1. **Data Import Query –**

mongoimport --db project --collection flight\_new --type csv --file /Users/karan7798z/Documents/TAMU/Advanced\_Database\_Systems/Project\_Phase\_I/Final\_Data\_Set/final\_merged\_with\_index.csv --headerline

1. **Data Aggregation Query (for Denormalization of Data when importing from relational to NoSQL) –**

db.flight\_new.aggregate({$lookup: {from: "airport", localField: "DEST", foreignField: "Code", as: "dest\_airport\_details"}}, {$lookup: {from: "airline", localField: "OP\_CARRIER", foreignField: "IATA\_CODE", as: "airline\_details"}}, {$out: "finaldata"})

//This Query creates 2 Child documents in each document: 1 for Airline Details and another for Destination Airport Details

1. **Index Creation –**

db.finaldata.createIndex({ORIGIN:1, DEST:1, Month:1})

//This creates an index on the final collection for Origin, Destination and Month. Query execution became exceptionally fast after this for both, Best Flights and Best Destinations.

1. **DropDown Population –**

db.airport.find({}, {Code:1, Name:1, \_id:0})

1. **Best Flights –**

db.finaldata.aggregate([ {$match: {ORIGIN: "IAH", DEST: "LAX", Month: 1}}, {$group: {\_id : {CARRIER : '$OP\_CARRIER', ORIGIN : '$ORIGIN', DEST : '$DEST', Month : '$Month', AIRLINE : '$airline\_details.AIRLINE'}, average\_delay: {$avg: {$sum: ["$ARR\_DELAY", "$DEP\_DELAY"]}}}}, {$project: {ORIGIN: '$\_id.ORIGIN', DEST: '$\_id.DEST', Month: '$\_id.Month', CARRIER: '$\_id.CARRIER' , average\_delay: '$average\_delay', AIRLINE: '$\_id.AIRLINE' ,\_id:0}}, {$sort: {average\_delay: 1}}, {$limit: 5**}**])

1. **Best Destinations -**

db.finaldata.aggregate([{$match: {ORIGIN: "SNA", Month: 1}}, {$group: {\_id: {DEST: '$DEST', ORIGIN: '$ORIGIN', LOCATION: '$dest\_airport\_details.Location', Month: '$Month'}, no\_of\_flights: {$sum: 1}}}, {$sort: {no\_of\_flights: -1}}, {$project: {DEST: “$\_id.DEST”, no\_of\_flights: “$no\_of\_flights”, Month: “$\_id.Month”}} {$limit: 5}])