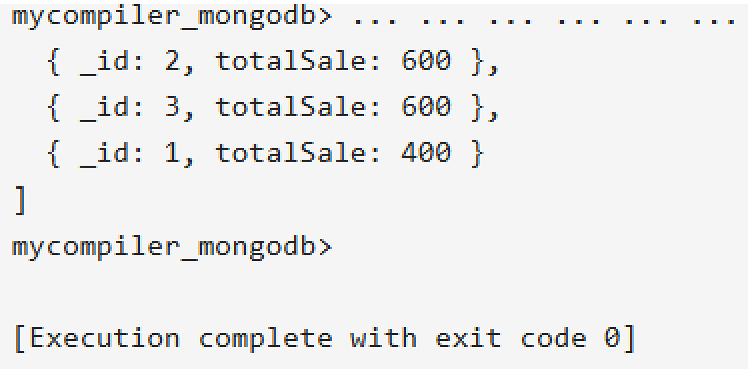
MongoDB Assignment 4

```
use saleDB
db.orders.insertMany([{
  "_id": 1,
  "customer_name": "Alice",
  "products": [
    {"product_id": "p1", "price": 100, "quantity": 2},
    {"product_id": "p2", "price": 200, "quantity": 1}
  ],
  "order_date": "2024-01-12",
  "status": "Completed"
},
{
  "_id": 2,
  "customer_name": "Bob",
  "products": [
    {"product_id": "p3", "price": 150, "quantity": 4}
  ],
  "order_date": "2024-01-15",
  "status": "Pending"
},
{
  "_id": 3,
  "customer_name": "Charlie",
  "products": [
    {"product_id": "p1", "price": 100, "quantity": 1},
    {"product_id": "p4", "price": 250, "quantity": 2}
  ],
  "order_date": "2024-01-16",
  "status": "Completed"
}])
```

1. Calculate Total Sales for Each Order.

```
db.orders.aggregate([
   { $unwind: "$products" },
   { $group: { _id: "$_id", totalSale: { $sum: { $multiply: ["$products.price",
   "$products.quantity"] } } } }
])
```

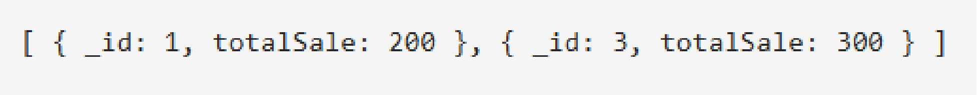


```
mycompiler_mongodb> ... ... ... ... ... ...
  { _id: 2, totalSale: 600 },
  { _id: 3, totalSale: 600 },
  { _id: 1, totalSale: 400 }
]
mycompiler_mongodb>

[Execution complete with exit code 0]
```

2. Calculate Average Order Value for Completed Orders.

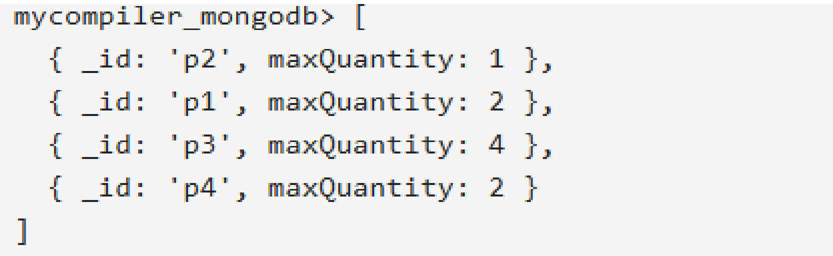
```
db.orders.aggregate([
   { $match: { status: "Completed" } },
   { $unwind: "$products" },
   { $group: { _id: "$_id", totalSale: { $avg: { $multiply: ["$products.price",
   "$products.quantity"] } } } }
])
```



```
[ { _id: 1, totalSale: 200 }, { _id: 3, totalSale: 300 } ]
```

3. Find the Maximum Quantity Sold per Product.

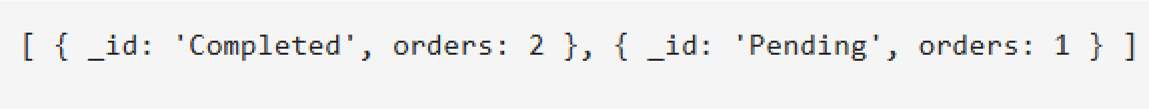
```
db.orders.aggregate([
   { $unwind: "$products" },
   { $group: { _id: "$products.product_id", maxQuantity: { $max:
   $products.quantity" } } }
])
```



```
mycompiler_mongodb> [
  { _id: 'p2', maxQuantity: 1 },
  { _id: 'p1', maxQuantity: 2 },
  { _id: 'p3', maxQuantity: 4 },
  { _id: 'p4', maxQuantity: 2 }
]
```

