

Google Cloud Store backend:

Google Cloud store is scalable store that supports CRUD operations similar to Relation Data base.

It has support for storing **Geographical points** in the form of (latitude, longitude) pair.

It supports Google Query Language (similar to SQL) through which entities(rows) can be queries.

For component 1, I explored the possibility of using Cloud Store to store Geographical locations of various water sources.

Each water source is represented in the form of a record with following fields,

1. Lat, long (latitude and longitude of the water source)
2. Type : water source
3. Description (description of the source if its salt-water source or ground water source)

The screenshot shows the Google Cloud Store interface. At the top, there are buttons for 'CREATE ENTITY', 'REFRESH', and 'DELETE'. Below this, there's a section for 'Query by kind' and 'Query by GQL'. A query is entered: 'SELECT * from kind'. Below the query, there are buttons for 'Run query', 'Clear query', and 'GQL query help'. A table of results is displayed below the query area.

Name/ID	description	location	type
<input type="checkbox"/> id=5066549580791808	The water in this source is salty.	{ "latitude": 36.368832, "longitude": -121.036346 }	WATER SOURCE
<input type="checkbox"/> id=5639445604728832	fresh water source	{ "latitude": 37.37, "longitude": 122.12 }	WATER SOURCE
<input type="checkbox"/> id=5649391675244544	This water source is murky.	{ "latitude": 37.368832, "longitude": -122.036346 }	water
<input type="checkbox"/> id=5659313586569216	This water source is ground water source and has water with in 5 feet from su...	{ "latitude": 37.33, "longitude": 122.22 }	WATER SOURCE

Screenshot of Cloud Store with entities. Each entity is a location of water source

My deliverable for component 1 was exploratory (and does nt have a code deliverable) and we were able to create geo point records on cloud store and query them.

Hence it does not have an code deliverable.

For component 2, my deliverable includes developing code to get water source (geo points) within a given distance from the backend and display them on an integrated map on the front end.