

# ***Computer Organization***

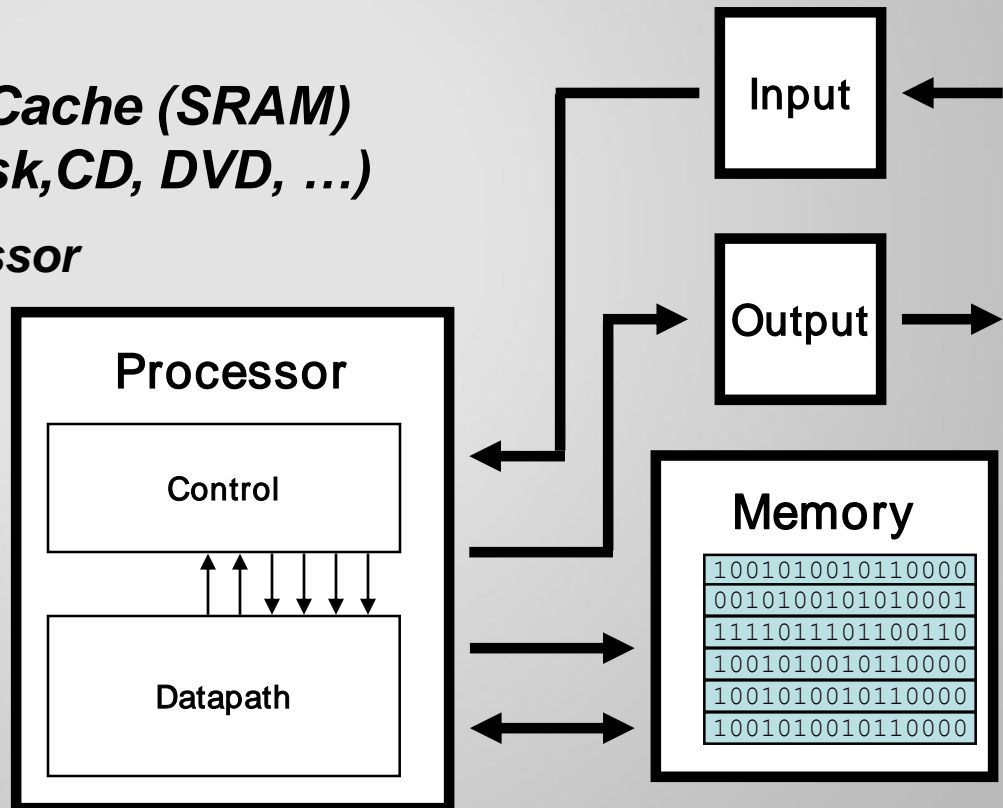
***B.Tech.II CSE (Sem-3)***

# ***Topics***

- ***Components of Computer***
- ***Structure & Function of Computer***
- ***The Computer Level Hierarchy***
- ***The Von Neumann Model***
- ***Moore's Law***
- ***Terminology***

