UC San Diego Extension
Cloud Services for Machine Learning
Summer 2020
Homework#1

Date Given: June 29, 2020   Due Date: July 5, 2020
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1. What is cloud computing? Enumerate the benefits a business realizes using cloud services.

2. Why it is preferable to run Deep Learning models on a cloud server?

3. Briefly compare the 3 major cloud service providers: Amazon Web Services (AWS), Microsoft's Azure, Google Cloud Platform (GCP).

4. Create a Google Cloud Platform (GCP) account. Get a credit of $300 for a new GCP account. Copy the screen shot of your GCP console on the answer document. Once you start using GCP account, the credit of $300 will deplete. After the credit balance becomes zero, Google will start charging your credit card for the services rendered by GCP.

    Caution: Please keep a close eye on the amount charged by GCP on your credit card. Stop those GCP services which you no longer use. Check your GCP account balance frequently to avoid GCP overcharging your credit card.

5. If variables a, b, c, d, and f are scalars, write Python program in **Colab** to compute and display the following expressions. Test your statements for the following values.
    a = 1.12,   b = 2.34,   c = 0.72,   d = 0.81,   f = 19.83
    Make sure that the answers computed by your Python code matches with the given answers.

                                                            Answers

    $$x = 1 + \frac{a}{b} + \frac{c}{f^2}$$ x = 1.4805

    $$s = \frac{b - a}{d - c}$$ s = 13.5556

    $$r = \frac{1}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d}}$$ r = 0.2536

    $$y = ab\frac{1}{c}\frac{f^2}{2}$$ y = 715.6766

6. Print the version number of TensorFlow and Keras software packages available on **Colab**.