**ST1501 CA2 Individual Tasks**

**Class: DAAA/2B/23**

**Student No: 2341475**

**Student Name: Choy Jee Hung Caleb**

**Individual Task Solutions**

1. Submit mongo.sql with queries for data required to setup the 2 collections in MongoDB. Hint: find out how to format SQL query results as JSON format.

After setting up your Mongo Database and insert data, count the number of items in each collection to show that your Mongo database setup is correct.

|  |  |  |
| --- | --- | --- |
| Collection | MongoDB command for counting | Results |
| Model | db.Model.countDocuments() | 82 |
| Customer | db.Customer.countDocuments() | 73 |

1. Show your MongoDB command and results for each sub question. Do format your Mongo Command nicely.

|  |  |  |
| --- | --- | --- |
| Question | MongoDB command | Results |
| Q1 | db.Model.find({  TotalOrdersAssigned: { $lt: 20 }  }, {  ModelID: 1,  TotalOrdersAssigned: 1,  \_id: 0  }).sort({  TotalOrdersAssigned: -1,  ModelID: 1  }) | [  { ModelID: 'm0066', TotalOrdersAssigned: 19 },  { ModelID: 'm0005', TotalOrdersAssigned: 18 },  { ModelID: 'm0047', TotalOrdersAssigned: 18 },  { ModelID: 'm0046', TotalOrdersAssigned: 17 },  { ModelID: 'm0013', TotalOrdersAssigned: 16 },  { ModelID: 'm0074', TotalOrdersAssigned: 15 }  ] |
| Q2 | db.Model.aggregate([  {  $group: {  \_id: "$ModelType",  TotalAssignments: { $sum: "$TotalOrdersAssigned" },  AverageAccuracy: { $avg: "$Accuracy" }  }  },  {  $project: {  \_id: 0,  ModelType: "$\_id",  TotalAssignments: 1,  AverageAccuracy: { $round: ["$AverageAccuracy", 2] }  }  }  ]) | [  {  TotalAssignments: 283,  ModelType: 'Naive Bayes',  AverageAccuracy: 80.5  },  {  TotalAssignments: 267,  ModelType: 'Random Forest',  AverageAccuracy: 91.02  },  {  TotalAssignments: 315,  ModelType: 'Linear Regression',  AverageAccuracy: 82.76  },  {  TotalAssignments: 300,  ModelType: 'k-Nearest Neighbour',  AverageAccuracy: 90  },  {  TotalAssignments: 318,  ModelType: 'Support Vector Machine',  AverageAccuracy: 87.07  },  {  TotalAssignments: 1360,  ModelType: 'Neural Network',  AverageAccuracy: 88.17  },  {  TotalAssignments: 308,  ModelType: 'Decision Tree',  AverageAccuracy: 86.65  },  {  TotalAssignments: 293,  ModelType: 'Logistic Regression',  AverageAccuracy: 84.04  }  ] |
| Q3 | db.Model.aggregate([  {  $group: {  \_id: "$ModelType",  TotalAssignments: { $sum: "$TotalOrdersAssigned" }  }  },  {  $match: {  TotalAssignments: { $gt: 1000 }  }  },  {  $count: "ModelTypesCount"  }  ]) | [ { ModelTypesCount: 1 } ] |
| Q4 | db.Customer.aggregate([  {  $match: {  TotalOrders: { $gt: 0 }  }  },  {  $project: {  FullName: 1,  AveragePaymentPerOrder: { $divide: ["$TotalPaymentMade", "$TotalOrders"] }  }  },  {  $match: {  AveragePaymentPerOrder: { $gt: 450 }  }  }  ]) | [  {  \_id: ObjectId('66966edaf101c175b9c4e4a8'),  FullName: 'James Hernandez',  AveragePaymentPerOrder: 457.22280701754386  }  ] |