MongoDB Assignment 4

1. Calculate Total Sales for Each Order.

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

```
salesDB> db.orders.aggregate([{$unwind:"$products"},
...                     {$group:{_id:"$_id",
...                      total_sales:{$sum:{$multiply:
...                       ["$products.price","$products.quantity"]}}}}])
[
  { _id: 1, total_sales: 400 },
  { _id: 2, total_sales: 600 },
  { _id: 3, total_sales: 600 }
]
```

0. Calculate Average Order Value for Completed Orders.

```
db.orders.aggregate([{$match:{status:"completed"}},{$unwind:"$products"},
    {$group:{_id:"$_id",
    total_sales:{$sum:{$multiply:
     ["$products.price","$products.quantity"]}}}},
    {$group:{_id:null,avg_sale:{$avg:"$total_sales"}}}])
```

```
... ]);
[ { _id: null, avg_order_value: 500 } ]
salesDB>
```

0. Find the Maximum Quantity Sold per Product.

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

```
salesDB> db.orders.aggregate([{ $unwind: "$products" }, { $group: { _id: "$products.p
roduct_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 }
]
```

0. Find Total Number of Orders for Each Status.

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

```
salesDB> db.orders.aggregate([{$group:{_id:"$status",
...                                no_of_orders:{$sum:1}}}])
[
  { _id: 'Pending', no_of_orders: 1 },
  { _id: 'Completed', no_of_orders: 2 }
]
```

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

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

```
salesDB> db.orders.aggregate([{$unwind:"$products"},{$group:{_id:null,
...                               total_quantity:{$sum:"$products.quantity"}}}])
[ { _id: null, total_quantity: 10 } ]
```

0. Get Minimum and Maximum Order Dates.

```
db.orders.aggregate([{$sort:{"order_date":-1}},
            {$group:{_id:null,
          max_date:{$first:"$order_date"},
          min_date:{$last:"$order_date"}}}])
```

```
salesDB> db.orders.aggregate([{$sort:{"order_date":-1}},
...                       {$group:{_id:null,
...                  max_date:{$first:"$order_date"},
...                  min_date:{$last:"$order_date"}}}])
[ { _id: null, max_date: '2024-01-16', min_date: '2024-01-12' } ]
```

0. Find Total Sales for Each Customer.

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

```
salesDB> db.orders.aggregate([{$unwind:"$products"},
...                       {$group:{_id:"$customer_name",
...                        total_sales:{$sum:{$multiply:
...                         ["$products.price","$products.quantity"]}}}}])
[
  { _id: 'Bob', total_sales: 600 },
  { _id: 'Charlie', total_sales: 600 },
  { _id: 'Alice', total_sales: 400 }
]
```

0. Calculate the Total Number of Distinct Products Sold.

```
db.orders.aggregate([{$unwind:"$products"},

            {$group:{_id:"$products.product_id"}},

            {$group:{_id:null,distinct_products_sold:{$sum:1}}}])
```

```
salesDB> db.orders.aggregate([{$unwind:"$products"},
...                           {$group:{_id:"$products.product_id"}},
...                           {$group:{_id:null,distinct_products_sold:{$sum:1}}}])
[ { _id: null, distinct_products_sold: 4 } ]
```