INSY 5336 001
Python Programming
Spring 2022
Homework 4 (50 points)
Due Date: May 1, 2022 11:59 pm CST (no exceptions)

The following guidelines should be followed and will be used to grade your project work:

- All code to be implemented and submitted as a jupyter notebook (.ipynb) file.
- This is an individual homework assignment, no group submissions will be accepted. If you discuss in groups, please write your code individually and submit.
- Sample runs shown in the question should be used as a guide for implementation. However extensive testing needs to be done on your code to deal with all test cases that might possibly be executed.
- The instructions for running of each cell and the expected results should be documented in the cell preceding the code using markdown language.
- Every code segment in the jupyter notebook cells should be well documented with comments. Use # in the code to provide comments and they should explain the algorithm and what the code segment is doing.
- Error checking in your code is very important and differentiates a high quality programmer from a low quality one. Hence you should account for invalid user inputs, infinite loops, out of range results, etc. and resolve them by appropriate error messages. The homework will be graded for robustness of your code.
- Please read each assignment carefully. Note that you need to test your code with example input files. I will be using my own test input file to test your code. DO NOT hard code file names in your program.

This is a project to scrape data from the web and store the results in both a text file as well as the SQLite database.

1. (100 points) The website https://finance.yahoo.com/trending-tickers lists extensive finance data. You have to write Python scripts/programs to collect the current prices for the following commodities: Crude Oil, Gold and Silver. Your program should store the commodity name and its corresponding price in a text file called **commodity_prices.txt**.

   In addition to the commodity_prices.txt file, the data should also be stored in an **SQLite** database called **CommodityDatabase** in the directory that your Jupyter Notebook code will be executed from. The CommodityDatabase should have a table called **CommodityTable** that contains the following columns and types:

Ticker	TEXT
Price	REAL

   Every execution of your program should create a new commodity_prices.txt and CommodityDatabase.db file in the directory (delete any existing files that you will create) that your Python script is located and run.

   Testing Instructions:
   Verify commodity_prices.txt file is created with the commodity name and its corresponding price

Verify CommodityDatabase is created in SQLite database having table named CommodityTable and the following columns and types with correct data populated:

Ticker	TEXT
Price	REAL