

Project Title: “MediMart: Digital Pharmacy Inventory and Order Management System”

Milestone: NoSQL Implementation

Group 7

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NOSQL IMPLEMENTATION IN MONGODB FOR MEDICART DATABASE:

We have imported few tables from our MYSQL database to MongoBD. The tables were imported as .csv files and loaded into MongoDB. Following tables and relationships were imported :

Tables:

1. Pickup
2. Product
3. Payment
4. Patient
5. Ordered_from
6. Medical_shop
7. Login_id
8. Employees
9. Delivery
10. Consults
11. Consultant_Doctor
12. Cart

Followings Queries were performed to get insights from the NOSQL database:

1. Retrieve the count of products in each category:

```
db.product.aggregate([
  {
    $group: {
      _id: "$Category_name",
      ProductCount: { $sum: 1 }
    }
  }
]);
```

```
_id: 'Antibiotics',
ProductCount: 27
}
{
  _id: 'Vitamins',
  ProductCount: 19
}
{
  _id: 'Painkillers',
  ProductCount: 14
}
```

2. Retrieve Top 10 Most Recent Orders:

```
db.delivery.aggregate([
  {
    $sort: { Order_date: -1 }
  },
  { $limit: 10 },
  {
    $project: {
      _id: 0,
      Order_ID: "$Order_ID",
      Order_date: "$Order_date",
      Patient_ID: "$Patient_ID",
      Shop_ID: "$Shop_ID" }
  }
]);
```

```
< {
  Order_ID: 'M21961',
  Order_date: '8/19/23',
  Patient_ID: 'S5609',
  Shop_ID: 'S66517D'
}
{
  Order_ID: 'H7101',
  Order_date: '8/16/23',
  Patient_ID: 'S82854J',
  Shop_ID: 'H1022'
}
{
  Order_ID: 'S51002D',
  Order_date: '8/12/23',
  Patient_ID: 'T2176XS',
  Shop_ID: 'S82011P'
}
{
  Order_ID: 'S92065A',
  Order_date: '8/10/23',
  Patient_ID: 'S96802D',
  Shop_ID: 'S72309F'
}
{
  Order_ID: 'S93504S',
  Order_date: '8/10/23',
  Patient_ID: 'H26049',
  Shop_ID: 'S63043S'
}
```

```

{
  Order_ID: 'Z053',
  Order_date: '7/13/23',
  Patient_ID: 'T471X',
  Shop_ID: 'T2019XA'
}
{
  Order_ID: '09984',
  Order_date: '6/17/23',
  Patient_ID: 'S86011D',
  Shop_ID: 'S06827S'
}
{
  Order_ID: 'V272',
  Order_date: '6/15/23',
  Patient_ID: 'T23221D',
  Shop_ID: 'S72019'
}
{
  Order_ID: 'S12650G',
  Order_date: '5/6/23',
  Patient_ID: 'S52309',
  Shop_ID: 'S66517D'
}
{
  Order_ID: 'M84759S',
  Order_date: '5/31/23',
  Patient_ID: 'A59',
  Shop_ID: 'S72309F'
}

```

3. Retrieve 10 results for patients who have placed any orders

```

db.patient.find(
  {
    _id: {
      $nin: db.ordered_from.distinct("patient_id")
    }
  },
  {
    Patient_ID: 1,
    Gender: 1,
    Patient_Name: 1,
    Insurance_No: 1,
    _id: 0
  }).limit(10);

```

```
< {
  Patient_ID: 'S79002G',
  Gender: 'Female',
  Patient_Name: 'Shelba',
  Insurance_No: 'M216X9'
}
{
  Patient_ID: 'Q30',
  Gender: 'Male',
  Patient_Name: 'Win',
  Insurance_No: 'Y00XXS'
}
{
  Patient_ID: 'T23221D',
  Gender: 'Female',
  Patient_Name: 'Rani',
  Insurance_No: 'S62347B'
}
{
  Patient_ID: 'S5609',
  Gender: 'Female',
  Patient_Name: 'Tove',
  Insurance_No: 'S72462H'
}
{
  Patient_ID: 'S86011D',
  Gender: 'Male',
  Patient_Name: 'Caleb',
  Insurance_No: 'T22099'
}
```

```

{
  Patient_ID: 'T382X1',
  Gender: 'Male',
  Patient_Name: 'Papageno',
  Insurance_No: 'R701'
}
{
  Patient_ID: 'S82202K',
  Gender: 'Female',
  Patient_Name: 'Cindee',
  Insurance_No: 'Y9375'
}
{
  Patient_ID: 'G803',
  Gender: 'Female',
  Patient_Name: 'Jobye',
  Insurance_No: 'V00211A'
}
{
  Patient_ID: 'M85479',
  Gender: 'Male',
  Patient_Name: 'Wallas',
  Insurance_No: 'I6523'
}
{
  Patient_ID: 'Z818',
  Gender: 'Female',
  Patient_Name: 'Roch',
  Insurance_No: 'T3130'
}

