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Lab 1
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The website Amazon probably uses several different databases to help them function effectively. While most people only know Amazon for their large online store, they also offer a cloud computing service called Amazon Web Service, manufacture their own products such as the widely successful Kindle, and host a video and music streaming service. While all of these rely on a database, I'm going to focus on the database associated with Amazon Prime Membership.

The database associated with Amazon Prime Membership has to store data such as the account holder's first and last name, credit or debit card information for billing, a billing and shipping address, an email address, a password, and security questions. All of this information has to be properly labeled and sorted for it to be useful data for Amazon. For example, first and last names have to be accurately labeled, like calling them fNamePrime and lNamePrime, so the first and last names can be easily distinguished, along with labeling the user as being a prime member. Just saving the whole name under the label Name is not giving enough organization to the data. There is no way to distinguish between first and last name and whether or not the user is a prime member at first glance.

Another example of this is the shipping and billing addresses being specifically labeled. While sometimes billing and shipping address are the same, a good portion of the time they are not. Just having the address "40 Taylor Drive" is giving information about a member, but it is not data. We don't know if this is a billing or shipping address,
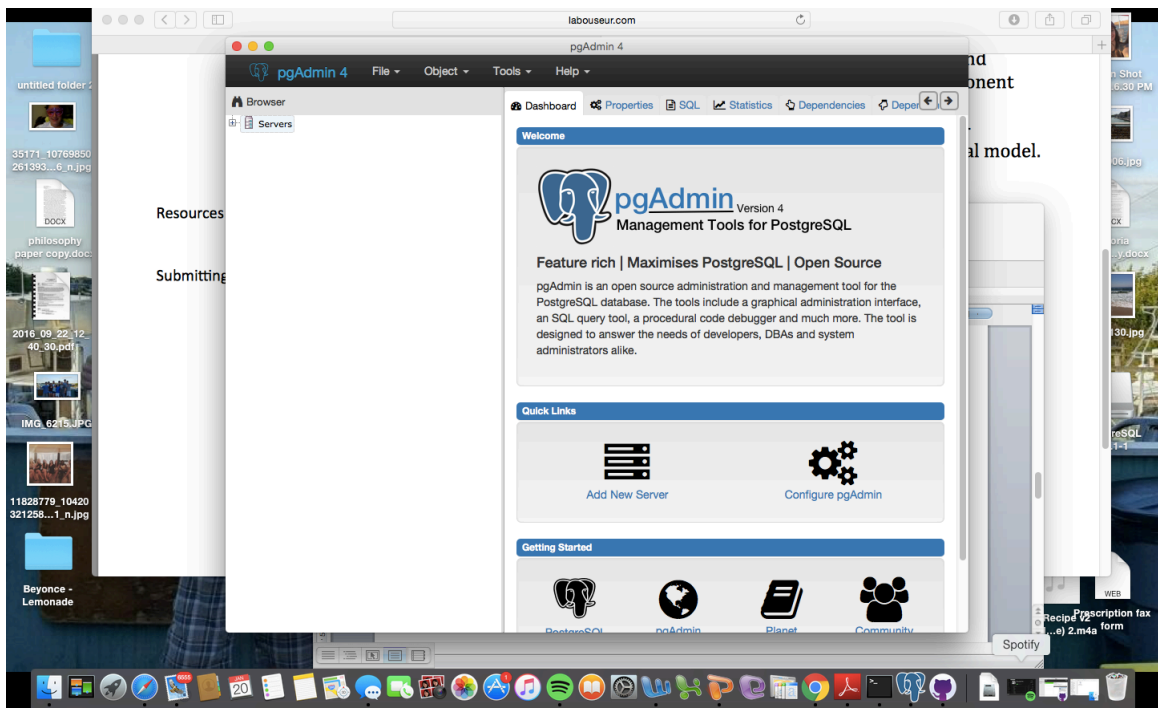
which would mean that Amazon might incorrectly bill people, or ship packages to the

wrong address.

Essay 2

A hierarchical data model arranges data in a hierarchy. Almost all data is arranged in a hierarchy because it is efficient to navigate and easily shows the relationship between data. One downside of the hierarchical model is that sometimes data is duplicated, which can be confusing and inefficient. This means that it is tedious to represent many to many relationships using the hierarchical model.

The network model is a graph as opposed to a chart. Unlike the hierarchical model it allows many to many relationships, which eliminates the problem of duplication. It also allows for more freedom in design because it is not following a strict top to bottom set up. However, similar to the hierarchical model, all the data has to be connected to something, which can be problematic. Also similar to the hierarchical model, it can get confusing to represent a complex database using this model.

XML is not a good data model compared to a relational data model. They can be complex to design if you are designing a large program or database and it is difficult to make changes. It is also difficult to read if the model is large.

Essay 2