

Mongodb Assignment 4

use salesDB

```
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"}])
```

```
{ acknowledged: true, insertedIds: { '0': 1, '1': 2, '2': 3 } }
```

1. Calculate Total Sales for Each Order.

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

```
{ _id: 3, totalSale: 600 },  
{ _id: 1, totalSale: 400 },  
{ _id: 2, totalSale: 600 }
```

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

3. Find the Maximum Quantity Sold per Product.

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

```
{ _id: 'p4', maxQuantity: 2 },
{ _id: 'p3', maxQuantity: 4 },
{ _id: 'p1', maxQuantity: 2 },
{ _id: 'p2', maxQuantity: 1 }
```

4. Find Total Number of Orders for Each Status.

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

```
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"}}}])
```

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

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"}}}])
```

```
{
  _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"]}}}}])
```

```
{ _id: 3, totalSale: 600 },
{ _id: 1, totalSale: 400 },
{ _id: 2, totalSale: 600 }
```

8. Calculate the Total Number of Distinct Products Sold.

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

```
{ _id: 'p3', totalSize: 1 },
{ _id: 'p1', totalSize: 2 },
{ _id: 'p4', totalSize: 1 },
{ _id: 'p2', totalSize: 1 }
```