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

db.airlines.aggregate**([{**

$group**:** **{**

\_id**:** "$class"**,**

total**:** **{**$sum **:**1**}**

**}**

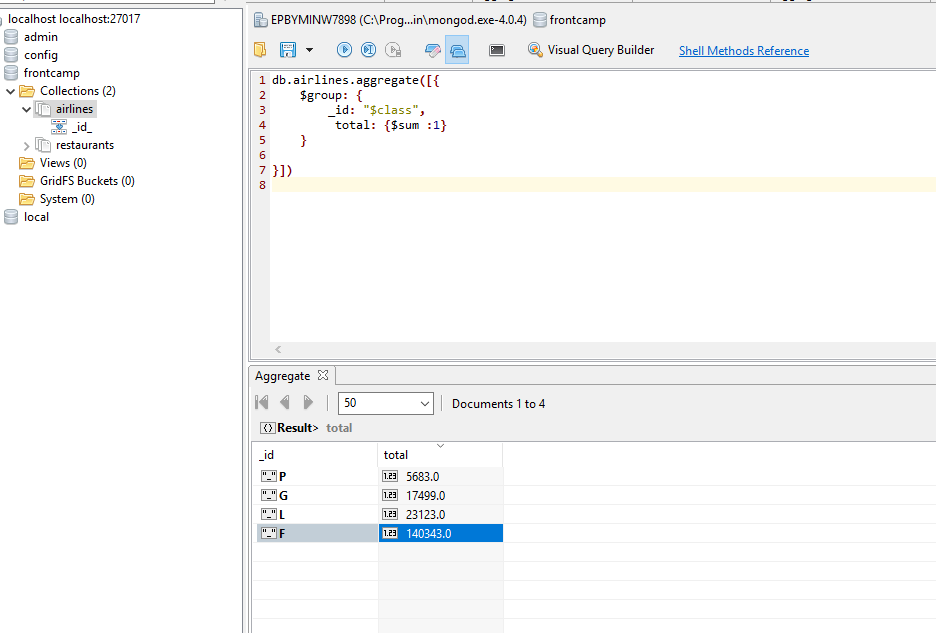
**}])**

**{ "\_id" : "F", "total" : 140343 }**

**{ "\_id" : "L", "total" : 23123 }**

**{ "\_id" : "P", "total" : 5683 }**

**{ "\_id" : "G", "total" : 17499 }**



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"

