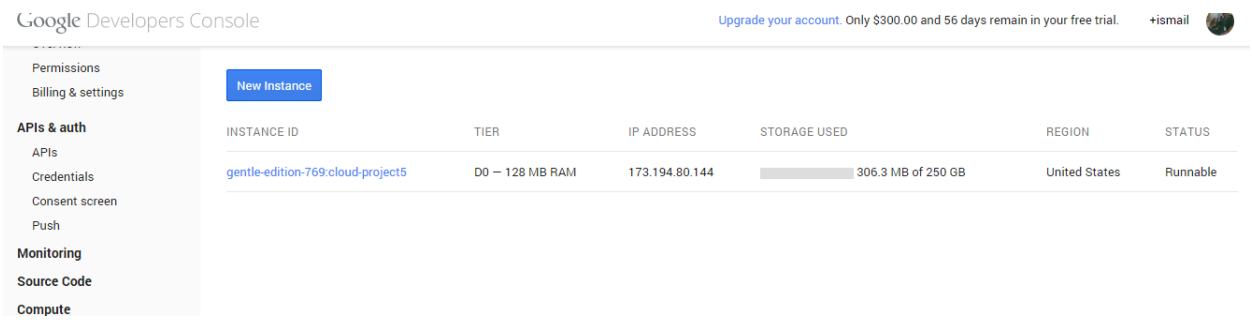
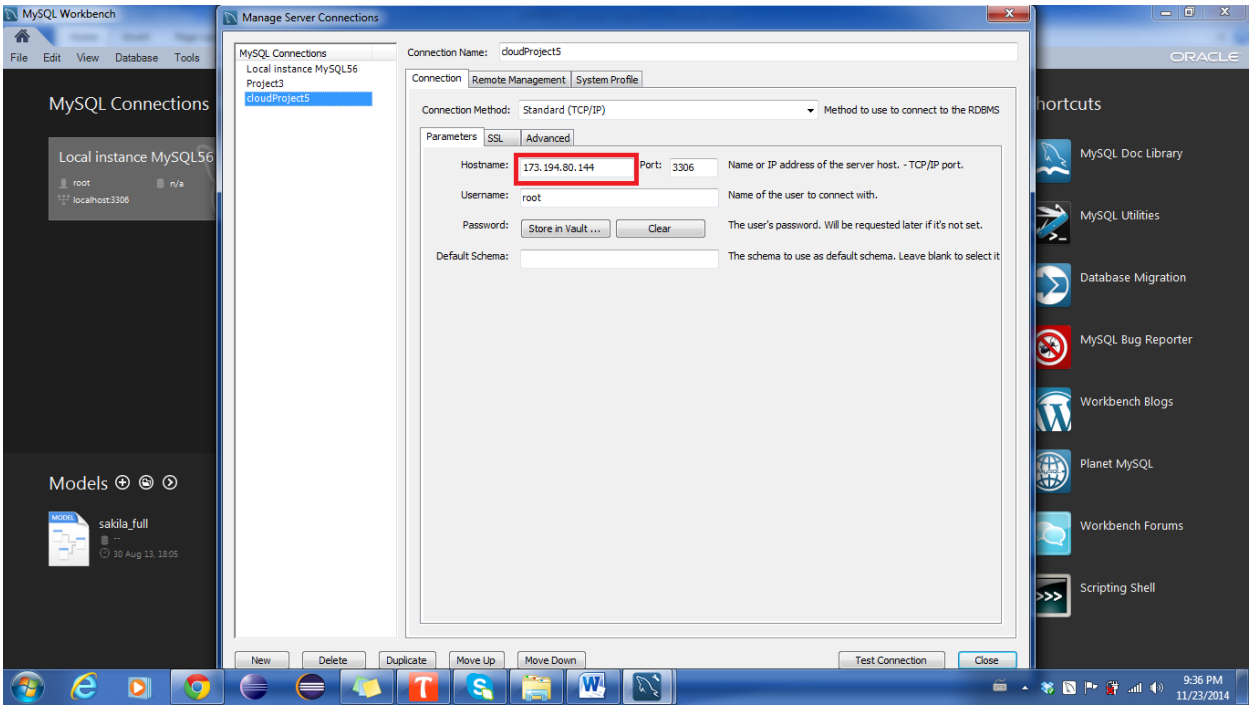
Google Cloud SQL Instance



Connection with my sql:



Time to measure upload and download 10K, 25K and 100K files:

