**8-1 Assignment: Data Aggregation Pipeline**

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CS-340-H7049 Client/Server Development

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**Create Database**

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

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

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**MongoDB Queries**

**2A. First 20 Companies Founded After 2010 in Alphabetical Order**

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**2B. First 20 Companies in either California or Texas** (**Largest to Smallest)**

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**MongoDB Aggregation Pipeline**

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An aggregation pipeline is a series of stages that consists of data that can be used to process documents. The functions below were used to determine the total number of offices per state for all companies within the US.

* $unwind: The operator is used to deconstruct an array into multiple documents. When adding “offices” to the operator, all documents within the offices is separated into different documents.
* $match: The operator is used to filter documents based on the requested condition. Since “offices.country\_code” : “USA” was used, the output will only show offices within the USA.
* $group: The operator bundles documents that were based on the requested condition. Since the input was to group all \_id per code, the $group operator will output one document per state.
* $sum: The operator will calculate the total of numerical values that is requested but will ignore all non-numerical values. As the input is to require the sum of all employees per state and display as an output.
* $sort: This sorts the documents based on criteria. The operator will organize each document based on the requested condition. Since the request was to sort by state, the output will display the number of employees per state in alphabetical order.