

____ ASSIGNMENT 4 ____

Database & Collections:

- Use salesDB
- db.createCollection("orders")

```
salesDB> db.orders.find()
[
  {
    _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'
  }
]
salesDB> _
```

ques1- Calculate Total Sales for Each Order.

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

```
[
  { _id: 1, customer_name: 'Alice', Total_Sales: 400 },
  { _id: 3, customer_name: 'Charlie', Total_Sales: 600 },
  { _id: 2, customer_name: 'Bob', Total_Sales: 600 }
]
```

ques2-Calculate Average Order Value for Completed Orders.

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

```
[ { _id: null, average_order: 500 } ]
salesDB> |
```

ques3- Find the Maximum Quantity Sold per Product.

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

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

ques4-Find Total Number of Orders for Each Status.

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

```
{ _id: 'Completed', Total_orders: 2 },
{ _id: 'Pending', Total_orders: 1 }
```

ques5-Calculate Total Quantity of Products Sold Across All Orders.

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

```
{
  "_id": { "product_id": "p2", "price": 200, "quantity": 1 },
  "Total_quantity": 1
},
{
  "_id": { "product_id": "p1", "price": 100, "quantity": 1 },
  "Total_quantity": 1
},
{
  "_id": { "product_id": "p3", "price": 150, "quantity": 4 },
  "Total_quantity": 4
},
{
  "_id": { "product_id": "p4", "price": 250, "quantity": 2 },
  "Total_quantity": 2
},
{
  "_id": { "product_id": "p1", "price": 100, "quantity": 2 },
  "Total_quantity": 2
}
```

ques6-Get Minimum and Maximum Order Dates.

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

```
[ { _id: 'products', Distinct_products: 2 } ]
salesDB> |
```

ques7-Find Total Sales for Each Customer.

- `db.orders.aggregate([{ $unwind: "$products" }, { $group: { _id: "$customerId", totalSales: { $sum: { $multiply: ["$products.price", "$products.quantity"] } } }, { $sort: { totalSales: -1 } }])`

```
[ { _id: null, totalSales: 1600 } ]
salesDB> |
```

ques8-Calculate the Total Number of Distinct Products Sold.

- `db.orders.aggregate([{$unwind: "$products"},{$group: {_id: null,distinctProducts: { $addToSet: "$products.productId" } }},{$project: {totalDistinctProducts: { $size: "$distinctProducts" } } }])`

```
[ { _id: null, totalDistinctProducts: 0 } ]  
salesDB>
```

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