Work 1
FREQUENCY ANALYSIS OF SIGNALS USING MATLAB

Report instructions

Part A
Page 1: How does f_o depend from the lenght of sampled signal?
Page 2: Answers to section A3.

Part B
Page 3: Answers to questions in the end (include the print of the spectrum!)

Part C
Page 1: Answers to questions on the page.
Page 2: Answer to question at the top. Answers to questions marked with @. Answers to questions in section C3 (print of spectrum included!).

Part D
Page 1: Answers to questions marked with @. Three piece of prints from voice samples ("aaa", whistle and noice) with notes. The prints may be from different group members.

In addition in the report there should be answers to a few things linked with this work:

1. Explain shortly, what Fourier-transform means by studying the formula $X(f_1) = \int_{-\infty}^{\infty} x(t) \cdot e^{-j2\pi f_1 t} dt$, where $x(t)$ is the signal to be transformed and f_1 is some chosen frequency, for example 2002 Hz. Hint: Correlation might have something to do in the transform and $X(f_1)$ is often complex. The representation of e's power can be shaped to form $a + jb$. You may derive formulas and take the formulas to pieces as well as present pictures.
2. How do Laplace- and Fourier-transforms differ from each other?

NOTICE!
Fron the prints you should include to the report only those, from which there is an instruction to do so!

ADJUSTMENT OF THE REPORT
1. The report can be made either written or with computer. The maximum length for written text is 4 pages and 2 pages with computer. These limits are suggestive and can be diverged with consideration.
2. At the beginning of the report there should be a pair number, names, student numbers, the name of the supervising assistant, date and time and also the deadline for the report.
3. The appearance (readibility) is taken into account in grading the report. Clearly made document is easy to read and check, so there may be extra points for appearance.
4. Before you write the report, talk through the work and the results with your lab partner. Use approximately 1 hour to do this. After that, it will be easy to write the report.
5. The dead line for the report is the Friday week after you've done the laboratory work. For special reasons you might get extra time to do the report. A special reason can be eg. illness. Do the report straightly after the laboratory work, when things are still fresh in the memory. The possible extra time for the report you can ask from the head assistant of the course.
6. The written reports are returned to the lockers under the notice board of the course. There is one locker for each laboratory work. Make sure that all the parts of the report stay together. Staple the papers together and use even an envelope if necessary.