# Components of a Computer

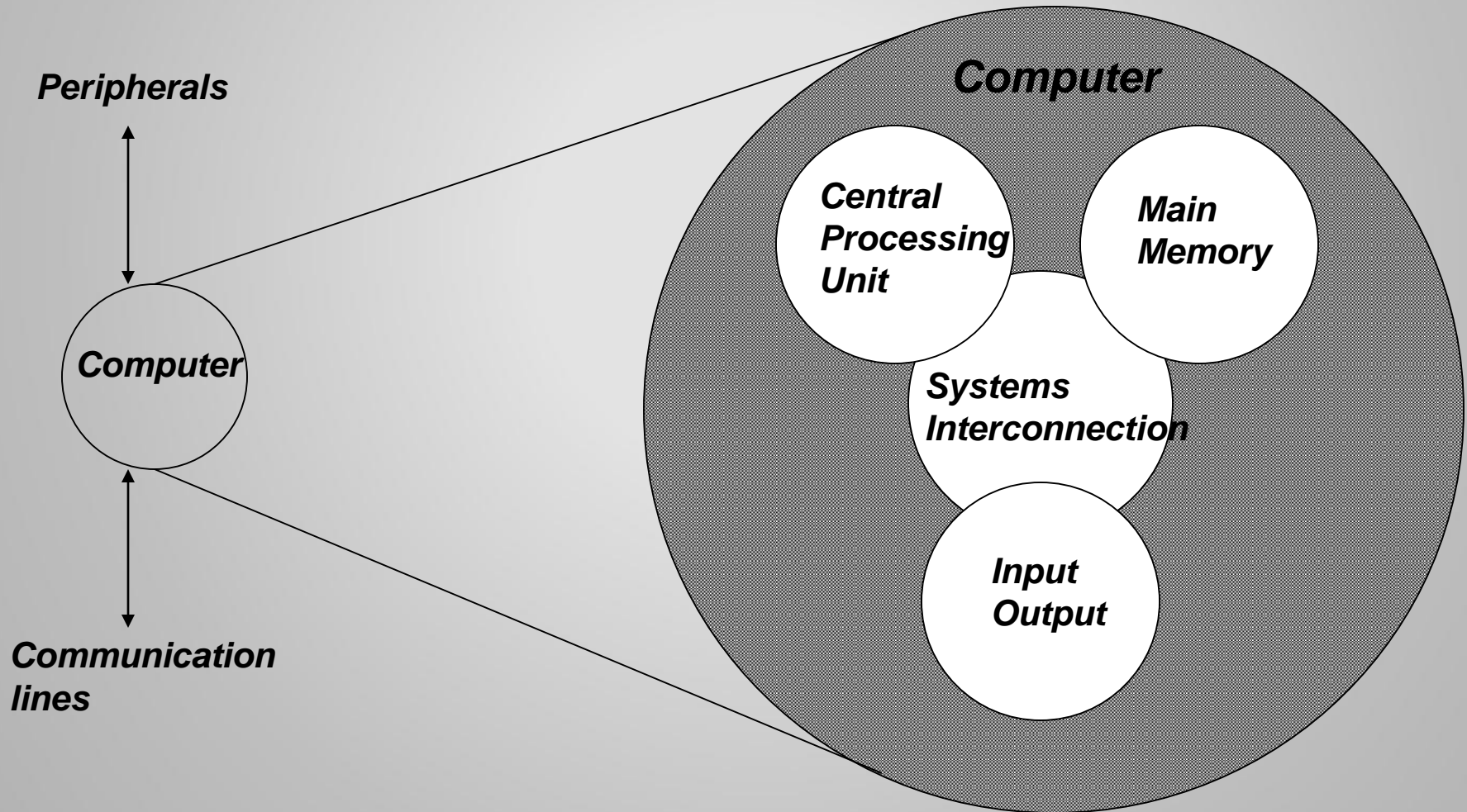
1. *Input (mouse, keyboard, ...)*
2. *Output (display, printer, ...)*
3. *Memory*
  - *Main (DRAM), Cache (SRAM)*
  - *Secondary (Disk, CD, DVD, ...)*
4. *Datapath* } *Processor*
5. *Control* } *(CPU)*



