2024.9.15 khwong

For Programming exercises, you need to use MATLAB for these exercise questions. Browse the following webpage to obtain the license.

<https://www.itsc.cuhk.edu.hk/tc/all-it/procurement-support/campus-wide-software/matlab-and-simulink/>

After registration you may use the online version <https://matlab.mathworks.com/>

Note: in Matlab the index of a vector is starting from 1 and not 0. E.g. If x1 is vector of N elements,

x1(0) doesn’t exist, x1(1) is the first element of the vector x1 , x1(N) is the last element of the vector x1.

For programming exercise questions, there is no need to submit the codes, just give answers to the questions same as the calculation exercises.

///////////// obtain the data and codes ////////////////////////////////////////////////////////

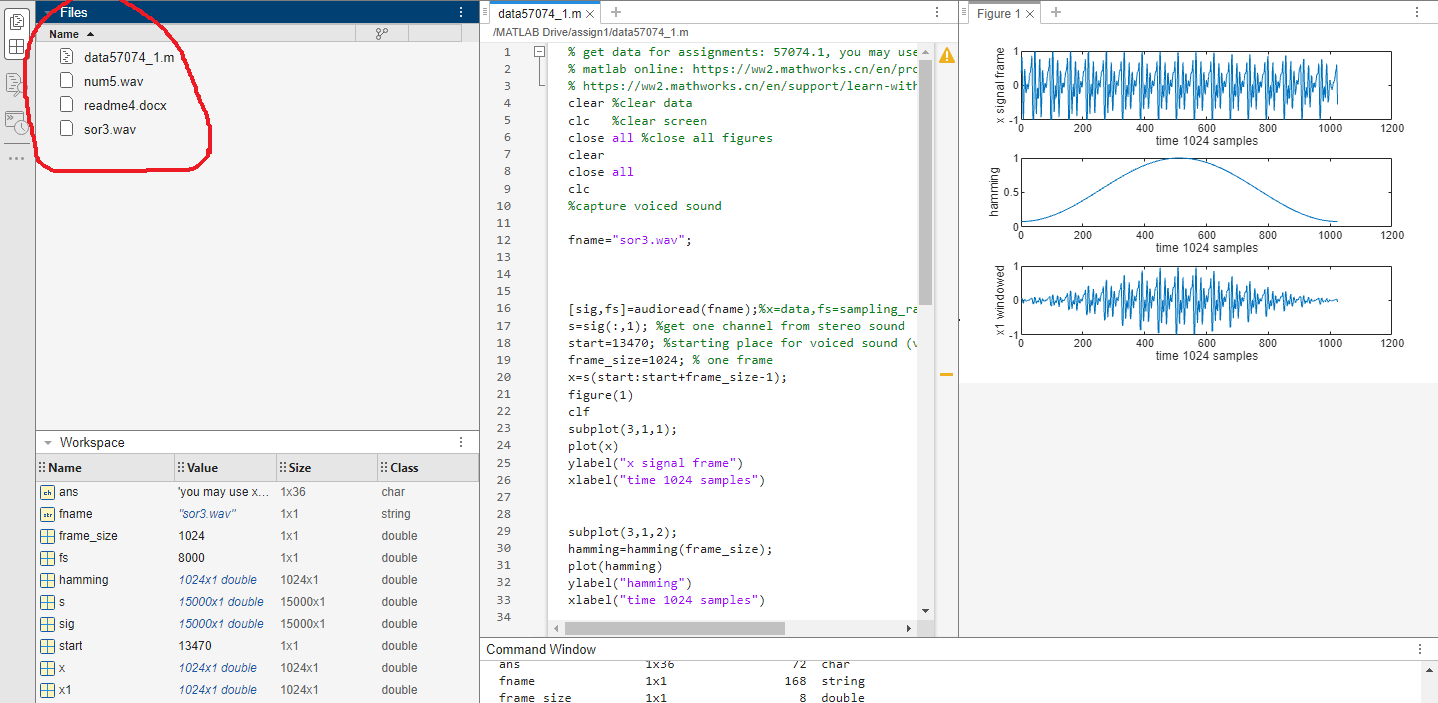
Download the data from

<http://www.cse.cuhk.edu.hk/~khwong/www2/cmsc5707/data57074_1.zip>

unzip into a directory.

Open/sign\_in matlab online (https://www.mathworks.com/products/matlab-online.html)

Upload the files in data57074\_1 to the “Files” window, see the diagram below (you may add and drop files into the Files window)



In the MATLAB command window, type the following instruction to extract the data into your system. This is to run the code in data57074\_1.m

>>data57074\_1

Type the following command to see the variable available in our system. Now you may use them for your calculation. The start and end positions of the segment are hardcoded. Please also read the code to see how to extract a windowed frame from raw speech (.wav) data. You may now use s (raw frame) and x1 (hamming windowed frame) for assignments.

> whos