**1. How many records does each airline class have? Use $project to show result as { class: "Z", total: 999 }**

Query:

db.airlines.aggregate([{$group: {\_id: "$class", total: {$sum: 1}}}, {$project: {\_id:0, class: "$\_id", total: "$total"}}])

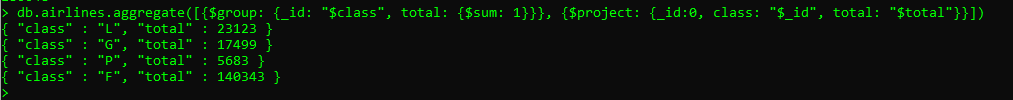
Result:

{ "class" : "L", "total" : 23123 }

{ "class" : "G", "total" : 17499 }

{ "class" : "P", "total" : 5683 }

{ "class" : "F", "total" : 140343 }



**2. What are the top 3 destination cities outside of the United States (destCountry field, not included) with the highest average passengers count? Show result as { "avgPassengers" : 2312.380, "city" : "Minsk, Belarus" }**

Query:

db.airlines.aggregate([{$match: { destCountry: { $ne: 'United States' } }}, {$group: { \_id: '$destCity', avgPassengers: { $avg: '$passengers' } }}, {$sort: { avgPassengers: -1 }}, {$limit: 3}, {$project: { \_id: 0, avgPassengers: '$avgPassengers', city: '$\_id' }}]).pretty()

Result:

{

"avgPassengers" : 8052.380952380952,

"city" : "Abu Dhabi, United Arab Emirates"

}

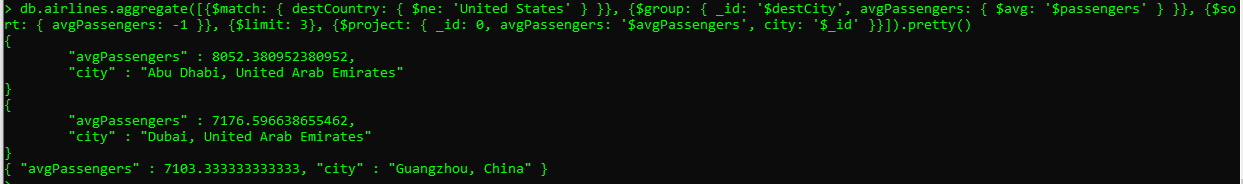
{

"avgPassengers" : 7176.596638655462,

"city" : "Dubai, United Arab Emirates"

}

{ "avgPassengers" : 7103.333333333333, "city" : "Guangzhou, China" }

****

**3. Which carriers provide flights to Latvia (destCountry)? Show result as one document { "\_id" : "Latvia", "carriers" : [ "carrier1", " carrier2", …] }**

Query:

db.airlines.aggregate([{$match: {destCountry: {$eq: "Latvia"}}}, {$group: {\_id: "$destCountry",carriers: {$addToSet: "$carrier"}}}]).pretty()

Result:

{

"\_id" : "Latvia",

"carriers" : [

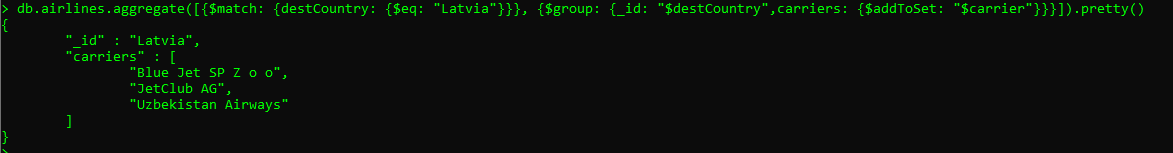
"Blue Jet SP Z o o",

"JetClub AG",

"Uzbekistan Airways"

]

}

****

**4. What are the carriers which flue the most number of passengers from the United State to either Greece, Italy or Spain? Find top 10 carriers, but provide the last 7 carriers (do not include the first 3). Show result as { "\_id" : "<carrier>", "total" : 999}**

Query:

db.airlines.aggregate([{$match: {destCountry: {$in: ["Greece", "Italy", "Spain"]},originCountry: {$eq: "United States"}}}, {$group: {\_id: "$carrier",total: {$sum: "$passengers"}}}, {$sort: {total: -1}},{$limit: 7}, {$skip: 3}]).pretty()

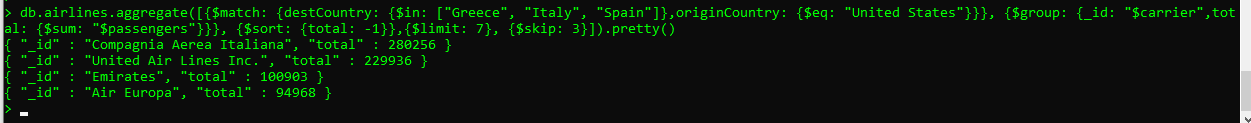
Result:

{ "\_id" : "Compagnia Aerea Italiana", "total" : 280256 }

{ "\_id" : "United Air Lines Inc.", "total" : 229936 }

{ "\_id" : "Emirates", "total" : 100903 }

{ "\_id" : "Air Europa", "total" : 94968 }

****

**5. Find the city (originCity) with the highest sum of passengers for each state (originState) of the United States (originCountry). Provide the city for the first 5 states ordered by state alphabetically (you should see the city for Alaska, Arizona and etc). Show result as { "totalPassengers" : 999, "location" : { "state" : "abc", "city" : "xyz" } }**

Query:

db.airlines.aggregate([{$match: {originCountry: {$eq: "United States"}}}, {$group: {\_id: {originCity: "$originCity",originState: "$originState"},total: {$sum: "$passengers"}}}, {$sort: {total: -1}}, {$group: {\_id: "$\_id.originState",city: {$first: "$\_id.originCity"},totalPassengers: {$first: "$total"}}}, {$sort: {\_id: 1}}, {$limit: 5}, {$project: {\_id: 0,totalPassengers: "$totalPassengers",location: {state: "$\_id",city: "$city"}}}]).pretty()

Result:

{

"totalPassengers" : 760120,

"location" : {

"state" : "Alabama",

"city" : "Birmingham, AL"

}

}

{

"totalPassengers" : 1472404,

"location" : {

"state" : "Alaska",

"city" : "Anchorage, AK"

}

}

{

"totalPassengers" : 13152753,

"location" : {

"state" : "Arizona",

"city" : "Phoenix, AZ"

}

}

{

"totalPassengers" : 571452,

"location" : {

"state" : "Arkansas",

"city" : "Little Rock, AR"

}

}

{

"totalPassengers" : 23701556,

"location" : {

"state" : "California",

"city" : "Los Angeles, CA"

}

}

