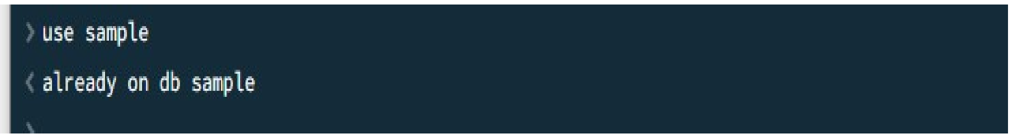
31-07-2024 DAY 5

DAILY TASK

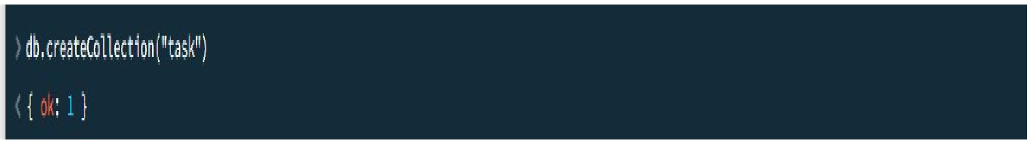
1) Insert documents into a sales collection with fields such as item, quantity, price, and date.

- **Using the database Sample**



```
> use sample
< already on db sample
>
```

- **Creating the collection called “Task”**



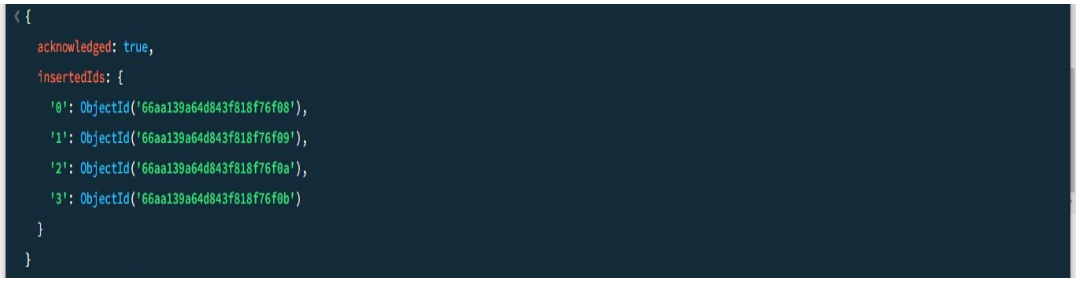
```
> db.createCollection("task")
< { ok: 1 }
```

- **Inserting the data into the collection**

Query:

```
db.task.insertMany([
    { item: "A", quantity: 20, price: 200, date: new Date("2023-01-15") },
    { item: "B", quantity: 15, price: 250, date: new Date("2023-02-18") },
    { item: "C", quantity: 10, price: 120, date: new Date("2023-02-20") },
    { item: "D", quantity: 5, price: 330, date: new Date("2023-03-25") },
]);
```

OUTPUT:



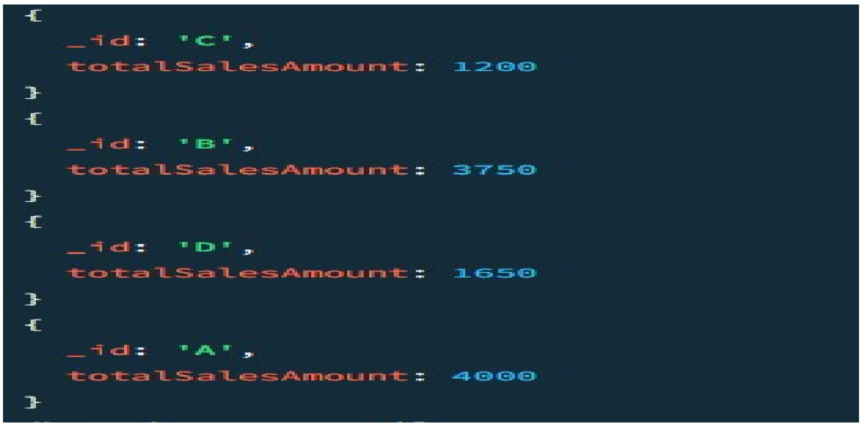
```
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('66aa139a64d843f818f76f08'),
      '1': ObjectId('66aa139a64d843f818f76f09'),
      '2': ObjectId('66aa139a64d843f818f76f0a'),
      '3': ObjectId('66aa139a64d843f818f76f0b')
    }
  }
```

2) Write aggregation pipelines to:
 Calculate the total sales amount for each item.

