5XCC0 Biopotential and Neural Interface Circuits

Assignment 3

Introduction to Cadence

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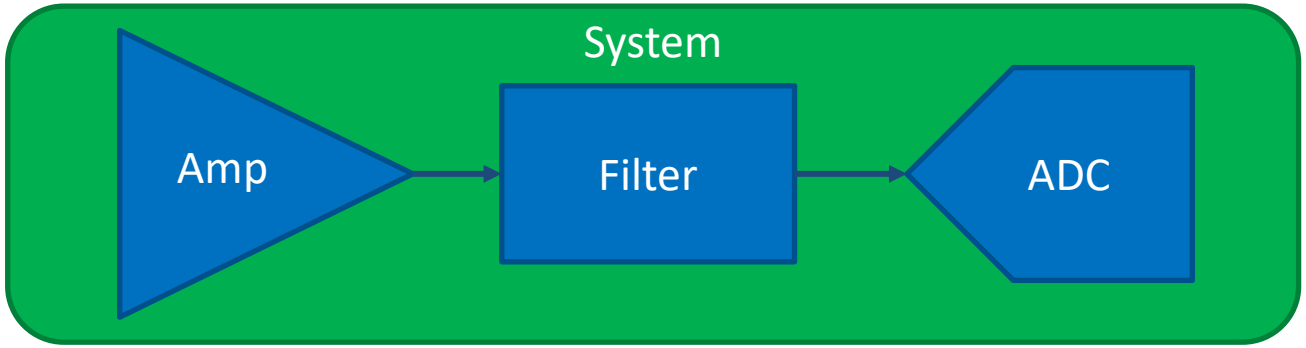
Overall Assignment

- In 6 steps (spread out over 6 weeks), we will design a neural recording interface for AP & LFP recording. The system is composed of an amplifier, a filter, and an ADC.
  - This week, we will focus on step 3: You will get familiar with Cadence Virtuoso software to design circuits & layouts and to run basic simulations.



- In a separate design assignment (week 6), we will also design a neural stimulation circuit.

Assignment

- Follow the Cadence Tutorial until the end (separate PDF file)
- Make a screenshot of the following things, store them in 1 PDF file, and upload that to CANVAS before the deadline
  - Your inverter schematic (slide 16)
  - Your inverter test bench (slide 20)
  - Your DC, AC, and noise simulation results (slide 32)
  - Your inverter layout (slide 52)
  - The DRC result window, which should show “No DRC errors found” (slide 55)
  - The LVS result window, which should show a “match” (slide 57)
  - A view of your schematic where you show the parasitics (slide 62)
- NB: the slide numbers refer to the Tutorial where similar figures are shown as those you have to upload.