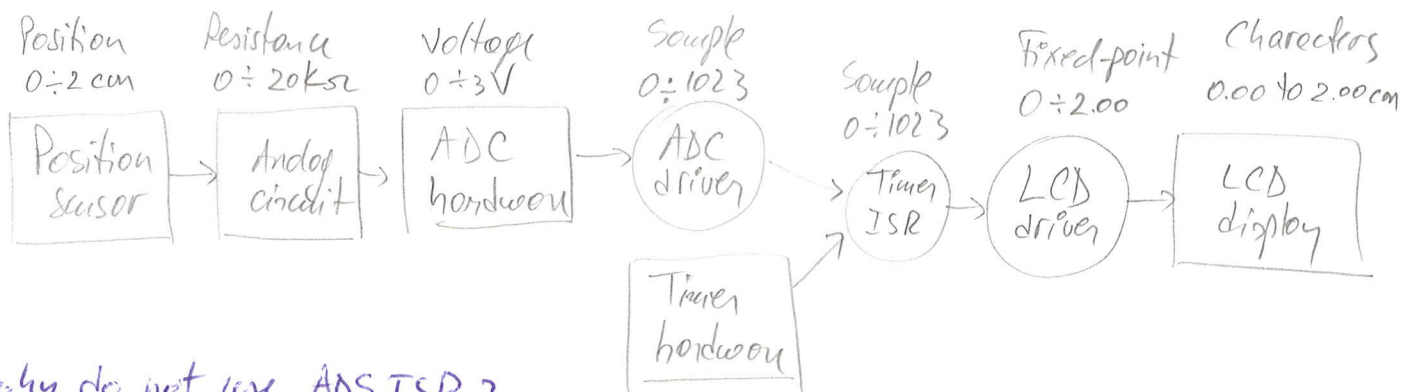


① Data Flow Graphs

- A block diagram of the system, showing the flow of information
- Rectangles = represent hardware components
- Ovals = represent software modules.
- A useful conceptual model of the hw/sw system; especially during the high-level design phase.

Example 1 A simple position measurement system.

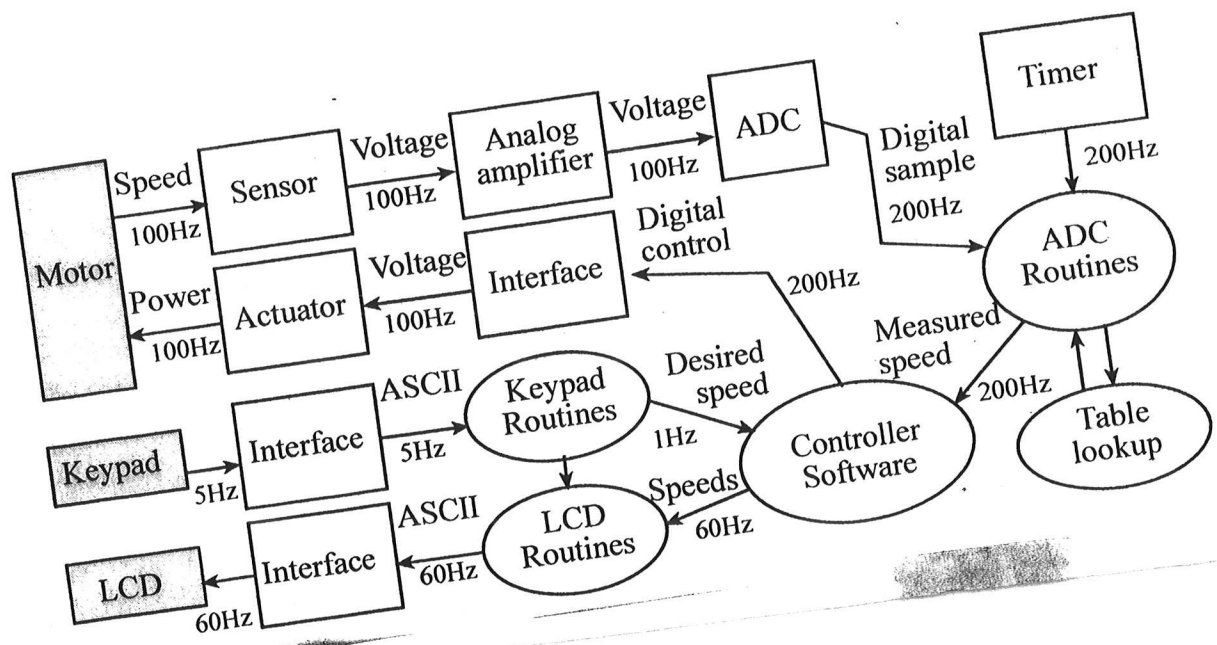
A sensor converts position in an electrical resistor. Analog circuit converts resistance to $0 \div 3V$ range required by ADC. ADC converts to digital sample. ADC driver, using the ADC & timer hardware, collects samples and calculates voltages. The software converts voltage to position. Voltage and position data are represented as fixed-point numbers. The position data is passed to the LCD display driver, which will create ASCII strings sent to the LCD display module.



Q: why do not use ADSISR?

Example 2 Motor controller

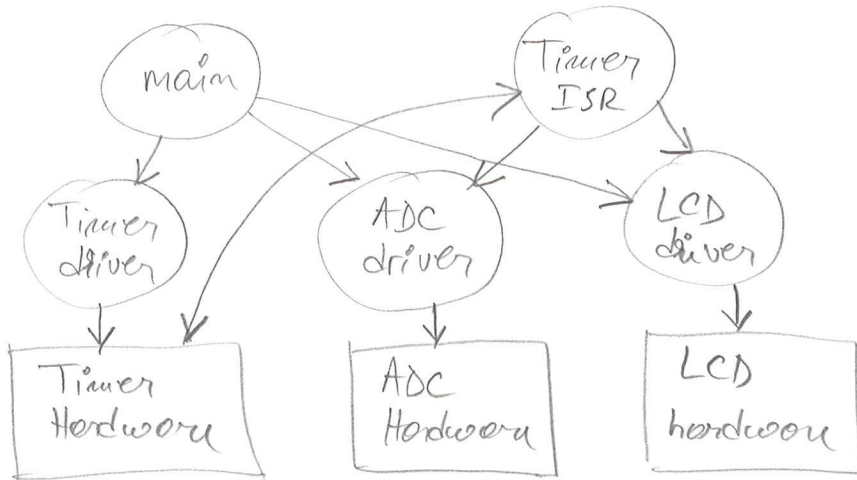
- Notice that arrows are labeled with data type and bandwidth.



② Call Graphs

- A graphical way to define/illustrate how the Hw/sw modules interconnected. Again, use rectangles and ovals.

Example 1: Position measurement system.



Notes - This is not detailed. A detailed coll graph would include each software function and I/O port.
- Normally Hw is passive and the sw initiates Hw/sw communication. But, possible for Hw to interrupt SW and cause certain software modules to be run!

Example 2: Motor Controller

