CMP109 – Lab 11 & 12: Python Networking Applications
Assessed Lab Exercise

For the next two lab sessions, you are tasked with building **two** Python networking programs to perform the following tasks. This lab will be assessed, and both parts are equally weighted. It is encouraged that you have completed the lab 10 exercise beforehand to familiarise yourself with Python Socket Programming.

The programs must be built using **Python 3.x**. The base requirements for each program are presented below. You are encouraged to provide commentary of your code throughout.

Assessed Tasks:

UDP Calculator
Create a remote calculator. The client should be able to send a basic calculation request to the server to add *(+)*, subtract *(-)*, multiply *(*)* or divide *(/)* two numbers provided by the user. The server application should execute the calculation and send the answer back to the client. This solution **must** communicate using **UDP Sockets**.

TCP Document Statistics
The client should be able to upload the content of a text file *(.txt)* to the server. The server should count the number of characters and words contained within the file and return those results to the client. This solution **must** communicate using **TCP Sockets**.

Submission:
Please upload your **.py files** along with a short description of each solution presented *(python libraries used, usage syntax, details of any testing performed)*.

Make sure that your filenames are sensible *(e.g. UDPCalcClient.py, UDPCalcServer.py, etc.)* and that your client and server files are preconfigured to be tested on **localhost (127.0.0.1)**.