Introduction to Databases (X-409.1)
Assignment 1 (Due by Class Meeting 3)

For each of the business use cases listed, choose one or more database architectures (relational, document, key-value store, columnar, graph, etc.) that appear to be a good fit.

1. A state Office of Emergency Services wishes to store a huge history of incidents with the state using structured data (dates, times, text strings and numeric values). There are nearly two hundred separate data items, but which ones are applicable varies considerably by the type of incident (e.g. wildfire, earthquake, tornado, flood, etc.)
2. A startup that hosts prescription drug information wishes to display medications and potential side effects, along with a visual presentation of how common the side effects are.
3. A bank wishes to store and maintain of bank account transactions with controls to prevent two business users from updating the same transaction at the same time, ad hoc query capability for resolution of customer service issues and audit requests, along with a rich set of security controls.
4. A large retailer wants the ability to store and retrieve one or more image files for each product they sell, using the product ID as the identifier for the image files.
5. A cellular provider needs to store massive amounts of circuit use information in the form of the beginning timestamp, duration, and assigned circuit. There are potentially millions of these circuit uses per minute. The data will be used as input to a process that will sift through the data, looking for trends in the data.
6. A provider of online data modeling tools wishes to store (and later retrieve) the metadata for each data model as XML and/or JSON documents.