MongoDB Assignment 3

use Sales_Data

switched to db Sales_Data

Sales_Data> db.createCollection("sales")

Sales_Data>
db.sales.insertMany([{"_id":1,"product":"Laptop","category":"Electronics","price":800,"quantity":5,"date":ISODate("2024-03-01T10:00:00Z"),"store":"A"},

{"_id":2,"product":"phone","category":"Electronics","price":600,"quantity":10,"date":ISODate("2024-03-02T12:00:00Z"),"store":"B"},

{"_id":3,"product":"TV","category":"Electronics","price":1200,"quantity":3,"date":ISODate("2024-03-03T15:00:00Z"),"store":"A"},

{"_id":4,"product":"Shoes","category":"Fashion","price":50,"quantity":20,"date":ISODate("2024-03-04T16:00:00Z"),"store":"C"},

{"_id":5,"product":"Watch","category":"Fashion","price":150,"quantity":7,"date":ISODate("2024-03-05T18:00:00Z"),"store":"B"}])

```
{
  acknowledged: true,
  insertedIds: { '0': 1, '1': 2, '2': 3, '3': 4, '4': 5 }
}
```

1. Total sales per product

Sales_Data> db.sales.aggregate([{$group:{_id:"$product",quantity:{$push:"$quantity"}}}])

```
[
  { _id: 'phone', quantity: [ 10 ] },
  { _id: 'TV', quantity: [ 3 ] },
  { _id: 'Watch', quantity: [ 7 ] },
  { _id: 'Laptop', quantity: [ 5 ] },
  { _id: 'Shoes', quantity: [ 20 ] }
]
```

2. Total revenue per product.

Sales_Data> db.sales.aggregate([{$group:{_id:"$product",totalRevenue:{$sum:{$multiply:["$quantity","$price"]}}}}])

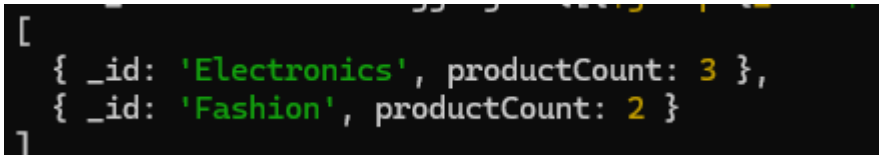
```
[
  { _id: 'Laptop', totalRevenue: 4000 },
  { _id: 'TV', totalRevenue: 3600 },
  { _id: 'phone', totalRevenue: 6000 },
  { _id: 'Watch', totalRevenue: 1050 },
  { _id: 'Shoes', totalRevenue: 1000 }
]
```

3. Total revenue per category.

```
Sales_Data>
db.sales.aggregate([{$group:{_id:"$category",tota
lRevenue:{$sum:{$multiply:["$quantity","$price"]}
}}}])
```

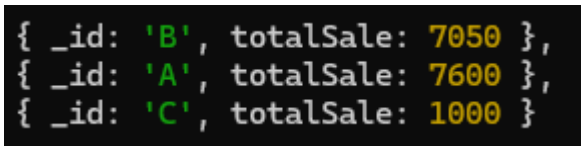
4. Count of products per category.

```
Sales_Data>
db.sales.aggregate([{$group:{_id:"$category",pro
ductCount:{$sum:1}}}])
```



5. Store-wise total sales.

```
db.sales.aggregate([{$group:{_id:"$store",totalSal
e:{$sum:{$multiply:["$price","$quantity"]}}}}])
```



6. Average price of products per category.

```
db.sales.aggregate([{$group:{_id:{categorty:"$category",product:"$product"},avgPrice:{$avg:"$price"}}}])
```

```
{
  _id: { categorty: 'Electronics', product: 'phone' },
  avgPrice: 600
},
{ _id: { categorty: 'Fashion', product: 'Shoes' }, avgPrice: 50 },
{ _id: { categorty: 'Fashion', product: 'Watch' }, avgPrice: 150 },
{ _id: { categorty: 'Electronics', product: 'TV' }, avgPrice: 1200 },
{
  _id: { categorty: 'Electronics', product: 'Laptop' },
  avgPrice: 800
}
```

7. Top-selling product.

```
Sales_Data> db.sales.aggregate([{$group:{_id:"$product",maximum_sale:{$max:{$sum:"$quantity"}}}},{$sort:{maximum_sale:-1}},{$limit:1}])
```

```
[ { _id: 'Shoes', maximum_sale: 20 } ]
```

