http://cs362-assignment1.appspot.com

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The cloud provider I used for this assignment was Google App Engine. Google App Engine is a Platform as a Service (PaaS) cloud service. Some of the services provided and used in this particular application are a web server, the necessary PHP software (since PHP was the server-side language used), a linux-based terminal (used to give the app engine commands), storage for the necessary web page files, and the "Google Cloud Platform" interface (used to manage whatever apps are stored in the app engine. There are probably several other elements I'm not aware of, but as I am new to cloud computing, these are the ones most obvious to me.

These services provided by the Google App Engine are clearly different from a product in that most of the components of the platform are allocated and managed by Google. A product would be simply a piece of hardware or software that had a finite amount of resources, which would need to be managed and configured by the customer. New features/ resources might become available for the product, but would need to be managed by the customer (i.e. upgraded, re-configured, new software/firmware downloads). For instance, the server that runs the .php file from my application does not need to be started or maintained by myself.

In upcomming assignments, when the necessity to program dynamic web pages using a non-relational database on the back end arises, the Google App Engine will be absolutely sufficient for such a task. Google App Engine is robust, has the ability to internally handle any scripting languages such as PHP, Python, or SQL. As for the non-relational database requirement portion of the assignment, Google has its own beta NoSQL database (standing for Not Only SQL) called "Cloud Bigtable" that may be of use. Alternatively, App Engine Datastore is a Non-relational Database that is typically integrated with Google App Engine and may be a more viable alternative.

According to documentation on its own website:

App Engine Datastore is a schemaless NoSQL datastore providing robust, scalable storage for your web application, with the following features:

- *No planned downtime*
- *Atomic transactions*
- *High availability of reads and writes*
- *Strong consistency for reads and ancestor queries*
- *Eventual consistency for all other queries*

The Python Datastore interface includes a rich data modeling API and a SQL-like query language called GQL.

Ideas for final projects:

1.) An online travel blog that allows users to upload pictues, video, text and map data to chronicle a trip. User accounts could be created to log in and upload trip data, view other publicly shared trip data, and plan future trips based on other users' information such as routes, destinations, and other items that can be plotted on a Google Maps API type interface.

2.) A web-page that queries real-time gas price information from somewhere and stores it in a database that then exports this data to an interactive map that can be zoomed into and analyzed by the user.