Assignment-2

(Total Points: 50)

Instructions:

- Download the attached python file assignment_2.py (make sure to **NOT** change the name of this file).
- Follow the instructions and **replace** all TODO comments in the scaffolding code.
- Test your code as much as you can to make certain it is correct.
- Run flake8 in addition to testing your code; I expect professional and clear code with minimal flake8 warnings and having McCabe complexity (<10) from all of you.
- Create a write up with formatted code and screenshots of your output, running the McCabe complexity command and error free console.
- Save the write-up as a PDF and submit it along with your python code (file name assignment_2.py) as separate attachments before the due date on blackboard.

Note: Running flake 8

flake8 path/to/your/file (for warnings and errors)
flake8 --max-complexity 10 path/to/your/file (for complexity)

Problem 1: Given an array having both positive and negative integers, (using the scaffolding code provided in the 'assignment_2.py' file) implement functions to solve the maximum sub-array problem:

A. Using the brute-force method. (Max Points: 5)
B. Using the recursive method (you would need to implement a function to solve the maximum crossing sub-array problem). (Max Points: 15)
C. Using the iterative method. (Max Points: 10)

Problem 2: Given two square matrices A and B, (using the scaffolding code provided in the 'assignment_2.py' file) implement functions to calculate the product AB:

A. Using matrix multiplication. (Max Points: 10)
B. Using Strassen's Algorithm. (Max Points: 10)