

# *Introduction to ICT and Programming*

## *Introduction*



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# *Course Objectives*



- Discuss Fundamental Concepts of Information Technology (IT)
- Show how Computers are Used as Practical Tools for Solving Personal, Business, and Academic Problems
- Learn Basic Computer Skills that Enables the Students Explore IT World
- Enabling students to work with various office software's
- Learn Basics of how to do programming

# *What are ICT?*

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- Information
- Communication
- Technologies

**ICT** are the hardware and software that enable society to create, collect, consolidate and communicate information in multimedia formats and for various purposes.

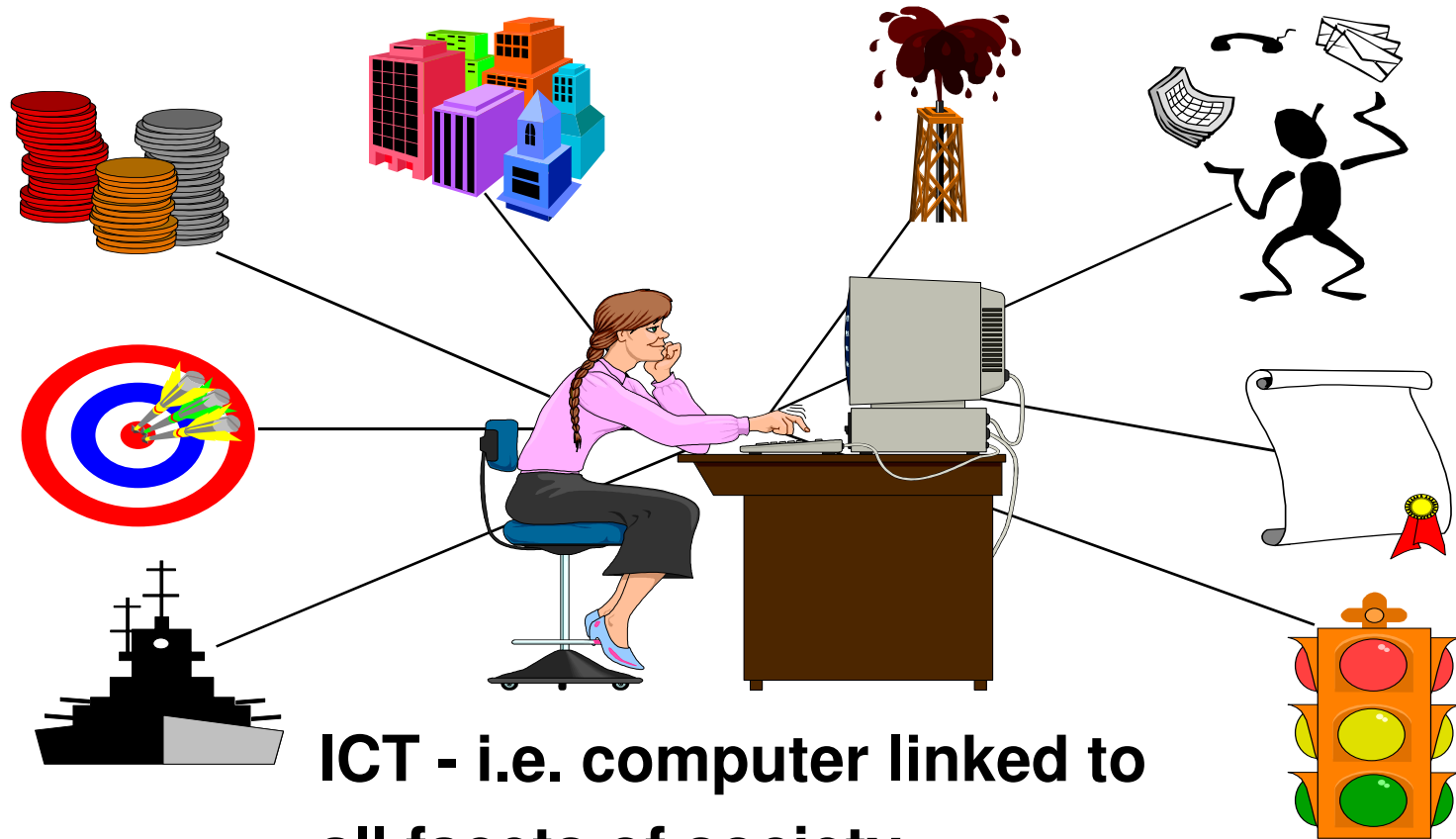
**The technology used to handle information and aid communication**