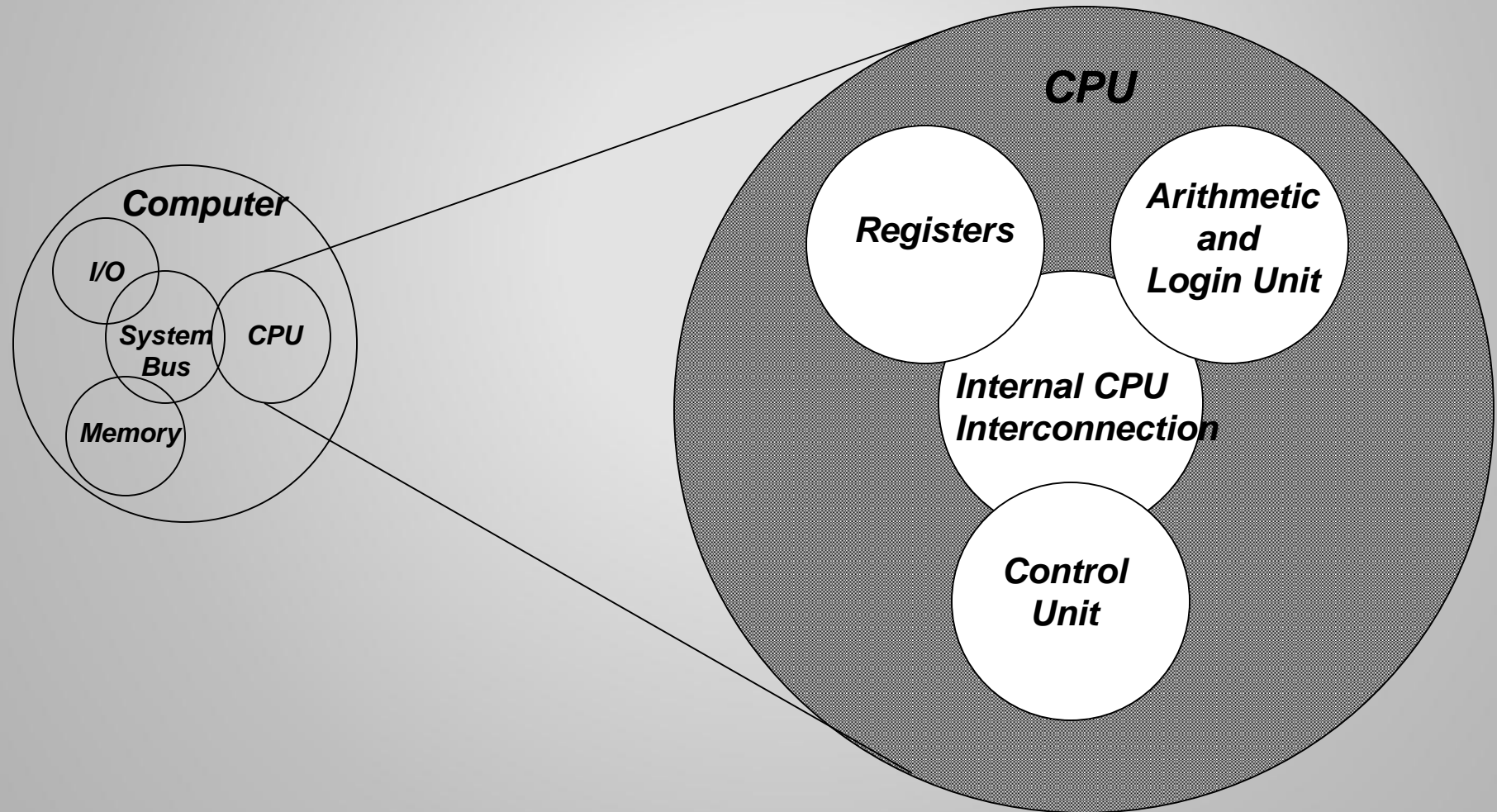
# ***Structure & Function of Computer***

- ***At the most basic level, a computer is a device consisting of :***
  - ***A processor to interpret and execute programs***
  - ***A memory to store both data and programs***
  - ***A mechanism for transferring data to and from the outside world (Input/Output)***
- ***Structure is the way in which components relate to each other***
- ***Function is the operation of individual components as part of the structure***