```

4. Retrieve the Latest Order for Each Patient:

```

db.delivery.aggregate([
  {
    $sort: { Order_date: -1 }
  },
  {
    $group: {
      _id: "$Patient_ID",
      LatestOrder: { $first: "$$ROOT" }
    }
  },
  {
    $lookup: {
      from: "product",
      localField: "LatestOrder.Order_ID",
      foreignField: "Order_ID",
      as: "ProductDetails"
    }
  },
  {
    $unwind: "$ProductDetails"
  },

```

```

{
  $project: {
    _id: 0,
    Patient_ID: "$_id",
    Shop_ID: "$LatestOrder.Shop_ID",
    Product_Id: "$ProductDetails.Product_ID",
    Category_name: "$ProductDetails.Category_name",
    LatestOrderDate: "$LatestOrder.Order_date"
  }
},
{
  $limit: 10
}
]);

```

```

  Patient_ID: 'Q30',
  Shop_ID: 'H25',
  Product_Id: 'T56813D',
  Category_name: 'Vitamins',
  LatestOrderDate: '5/26/23'
}
{
  Patient_ID: 'S82854J',
  Shop_ID: 'H1022',
  Product_Id: 'S3217XB',
  Category_name: 'Antibiotics',
  LatestOrderDate: '8/16/23'
}
{
  Patient_ID: 'S82854J',
  Shop_ID: 'H1022',
  Product_Id: 'S01101A',
  Category_name: 'Painkillers',
  LatestOrderDate: '8/16/23'
}
{
  Patient_ID: 'S82854J',
  Shop_ID: 'H1022',
  Product_Id: 'S53441A',
  Category_name: 'Painkillers',
  LatestOrderDate: '8/16/23'
}
{
  Patient_ID: 'S82854J',
  Shop_ID: 'H1022',
  Product_Id: 'S52325Q',
  Category_name: 'Antibiotics',
  LatestOrderDate: '8/16/23'
}

```

```

    Patient_ID: 'T471X',
    Shop_ID: 'T2019XA',
    Product_Id: 'T82858S',
    Category_name: 'Antibiotics',
    LatestOrderDate: '7/13/23'
  }
  {
    Patient_ID: 'S5609',
    Shop_ID: 'S66517D',
    Product_Id: 'S59002A',
    Category_name: 'Vitamins',
    LatestOrderDate: '8/19/23'
  }
  {
    Patient_ID: 'H26049',
    Shop_ID: 'S63043S',
    Product_Id: 'Q671',
    Category_name: 'Antibiotics',
    LatestOrderDate: '8/10/23'
  }
  {
    Patient_ID: 'S86011D',
    Shop_ID: 'S06827S',
    Product_Id: 'T485X5D',
    Category_name: 'Antibiotics',
    LatestOrderDate: '6/17/23'
  }
  {
    Patient_ID: 'S52309',
    Shop_ID: 'S66517D',
    Product_Id: 'V5959',
    Category_name: 'Painkillers',
    LatestOrderDate: '5/6/23'
  }

```

5. Retrieve the top 10 best-selling products:

```

db.ordered_from.aggregate([
  {
    $group: {
      _id: "$Product_ID",
      TotalQuantitySold: { $sum: 1 }
    }
  },
  {
    $lookup: {
      from: "product",
      localField: "_id",
      foreignField: "Product_ID",
      as: "productDetails"
    }
  }
])

```



```

    }},
  {
    $unwind: "$productDetails" },
  {
    $project: {
      _id: 0,
      Product_ID: "$_id",
      Category_Name: "$productDetails.Category_name",
      Manufacturer: "$productDetails.Manufacturer",
      TotalQuantitySold: 1
    } },
  {
    $sort: { TotalQuantitySold: -1 } },
  {
    $limit: 10
  }
});

```

```

{
  TotalQuantitySold: 6,
  Product_ID: 'T82858S',
  Category_Name: 'Antibiotics',
  Manufacturer: 'Uriel Pharmacy Inc.'
}
{
  TotalQuantitySold: 5,
  Product_ID: 'O328XX1',
  Category_Name: 'Antibiotics',
  Manufacturer: 'Nelco Laboratories, Inc.'
}
{
  TotalQuantitySold: 5,
  Product_ID: 'B509',
  Category_Name: 'Antibiotics',
  Manufacturer: 'Physicians Total Care, Inc.'
}
{
  TotalQuantitySold: 4,
  Product_ID: 'S72366C',
  Category_Name: 'Antibiotics',
  Manufacturer: 'A&Z Pharmaceutical, Inc.'
}
{
  TotalQuantitySold: 1,
  Product_ID: 'K958',
  Category_Name: 'Antibiotics',
  Manufacturer: 'STAT Rx USA LLC'
}