# *Impact of ICT on society*

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- Developments in ICT have brought about the merger of
  - the computing,
  - information,
  - communications,
  - entertainment,
  - mass media industriesthereby providing a means of exchanging information in the digital format used by computers.

# ICT



**ICT - i.e. computer linked to  
all facets of society**

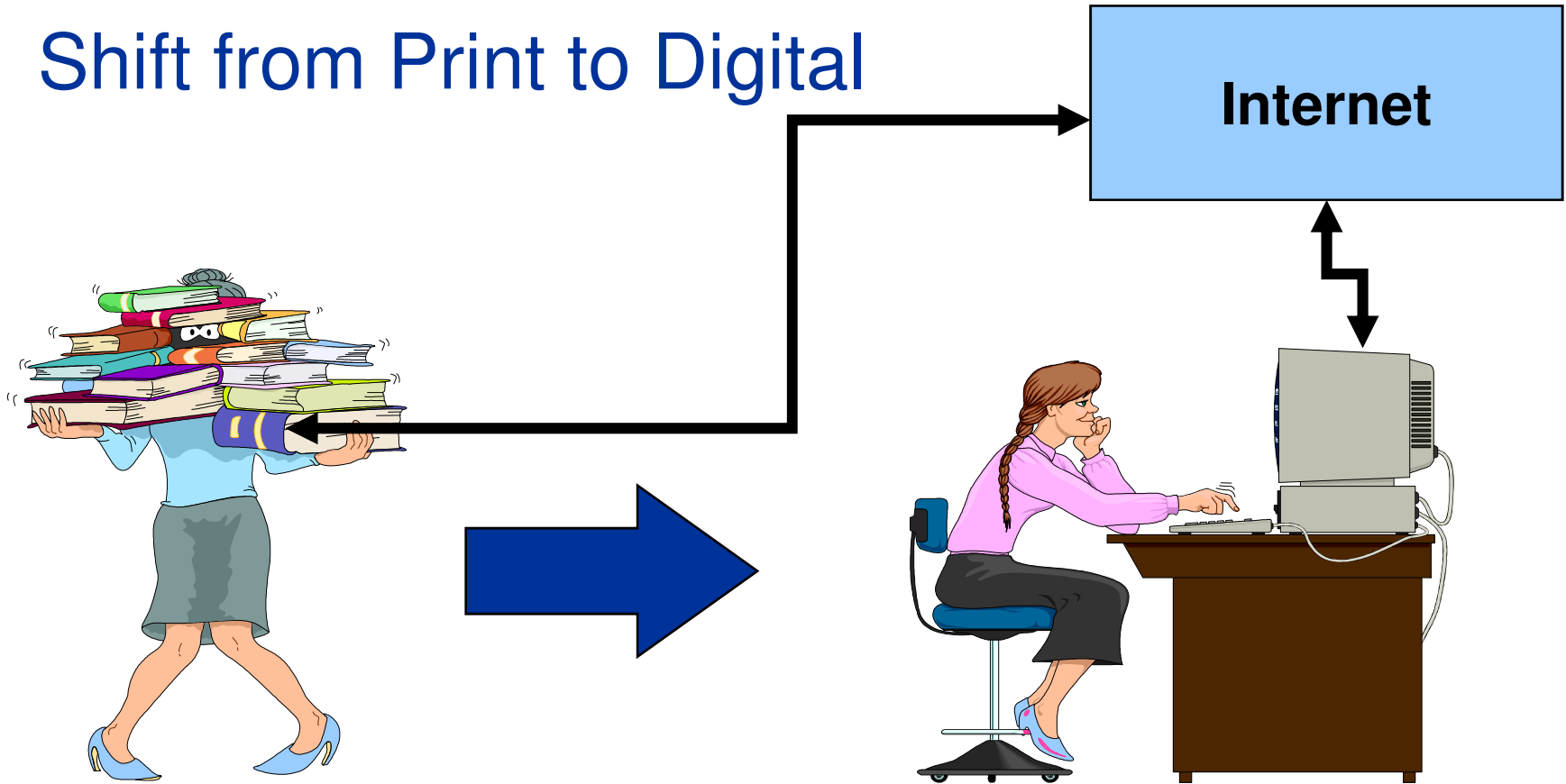
## *What is the impact of ICT on information centers?*