8. Total sales for Electronics category.

```
db.sales.aggregate([{$match:{category:"Electronics"}},{$group:{_id:null,total_sale:{$sum:"$quantity"}}}])
```

```
[ { _id: null, total_sale: 18 } ]
```

9. Sales trend over time (day-wise total sales).

```
db.sales.aggregate([{$group:{_id:{$dateToString:{format:"%Y-%m-%d",date:"$date"}},totalSales:{$sum:{$multiply:["$price","$quantity"]}}}},{$sort:{_id:1}}])
```

```
{ _id: '2024-03-01', totalSales: 4000 },
{ _id: '2024-03-02', totalSales: 6000 },
{ _id: '2024-03-03', totalSales: 3600 },
{ _id: '2024-03-04', totalSales: 1000 },
{ _id: '2024-03-05', totalSales: 1050 }
```

10. Highest revenue-generating product.

```
Sales_Data> db.sales.aggregate([{$group:{_id:"$product",totalRevenue:{$sum:{$multiply:["$quantity","$price"]}}}},{$sort:{totalRevenue:-1}},{$limit:1}])
```

```
[ { _id: 'phone', totalRevenue: 6000 } ]
```

11. Average revenue per sale.

```
db.sales.aggregate([{$group:{_id:null,avgRevenue:{$avg:{$sum:{$multiply:["$price","$quantity"]}}}}}])
```

```
[ { _id: null, avgRevenue: 3130 } ]
```

12. Sales performance per store.

```
db.sales.aggregate([{$group:{_id:"$store",sales:{$sum:{$multiply:["$price","$quantity"]}}}}])
```

```
{ _id: 'B', sales: 7050 },
{ _id: 'A', sales: 7600 },
{ _id: 'C', sales: 1000 }
```

13. Products sold more than 5 times.

```
db.sales.aggregate([{$group:{_id:"$product",quantity:{$sum:"$quantity"}}},{$match:{quantity:{$gt:5}}}])
```

```
{ _id: 'phone', quantity: 10 },
{ _id: 'Watch', quantity: 7 },
{ _id: 'Shoes', quantity: 20 }
```

14. Least sold product.

```
db.sales.aggregate([{$group:{_id:{year:{$year:"$date"},month:{$month:"$date"}},sales:{$sum:{$multiply:["$quantity","$price"]}}}},{$sort:{sales:1}}])
```

```
[ { _id: { year: 2024, month: 3 }, sales: 15650 } ]
```

15. Monthly sales summary.

```
db.sales.aggregate([{$group:{_id:{year:{$year:"$date"},month:{$month:"$date"}},sales:{$sum:{$multiply:["$quantity","$price"]}}}},{$sort:{sales:1}}])
```

```
[ { _id: { year: 2024, month: 3 }, sales: 15650 } ]
```

16. Number of unique products sold.

```
db.sales.aggregate([{$count:"product"}])
```

```
[ { product: 5 } ]
```

17. Maximum and minimum priced product.

```
db.sales.aggregate([{$group:{_id:"$product",minPrice:{$min:"$price"}}},{$sort:{minPrice:1}},{$limit:1}])
```

```
db.sales.aggregate([{$group:{_id:"$product",maxPrice:{$max:"$price"}}},{$sort:{maxPrice:-1}},{$limit:1}])
```

```
[ { _id: 'Shoes', minPrice: 50 } ]
```

```
[ { _id: 'TV', maxPrice: 1200 } ]
```

18. Total revenue per product in descending order.

```
db.sales.aggregate([{$group:{_id:"$product",totalRevenue:{$sum:{$multiply:["$price","$quantity"]}}}},{$sort:{totalRevenue:-1}}])
```

```
{ _id: 'phone', totalRevenue: 6000 },
{ _id: 'Laptop', totalRevenue: 4000 },
{ _id: 'TV', totalRevenue: 3600 },
{ _id: 'Watch', totalRevenue: 1050 },
{ _id: 'Shoes', totalRevenue: 1000 }
```

19. Revenue generated per store per category.

```
db.sales.aggregate([{$group:{_id:{store:"$store",category:"$category"},revenue:{$sum:{$multiply:["$price","$quantity"]}}}}])
```

```
{ _id: { store: 'B', category: 'Fashion' }, revenue: 1050 },
{ _id: { store: 'C', category: 'Fashion' }, revenue: 1000 },
{ _id: { store: 'B', category: 'Electronics' }, revenue: 6000 },
{ _id: { store: 'A', category: 'Electronics' }, revenue: 7600 }
```