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Module 8 Assignment

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Using the mongoimport tool, **create the database** “companies” by loading the documents found in the “companies.json” file into the “research” collection. This file is located in the “/usr/local/datasets/” directory in Apporto. Verify your load by issuing the following queries:

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1. db.research.find({"name" : "AdventNet"})

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1. db.research.find({"founded\_year" : 1996},{"name" : 1}).limit(10)

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Perform the following tasks **using MongoDB queries**:

1. List only the first 20 names of companies founded after the year 2010, ordered alphabetically.

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1. List only the first 20 names of companies with offices in either California or Texas, ordered by the number of employees and sorted largest to smallest.

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* 1. **Design and implement a MongoDB aggregation pipeline** to show the total number of offices by state for all companies that have offices in the United States. Be sure that you account for the fact that some companies have offices in several states. Explain your aggregation pipeline.  
     Provide **screenshots** of your statements and the results as evidence.

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**Explanation**

**$unwind:**

* Breaks down the offices array so that each office becomes a separate document for processing.

**$match:**

* Filters only those documents where offices.country\_code is "USA", ensuring that only U.S. offices are considered.

**$group:**

* Groups the documents by state\_code (from offices.state\_code) and calculates the total number of offices in each state using the $sum operator.

**$sort:**

* Sorts the grouped results by total\_offices in descending order (-1), so states with the most offices appear first.