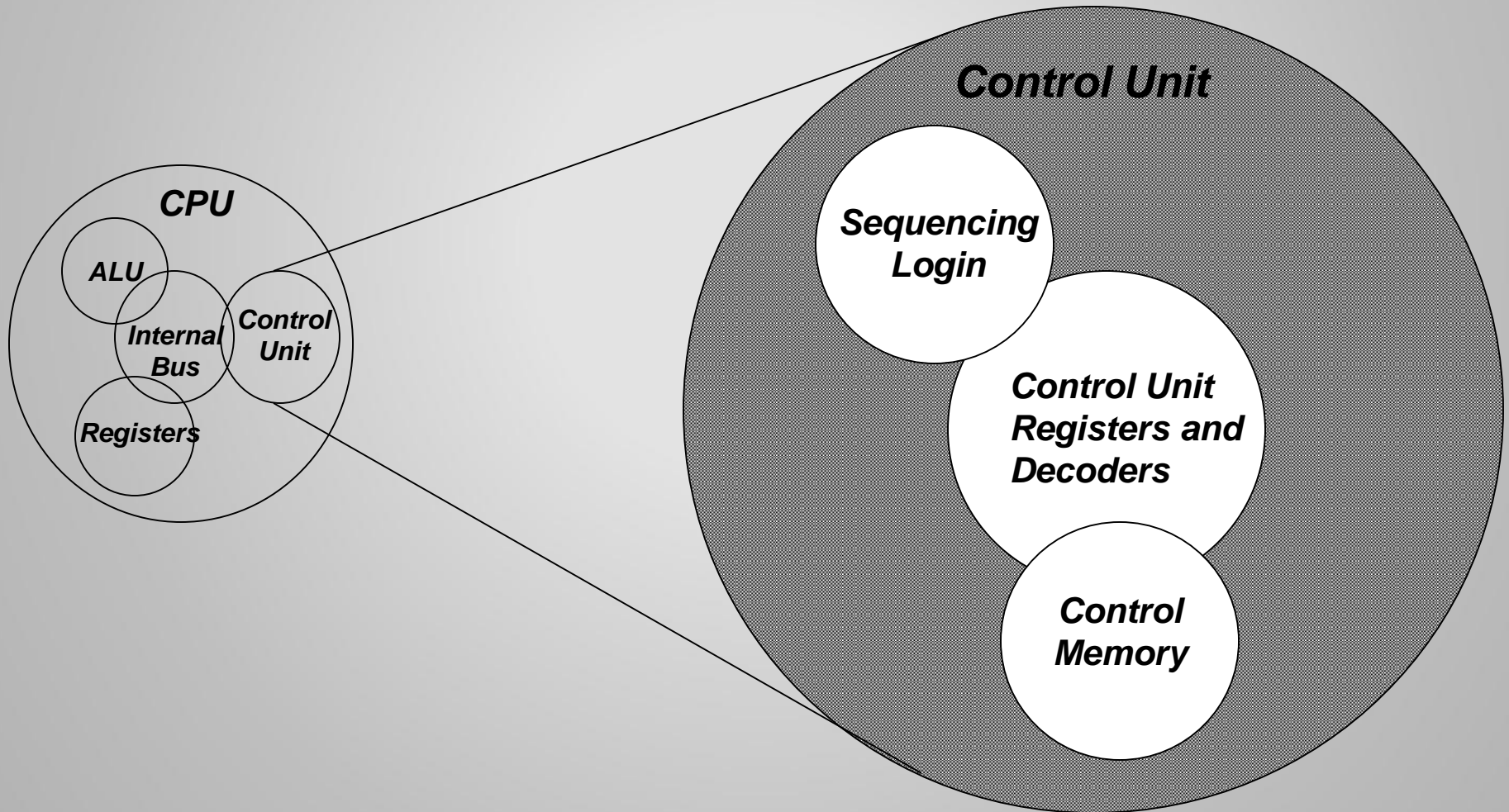
# ***Structure - Top Level***



# ***Structure - The CPU***



# ***Structure - The Control Unit***

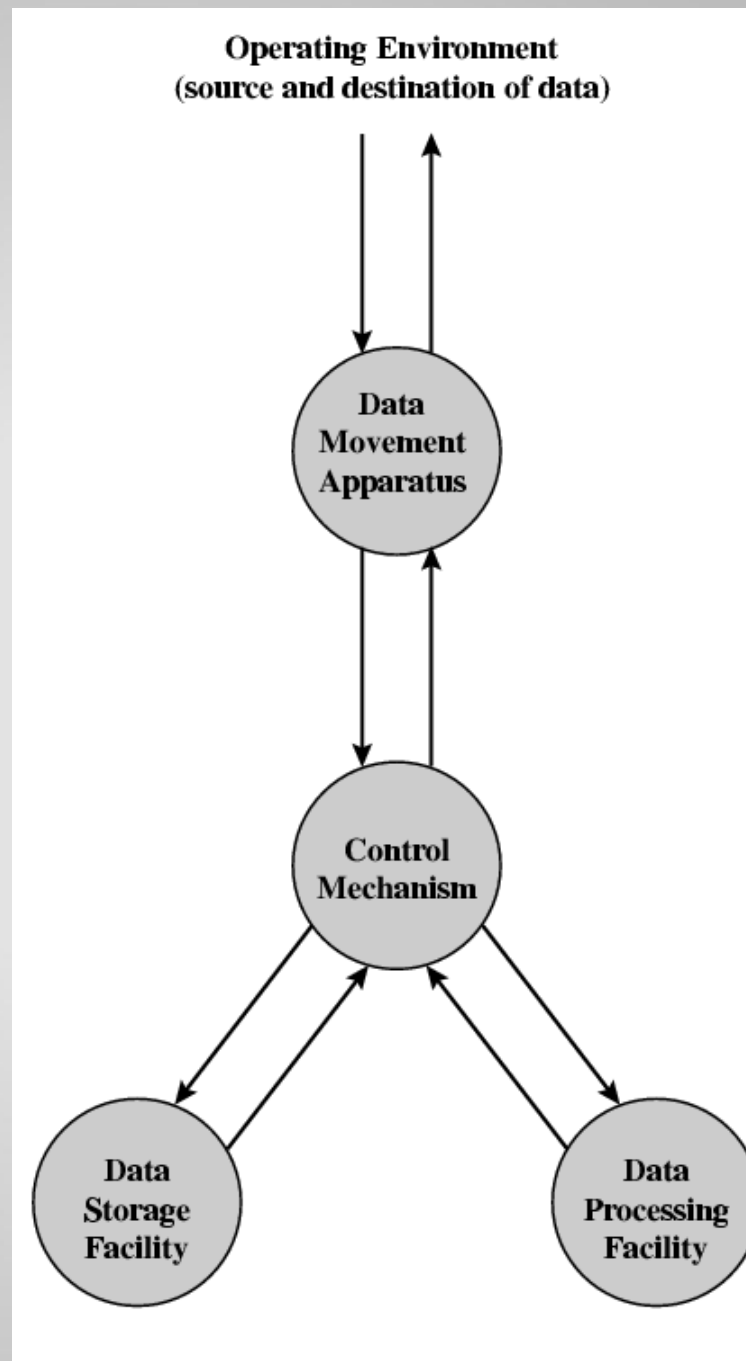


