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| **Lab Exercises**     1. Download a zip code dataset at   <http://media.mongodb.org/zips.json>  Use mongoimport to import the zip code dataset into MongoDB.  After importing the data, answer the following questions by using aggregation pipelines:  (1) Find all the states that have a city called "BOSTON".  (2) Find all the states and cities whose names include the string "BOST".  (3) Each city has several zip codes. Find the city in each state with the most number of zip codes and rank those cities along with the states using the city populations.  (4) MongoDB can query on spatial information.  Assume we have a spatial position as [-72, 42], and in the range of 2 (it can be [-71.5, 41.5] or [-72.5, 42.5] or somewhere else), there may exist a number of zip codes . Try to find the states in that range. You should return the total populations and the number of cities of each state in that range. Rank the states based on the number of cities.  (5) Consider a certain rectangular area, in which the vertices are [ -80 , 30 ] , [ -90 ,30 ] , [ -90 , 40 ] and [ -80 , 40 ]. Find and report the top 10 largest cities (by population) in this area.   1. The operational intelligence case studies describe applications that collect machine generated data from logging systems, application output, and other systems using mongoDB. 2. The product data management case studies address aspects of applications required for building product catalogs, and managing inventory in e-commerce systems (use MongoDB) 3. the content management case studies introduce basic patterns and techniques for building content management systems using MongoDB. |