CSE 6331   Cloud Computing

            Programming Assignment
            Performance
            On AWS

Description:
  Frequently cloud service based systems need to support thousands or even millions
  of users (or subscribers) often simultaneously. In order to more accurately model
  these type of systems, one needs to employ traffic modeling systems that can both
  create events as well as measure responses.

Using assignment 2 or 3 (or any other assignment you wish) as a template, or "driver",
you need to create a cloud based system that responds to user queries and that (on the
"cloud") performs simple database queries and formats a web interface response to the
user. You will test (exercise) that system remotely, from your PC, and gather performance
metrics. "Jmeter" is one (free) software tool that will provide the needed features,
others will work well, too.

1. Create/implement a cloud based web site similar to assignment 2 or 3, or any that
   responds to user queries, retrieving information from a relational database.
2. Test your implementation.
3. Obtain Jmeter (or similar), install, test your understanding.
4. Use Jmeter to drive your cloud application. Try several parameters, such as
   amount of requests per unit time, intervals between requests, and similar variations
   on request traffic.
5. Get, and interpret, results.

Programming Assignment
            Scaling - Performance
            On AWS
Description:
  Frequently cloud service based systems need to support thousands or even millions
  of users (or subscribers) often simultaneously.
  To support so many users the cloud services need to automatically scale. Scaling should
  be done both by scaling up to handle ever increasing demand, and then scaling back down
  to avoid being charged for unused and unneeded service.

Using assignment 2, 3, or previous (or any other assignment you wish) as a template, or
"driver", you need to create a cloud based system that responds to user queries and that
(on the "cloud") performs simple database queries and formats a web interface response to
the user. You will test (exercise) that system remotely, from your PC, and gather
performance metrics.

You will then slowly increase the demand on that cloud based service, ("Jmeter" is one
method or through other drivers creating similar demand.)

1. Create/implement a cloud based web site similar to assignment 2 or 3 or 6, or any that
   responds to user queries, retrieving information from a relational database.
2. Test your implementation.
3. Obtain Jmeter (or similar), install, test your understanding.
4. Create ever increasing load (demand) on your service.
5. Using AWS facilities configure scaling to handle scaling up and down,
   by creating additional instances or removing instances, up to 4 instances in total.
6. You may wish to use Jmeter to drive your cloud application. Try several parameters,
   such as amount of requests per unit time, intervals between requests, and similar
   variations on request traffic.
7. Try different thresholds on cloud scaling parameters.
8. Get, and interpret, results.