db.airlines.aggregate**([**

**{** $match**:{** destCountry**:** **{** $ne**:** "United States" **}}** **},**

**{** $group**:** **{** \_id**:** "$destCity"**,** avgPassengers**:** **{** $avg**:** "$passengers" **}}},**

**{** $sort**:** **{** avgPassengers**:**-1**}** **},**

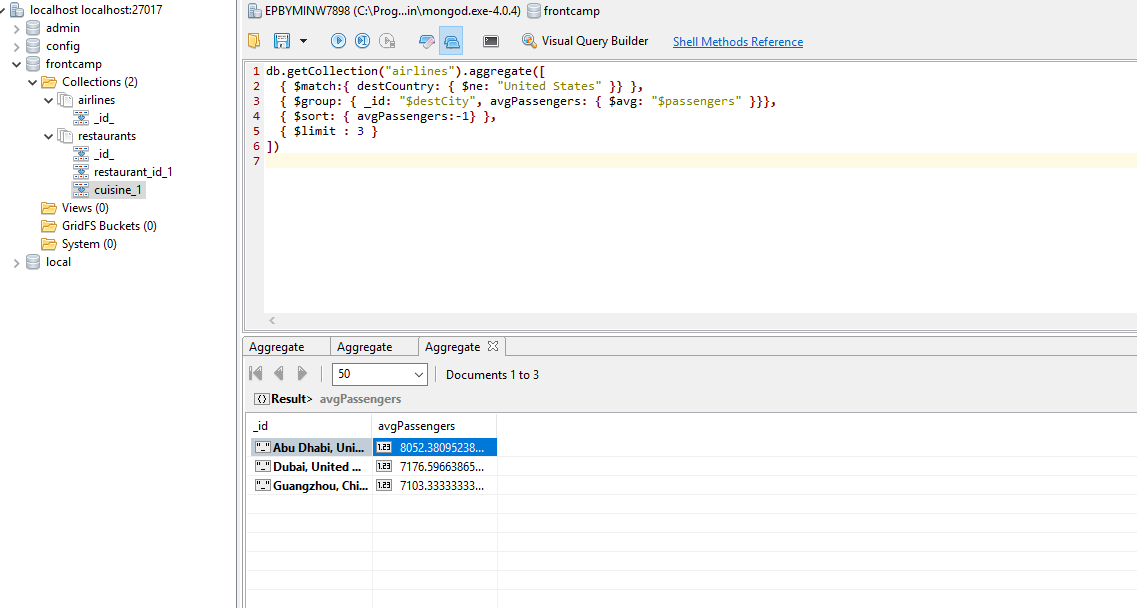
**{** $limit **:** 3 **}**

**])**

**{ "\_id" : "Abu Dhabi, United Arab Emirates", "avgPassengers" : 8052.380952380952 }**

**{ "\_id" : "Dubai, United Arab Emirates", "avgPassengers" : 7176.596638655462 }**

**{ "\_id" : "Guangzhou, China", "avgPassengers" : 7103.333333333333 }**



**3. Which carriers provide flights to Latvia (destCountry)?**

**Show result as one document { "\_id" : "Latvia", "carriers" : [ "carrier1", " carrier2", …] }**

db.airlines.aggregate**([**

**{** $match: { destCountry: "Latvia"}**},**

**{** $group**:** **{** \_id: "$destCountry"**,** carriers: { $addToSet: "$carrier" }**}},**

**])**

**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" : "", "total" : 999}**

db.airlines.aggregate**([**

**{**

$match**:** **{**

$or**:** **[**

**{**destCountry**:** "Greece"**,** originCountry**:** "United States"**},**

**{**destCountry**:** "Spain"**,** originCountry**:** "United States"**},**

**{**destCountry**:** "Italy"**,** originCountry**:** "United States"**}**

**]**

**}**

**},**

**{**

$group**:** **{**

\_id**:** "$carrier"**,**

total**:** **{** $sum**:** "$passengers" **}**

**}**

**},**

**{**

$sort**:** **{** total**:** -1**}**

**},**

**{**

$limit**:** 10

**},**

**{**

$skip**:**3

**}**

**])**

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

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

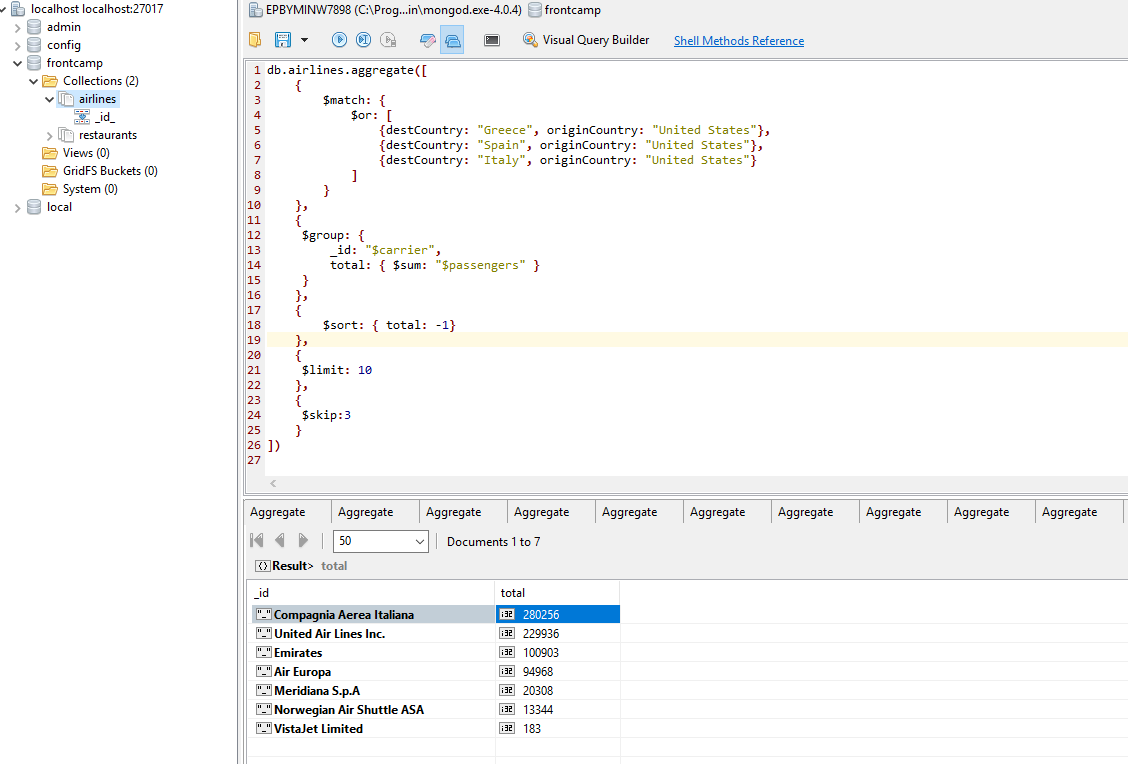
**{ "\_id" : "Emirates", "total" : 100903 }**

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

**{ "\_id" : "Meridiana S.p.A", "total" : 20308 }**

**{ "\_id" : "Norwegian Air Shuttle ASA", "total" : 13344 }**

**{ "\_id" : "VistaJet Limited", "total" : 183 }**

****

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" } }

db.airlines.aggregate**([**

**{**

$match**:** **{**

originCountry**:** "United States"

**}**

**},**

**{**

$group**:** **{**

\_id**:** **{**

originCity**:** "$originCity"**,**

originState**:** "$originState"

**},**

totalPassengers**:** **{**$sum**:** "$passengers"**}**

**}**

**},**

**{**

$group**:{**

\_id**:{**

state**:** "$\_id.originState"