Create table queries:

```
CREATE TABLE cloud_project5.`Cloud_100K` (
  `id` int(11) DEFAULT NULL,
  `stationId` varchar(45) DEFAULT NULL,
  `stationName` varchar(45) DEFAULT NULL,s
  `date` varchar(45) DEFAULT NULL,
  `AWND` varchar(45) DEFAULT NULL,
  `TMAX` varchar(45) DEFAULT NULL,
  `PRCP` varchar(45) DEFAULT NULL,
  `TOBS` varchar(45) DEFAULT NULL,
  `TMIN` varchar(45) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

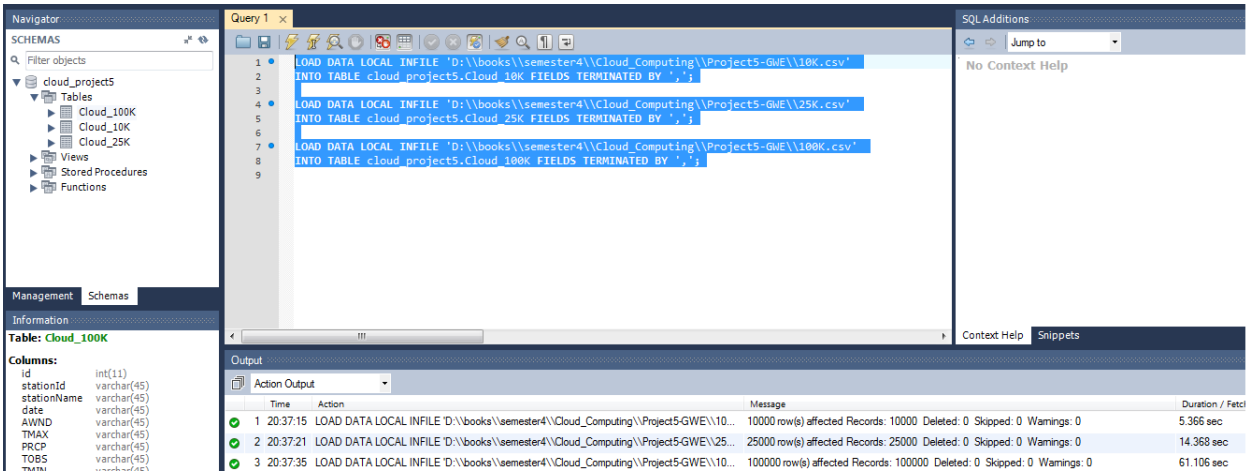
Query for loading csv files into table:

```
LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\10K.csv'
INTO TABLE cloud_project5.Cloud_10K FIELDS TERMINATED BY ',';

LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\25K.csv'
INTO TABLE cloud_project5.Cloud_25K FIELDS TERMINATED BY ',';

LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\100K.csv'
INTO TABLE cloud_project5.Cloud_100K FIELDS TERMINATED BY ',';
```

Inserting different size files into google cloud sql:



Querying from different tables:

select stationId, count(stationId)

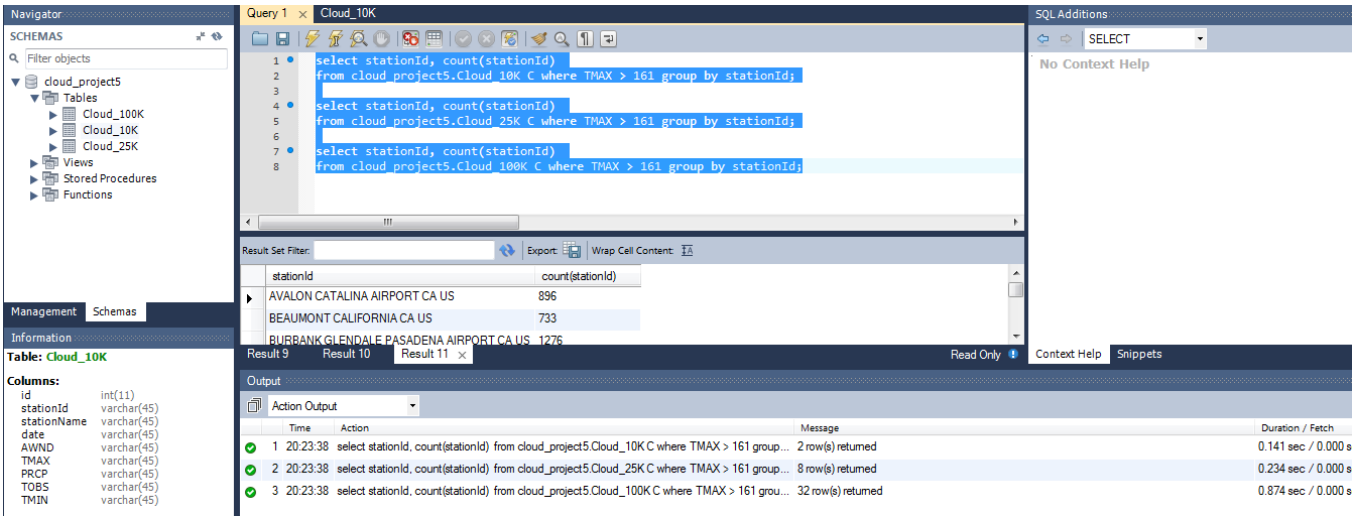
from cloud_project5.Cloud_10K C where TMAX > 161 group by stationId;

select stationId, count(stationId)

from cloud_project5.Cloud_25K C where TMAX > 161 group by stationId;

select stationId, count(stationId)

from cloud_project5.Cloud_100K C where TMAX > 161 group by stationId;



Operation	Time (seconds)		
	10K (0.75 MB)	25K (1.9 MB)	100K (8.1 MB)
Upload (Google Drive)	6.53	14.94	62.07
Download (Google Drive)	1.08	1.51	4.62
Insert into google cloud sql table	5.36	14.37	61.11
Querying from google cloud sql table	0.14	0.23	0.87

As you can see time increases for different options as file size increases.

Time is symmetric for uploading files into google drive and uploading it into google cloud sql because files that are being uploaded are of the same size and both the applications google drive and google sql are on same google server with same access speed. So if one is accessing that functionality from same network, uploading time to both the options will be nearly same.

Of course one can vary this time by changing the configuration of instance. If instead of 512 MB ram, one use 1 GB ram, then the time to upload will decrease but time will still be symmetric if configurations are same for google cloud sql and google cloud storage

References:

https://developers.google.com/drive/web/quickstart/quickstart-python

https://developers.google.com/drive/web/manage-downloads