M3.A5: Programming Assignment on Matrix Calculus and Optimization

Start Assignment

Due   Sunday by 10:59pm   **Points**   100   **Submitting**   a file upload   **File Types**   pdf
Available   after Jun 6 at 11pm

Overview

This assignment is intended to help you practice with numerical calculations of matrix derivatives and find approximate optimum values of functions by using iterative routines such as the gradient descent method.

Activities

- Create an iPython notebook to work on the following problems. [How To link: **https://www.dataquest.io/blog/jupyter-notebook-tutorial/** **(https://www.dataquest.io/blog/jupyter-notebook-tutorial/)**]
- Clearly put the problem numbers in appropriate headers and subheaders on the notebook.
- Do not display information that is not being sought.
- Images or data files, if any should be kept in folders such as '/images/im_name.jpg' or './data/data_file.cvs'.

- **PROBLEMS** ↓ **(https://sit.instructure.com/courses/48974/files/7959030/download?download_frd=1)**
- **Download to Jupyter** ↓ **(https://sit.instructure.com/courses/48974/files/7959008/download?download_frd=1)**

In your submission, you must:

- Provide the console output of the routines that you have implemented in the text input box in the format as specified in the problems.
- Provide a pdf file of the iPython notebook of your code. Check the following video for a convenient way to convert an iPython notebook to a pdf document:

convert ipython notebook to pdf (Best and Easy way)

Programming Assignment Grading Rubric

Criteria	Ratings				Pts
Completeness and Accuracy Programming output is complete and accurate.	**100 pts Exceeds Expectations** Work is complete and accurate.	**80 pts Somewhat Meets Expectations** Output is not as expected but most of the necessary steps were taken in programming; minor errors.	**60 pts Below Expectations** Work is only partially complete and/or contains many errors.	**0 pts No Points** Assignment not submitted.	100 pts

Total Points: 100