4. Find Total Number of Orders for Each Status.

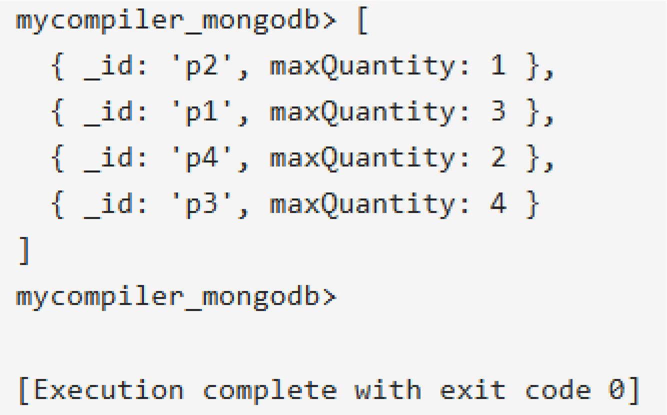
```
db.orders.aggregate([
   { $group: { _id: "$status", orders: { $sum: 1 } } }
])
```



```
[ { _id: 'Completed', orders: 2 }, { _id: 'Pending', orders: 1 } ]
```

5. Calculate Total Quantity of Products Sold Across All Orders.

```
db.orders.aggregate([
   { $unwind: "$products" },
   { $group: { _id: "$products.product_id", maxQuantity: { $sum:
   "$products.quantity" } } }
])
```

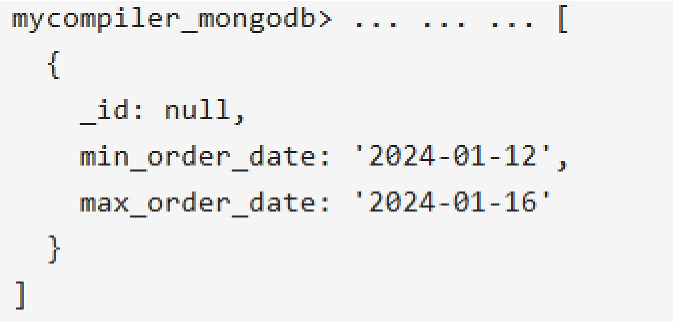


```
mycompiler_mongodb> [
  { _id: 'p2', maxQuantity: 1 },
  { _id: 'p1', maxQuantity: 3 },
  { _id: 'p4', maxQuantity: 2 },
  { _id: 'p3', maxQuantity: 4 }
]
mycompiler_mongodb>

[Execution complete with exit code 0]
```

6. Get Minimum and Maximum Order Dates.

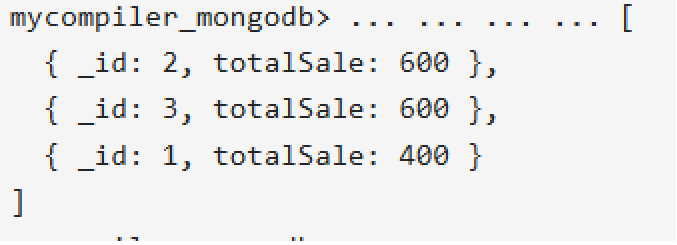
```
db.orders.aggregate([
   { $group: { _id: null, min_order_date: { $min: "$order_date" },
    max_order_date: { $max: "$order_date" } } }
])
```



```
mycompiler_mongodb> ... ... ... [
  {
    _id: null,
    min_order_date: '2024-01-12',
    max_order_date: '2024-01-16'
  }
]
```

7. Find Total Sales for Each Customer.

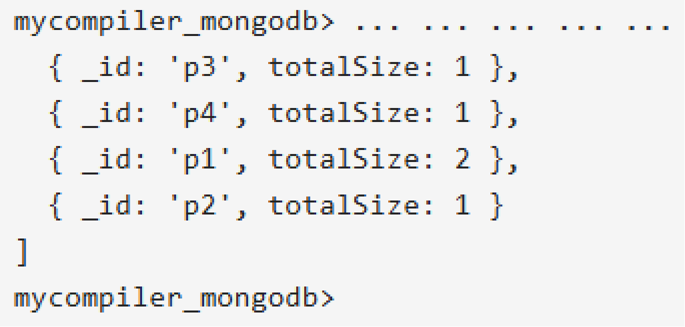
```
db.orders.aggregate([
   { $unwind: "$products" },
   { $group: { _id: "$_id", totalSale: { $sum: { $multiply: ["$products.price",
   "$products.quantity"] } } } }
])
```



```
mycompiler_mongodb> ... ... ... ... [
  { _id: 2, totalSale: 600 },
  { _id: 3, totalSale: 600 },
  { _id: 1, totalSale: 400 }
]
```

8. Calculate the Total Number of Distinct Products Sold.

```
db.orders.aggregate([
   { $unwind: "$products" },
   { $group: { _id: "$products.product_id", totalSize: { $sum: 1 } } }
])
```



```
mycompiler_mongodb> ... ... ... ... ...
  { _id: 'p3', totalSize: 1 },
  { _id: 'p4', totalSize: 1 },
  { _id: 'p1', totalSize: 2 },
  { _id: 'p2', totalSize: 1 }
]
mycompiler_mongodb>
```