QUERY:

```
db.task.aggregate([
    {
        $group: {
            _id: "$item",
            totalSalesAmount: { $sum: { $multiply: ["$quantity", "$price"] } }
        }
    }
]);
```

OUTPUT:



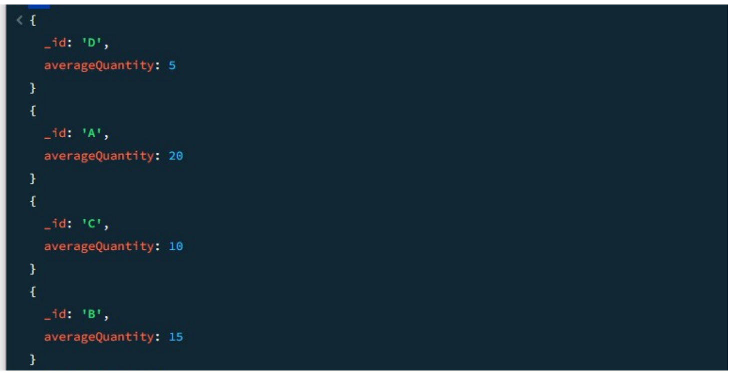
```
{
  _id: 'C',
  totalSalesAmount: 1200
}
{
  _id: 'B',
  totalSalesAmount: 3750
}
{
  _id: 'D',
  totalSalesAmount: 1650
}
{
  _id: 'A',
  totalSalesAmount: 4000
}
```

3) Find the average quantity sold per item

QUERY:

```
db.task.aggregate([
    {
        $group: {
            _id: "$item",
            averageQuantity: { $avg: "$quantity" }
        }
    }
]);
```

OUTPUT:



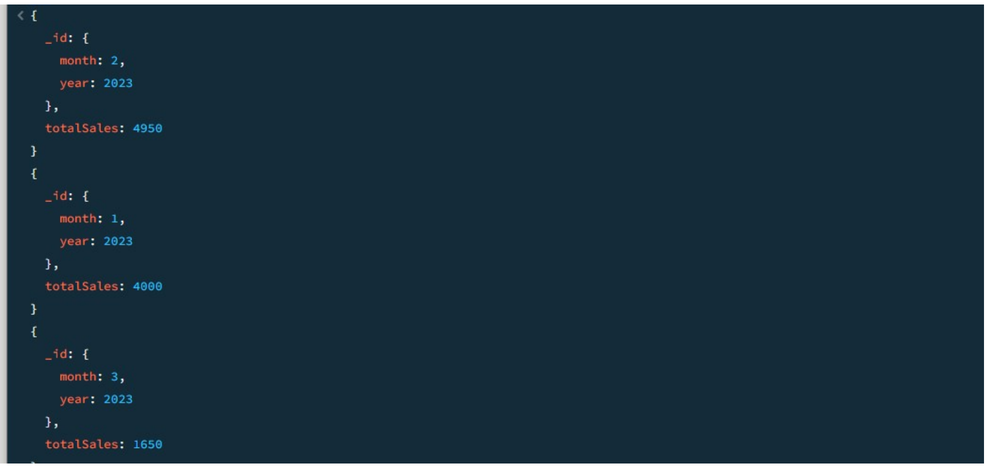
```
< {
    _id: 'D',
    averageQuantity: 5
  }
  {
    _id: 'A',
    averageQuantity: 20
  }
  {
    _id: 'C',
    averageQuantity: 10
  }
  {
    _id: 'B',
    averageQuantity: 15
  }
```

4) Group sales by month and calculate the total sales foreach month and sort from the largest value

QUERY:

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

OUTPUT:



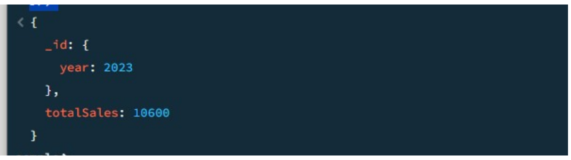
```
< {
    _id: {
      month: 2,
      year: 2023
    },
    totalSales: 4950
  }
  {
    _id: {
      month: 1,
      year: 2023
    },
    totalSales: 4000
  }
  {
    _id: {
      month: 3,
      year: 2023
    },
    totalSales: 1650
```

5) Display which year has the maximum sales

QUERY:

```
db.task.aggregate([
    {
        $group: {
            _id: { year: { $year: "$date" } },
            totalSales: { $sum: { $multiply: ["$quantity", "$price"] } }
        }
    },
    {
        $sort: { totalSales: -1 }
    },
    {
        $limit: 1
    }
]);
```

OUTPUT:



```
< {
    _id: {
      year: 2023
    },
    totalSales: 10600
  }
```