```

```

{
  TotalQuantitySold: 1,
  Product_ID: 'V5959',
  Category_Name: 'Painkillers',
  Manufacturer: 'Talmocom Co., Ltd'
}
{
  TotalQuantitySold: 1,
  Product_ID: 'S01101A',
  Category_Name: 'Painkillers',
  Manufacturer: 'Aaron Industries, Inc.'
}
{
  TotalQuantitySold: 1,
  Product_ID: 'X008XXD',
  Category_Name: 'Vitamins',
  Manufacturer: 'Budpak Inc.'
}
{
  TotalQuantitySold: 1,
  Product_ID: 'S3217XB',
  Category_Name: 'Antibiotics',
  Manufacturer: 'Melaleuca Inc.'
}
{
  TotalQuantitySold: 1,
  Product_ID: 'T17910',
  Category_Name: 'Vitamins',
  Manufacturer: 'Cantrell Drug Company'
}

```

6. Retrieve orders placed by patients whose payment status is failed or pending

```

db.delivery.aggregate([
  {
    $lookup: {
      from: "patient",
      localField: "Patient_ID",
      foreignField: "Patient_ID",
      as: "patientInfo"
    },
  },
  {
    $lookup: {

```

```
    from: "payment",
    localField: "Order_ID",
    foreignField: "Order_ID",
    as: "paymentInfo"
  }},
{
  $match: {
    "paymentInfo.Payment_status": { $in: ["Failed", "Pending"] }
  }},
{
  $project: {
    _id: 0, // Exclude the _id field
    Order_ID: "$Order_ID",
    Order_Date: "$Order_date",
    Patient_ID: "$Patient_ID",
    Patient_name: { $arrayElemAt: ["$patientInfo.Patient_Name", 0] },
    Payment_Status: "$paymentInfo.Payment_status"
  }},
{
  $limit: 10
})
```

```
Order_ID: 'S82822K',
Order_Date: '11/1/23',
Patient_ID: 'S79002G',
Patient_name: 'Shelba',
Payment_Status: [
  'Pending'
]
}
{
Order_ID: 'V55',
Order_Date: '3/23/23',
Patient_ID: 'Q30',
Patient_name: 'Win',
Payment_Status: [
  'Failed'
]
}
{
Order_ID: 'V272',
Order_Date: '6/15/23',
Patient_ID: 'T23221D',
Patient_name: 'Rani',
Payment_Status: [
  'Failed'
]
}
{
Order_ID: 'M21961',
Order_Date: '8/19/23',
Patient_ID: 'S5609',
Patient_name: 'Tove',
Payment_Status: [
  'Pending'
]
```

```

    Order_ID: '09984',
    Order_Date: '6/17/23',
    Patient_ID: 'S86011D',
    Patient_name: 'Caleb',
    Payment_Status: [
      'Pending'
    ]
  }
  {
    Order_ID: 'T881',
    Order_Date: '3/8/23',
    Patient_ID: 'T382X1',
    Patient_name: 'Papageno',
    Payment_Status: [
      'Failed'
    ]
  }
  {
    Order_ID: '0411425',
    Order_Date: '1/3/23',
    Patient_ID: 'M85479',
    Patient_name: 'Wallas',
    Payment_Status: [
      'Failed'
    ]
  }
  {
    Order_ID: 'T20419A',
    Order_Date: '1/30/23',
    Patient_ID: 'Z818',
    Patient_name: 'Roch',
    Payment_Status: [
      'Failed'
    ]
  }

```

7. Query to Retrieve Top 5 Patients with the Highest Total Amount

```

db.payment.aggregate([
  {
    $group: {
      _id: "$Patient_ID",
      TotalAmountSpent: { $sum: "$Total_amt" }
    }
  },
  {
    $sort: { TotalAmountSpent: -1 }
  },

```

```
{
  $limit: 5
}
])
```

```
< {
  _id: 'S92213S',
  TotalAmountSpent: 9788.32
}
{
  _id: 'W458',
  TotalAmountSpent: 9780
}
{
  _id: 'T23139',
  TotalAmountSpent: 9494.09
}
{
  _id: 'S82854J',
  TotalAmountSpent: 9455.23
}
{
  _id: 'Z4901',
  TotalAmountSpent: 9334.94
}
```

8. Query to Retrieve Orders Delivered in a Specific Location:

```
db.delivery.find({ "Delivery_Address": "R802", "Order_status": "Delivered" })
```

```
< {
  _id: ObjectId("656a7e9f3a43003b64f88360"),
  Delivery_Address: 'R802',
  Order_ID: 'S82822K',
  Order_date: '11/1/23',
  Order_status: 'Delivered',
  Shop_ID: 'S66517D',
  Patient_ID: 'S79002G',
  Emp_ID: 'T38811D'
}
```