# ***Computer Functions***

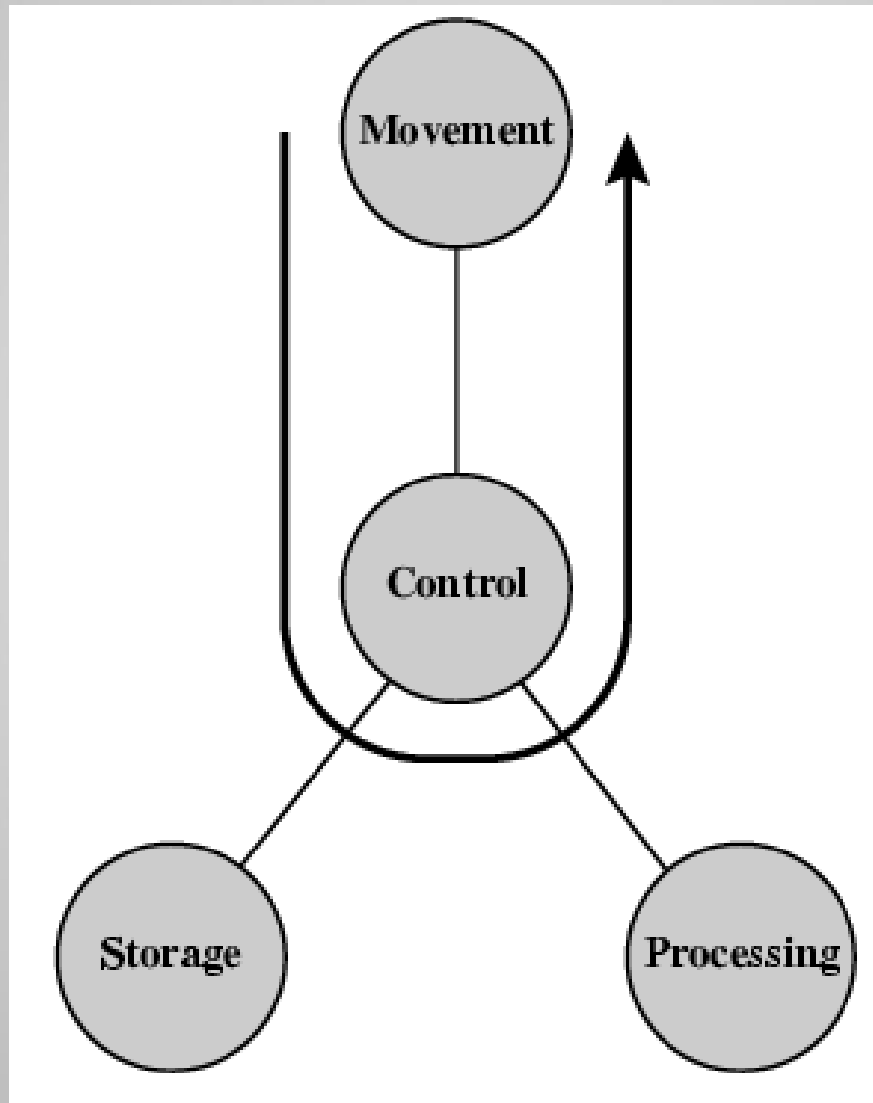
- ***Data processing***
- ***Data storage***
- ***Data movement***
- ***Control***



