# *Cassandra Lab – HW # 7*

**NOTE:** This homework is still "under construction", but I want to give you a glimpse of what's coming.

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**Objectives:**

- Students will deploy and run the Apache Cassandra NoSQL database engine
- Students will gain exposure to CQL – Cassandra Query Language
- Students will experience deployment of Apache Cassandra in GCP (the Google Cloud Platform)
- Students will launch and use the Cassandra CQL Shell in GCP

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**Overview:**

- Rather than downloading and installing Cassandra on your PC, we will be using a VM that is running within GCP
- You will deploy the Cassandra software on the VM in the Google cloud
- Within GCP, you will connect to an existing instance of Cassandra, and run some CQL queries

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**Overview:**

- The lab has FOUR parts:

- Part One – You will sign into GCP and create your student account, and receive $50 in GCP credits and 200 QwikLabs credits
  - You will use a QwikLab credit to execute the GCP Cassandra Lab in QwikLabs
  - You can use some of the GCP credits to spin up a VM, install Cassandra on it, load data, and run queries
  - These credits are free to students and faculty, but you must verify your academic status with CU
  - NO CREDIT CARD REQUIRED !!

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**Overview:**

- Part Two –
  - Using one QwikLabs credit, you will complete the Qwiklabs course "GSP704 - Deploying an Open Source Cassandra™ Database using the GCP Marketplace"
  - This lab course will take you about 15 minutes
  - This lab course will give you comfort and familiarity with the GCP environment to prepare you for Part Three

**Overview:**

- Part Two – (cont.)
  - You will carefully follow QwikLabs' instructions and
    - Spin up a VM
    - Deploy Cassandra on your VM
    - Go into the CQL Shell ("cqlsh")
    - Create a Keyspace (like a database)
    - Create a Table (similar to a relational table, but actually a wide row column-family structure)
    - Insert rows into the table you've created
    - Runs some queries against the table
    - Answer some questions about the lab

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**Overview:**

- Part Three (instructions are still being documented & tested...)
  - You will follow steps in GCP similar to the QwikLabs course, but in GCP outside of the QwikLabs environment
    - Spin up a VM
    - Deploy Cassandra on your VM
    - Connect your VM node to an existing Cassandra cluster
    - Populate your VM node with data from the existing Cassandra cluster
    - Go into the CQL Shell ("cqlsh")
    - Runs some queries against the data to solve analytical problems similar to the questions in HW # 6

**Overview:**

- Part Four
  - Assemble your answers for Part Two and Part Three into a document
  - Save the document as a PDF
  - Submit the document via the link in Moodle, Week 14, Homework # 7

**Grading**

- This homework # 7 is due on Sunday Evening, April 26, at 11:59 p.m.
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- This homework is worth 100 out of 1000 (10%) toward your final grade.

- You may work with one partner on this homework (pair programming)
  - One submission per student
  - Include your partner's name on your submission

**Grading**

- This homework will be fully assigned on Thursday or Friday, April 16 or 17, as soon as it is finalized (documentation and testing) and instructions for all three parts are posted.
- Detailed instructions will appear in Moodle, Week 14, when the homework is officially assigned.
- I will post instructions for each part separately, so you can start on parts One and Two even before Part Three is posted