**},**

originCity**:** **{**$first**:** "$\_id.originCity"**},**

totalPassengers**:** **{**$max**:** "$totalPassengers"**}**

**}**

**},**

**{**

$sort**:** **{**"\_id.state"**:** 1**}**

**},**

**{**

$limit**:** 5

**},**

**{**

$project**:** **{**

\_id**:** 0**,**

totalPassengers**:** "$totalPassengers"**,**

location**:** **{** state**:** "$\_id"**,** city**:** "$originCity" **}**

**}**

**}**

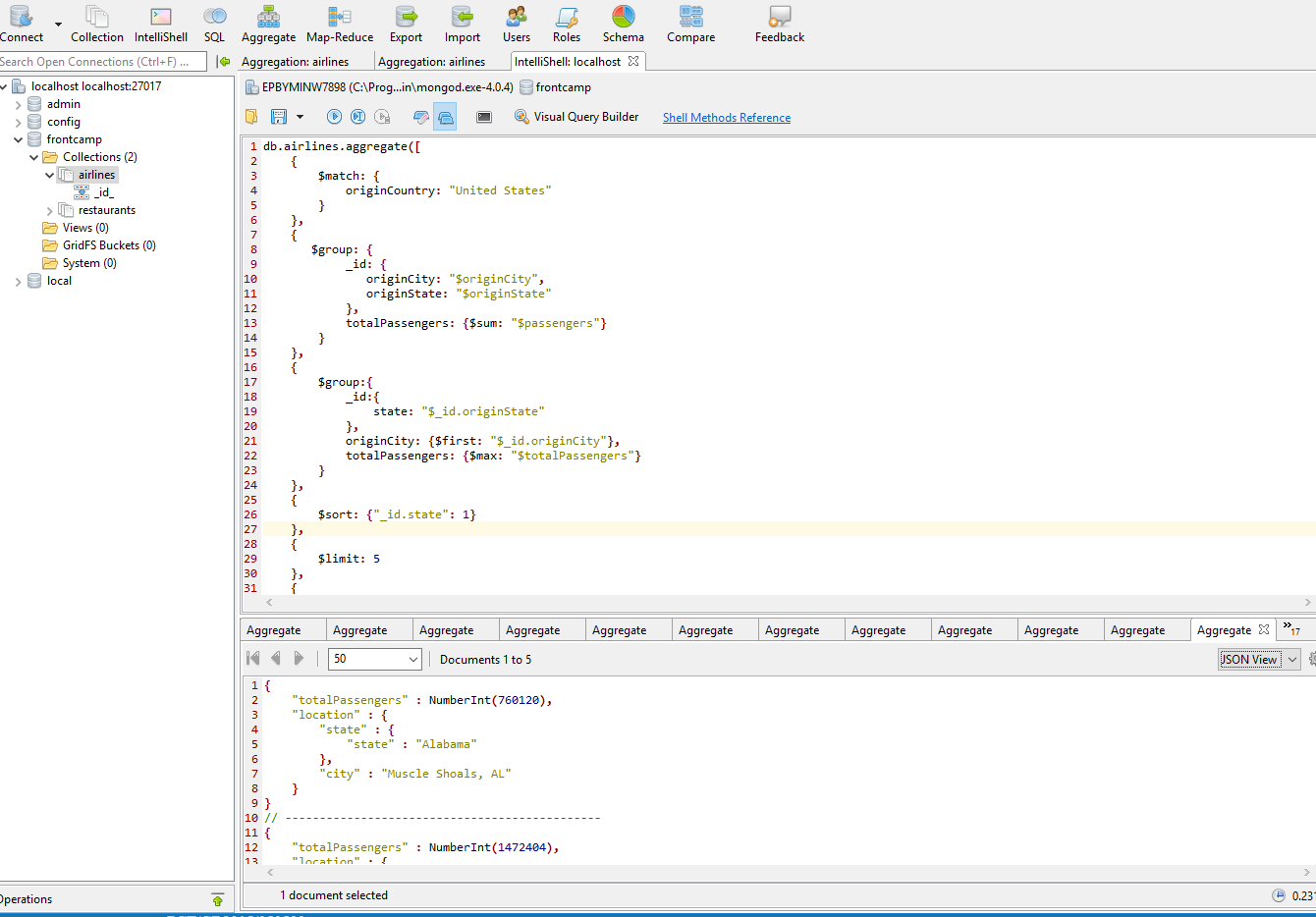
**])**

**{ "totalPassengers" : 760120, "location" : { "state" : { "state" : "Alabama" }, "city" : "Muscle Shoals, AL" } }**

**{ "totalPassengers" : 1472404, "location" : { "state" : { "state" : "Alaska" }, "city" : "Tanacross, AK" } }**

**{ "totalPassengers" : 13152753, "location" : { "state" : { "state" : "Arizona" }, "city" : "Prescott, AZ" } }**

**{ "totalPassengers" : 571452, "location" : { "state" : { "state" : "Arkansas" }, "city" : "Rogers, AR" } }**

**{ "totalPassengers" : 23701556, "location" : { "state" : { "state" : "California" }, "city" : "Brawley, CA" } }**