

# Engineering 6806 ECE Design Project

## Modularization

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Fall 2007

# Functional Decomposition

The goal is to break down the system into a hierarchy of functional blocks, each of which:

- 1 Does something useful for the system (its *function*).
- 2 Has clearly defined inputs and outputs (its *interface*).
- 3 Can be understood independently from the other blocks.

Together the blocks interact to implement the system behaviour.

Note that

- the hierarchy is about which blocks *are sub-blocks of* each other, not which ones *use* each other.
- the focus is on *function* rather than physical structure or location.

# Documentation

For each block decide (and document):

**Name** — try to be precise and descriptive.

**Responsibilities** — what part(s) of the behaviour does it accomplish?

**Interface** — what other entities know about this entity (inputs and outputs and how they are communicated).

**Sub-blocks** — lower level design to implement the behaviour (may go several levels deep).

# Too Much Modularization?



At the lowest level, implementing a block should be a task.