ENSE807 – Project 2019

You may discuss this project with others. It is good to review the literature and Matlab help pages. But **all answers** must be **in your own words**.

Study the supplied files:

- project2019.m
- simple_conv.m
- signal1.txt

1. Explain briefly what the following instructions do:

- dlmread
- linspace
- subplot
- axis tight

- tic
- toc
- freqz
- ifft

- axis equal
- grid on

[5 marks]

2. Fill in the missing instruction in line 94 of "project2019.m". The instruction must perform an operation in the frequency domain. As a result, figure 6 and figure 3 should show identical results.

[3 marks]

3. Summarise in about 7 sentences what the script "project2019.m" does.

[3 marks]

4. Summarise qualitatively in a couple of sentences what the theory predicts about the cpu-times measured by the script.

[2 marks]

5. Run the script several times for different lengths of *h*. Discuss in about 5 sentences if the results prove or disprove the theory. You can use additional figures/tables/numbers if they help your discussion.

[3 marks]

6. Discuss and/or implement and/or test ways to speed up the filtering. Attach any code you have written. The attached code must run without errors and produce the results mentioned in the discussion. Write your name in the top of each source file. Attach supplementary files if they are required to run your code.

[4 marks]

Submit your solution by email to: mstommel@aut.ac.nz