# ***Functional view***

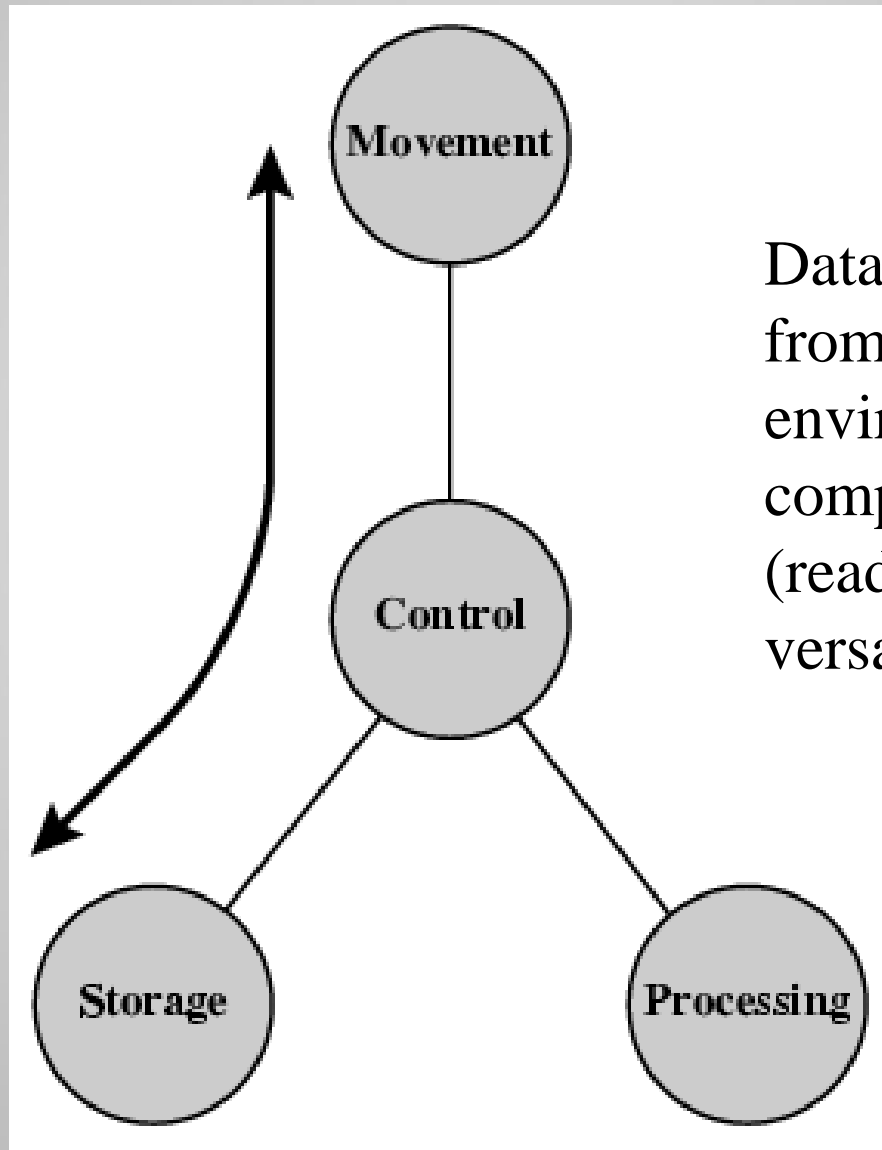


# ***Operations (1) Data movement***



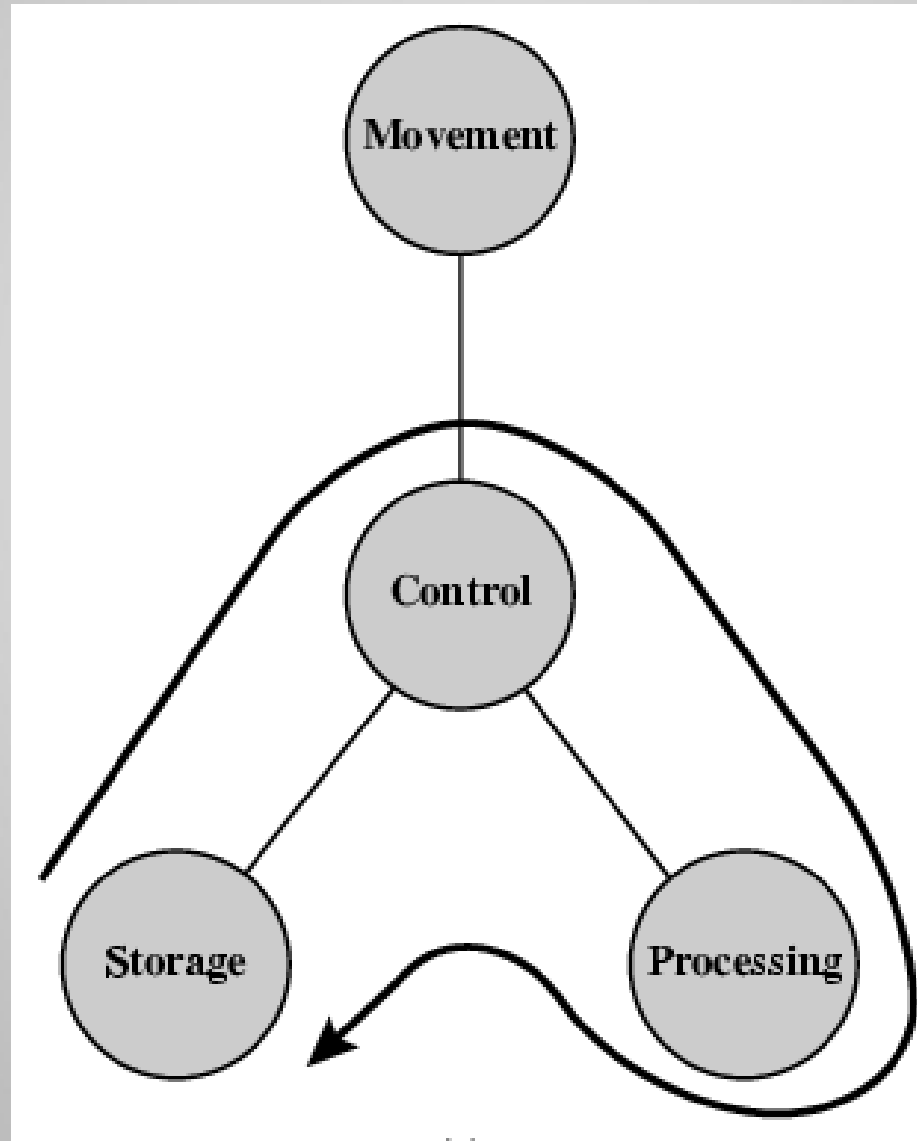
Simply transferring data from one peripheral or communications line to another.

## ***Operations (2) Storage***



Data transferred from the external environment to computer storage (read) and vice versa (write).

## ***Operation (3) Processing from/to storage***



# ***Operation (4)***

## ***Processing from storage to I/O***