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- ICT made information creation in digital format possible.
- ICT made online access and file transfer possible
- ICT made networking and sharing of information resources possible

# *Transition*

Shift from Print to Digital



- **ICT has made the transfer of digital information from remote sites possible**

## *What are the effects of these developments on the user community?*

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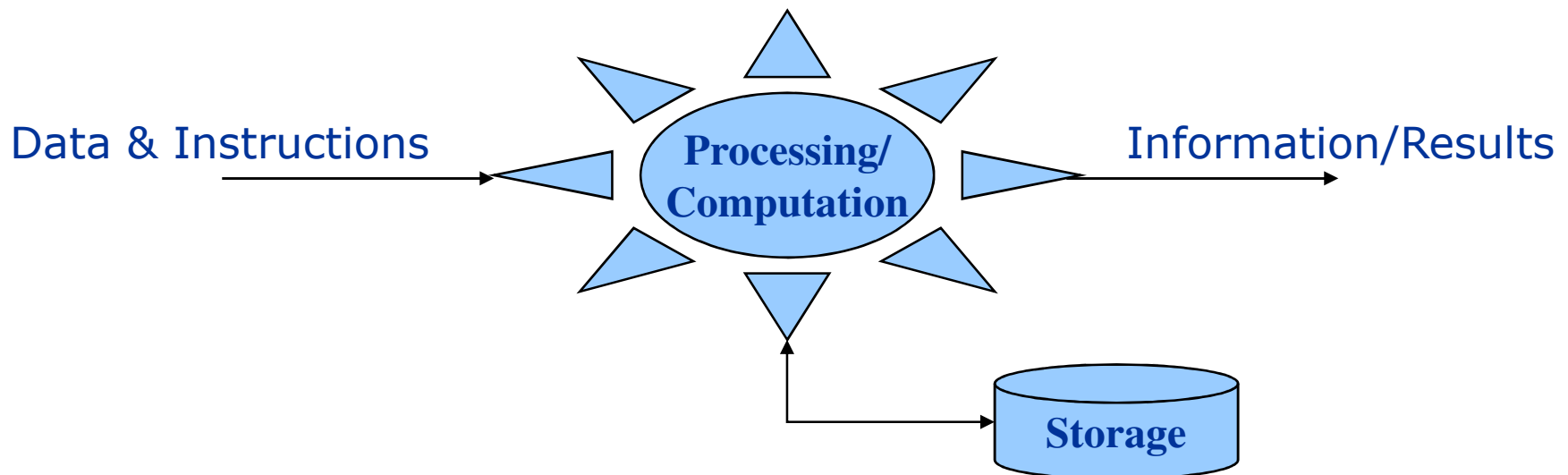
- Increases level of technology literacy
- Increases demand for better and faster access to information
- Aggravates discrepancies between the information rich and information poor.



# *Few Basics*

## ■ Computers

- A computer is an electronic machine that has the capability to perform certain types of processing/computation on the supplied data. It can also store the data as well as generated results.



# *Few Basics*

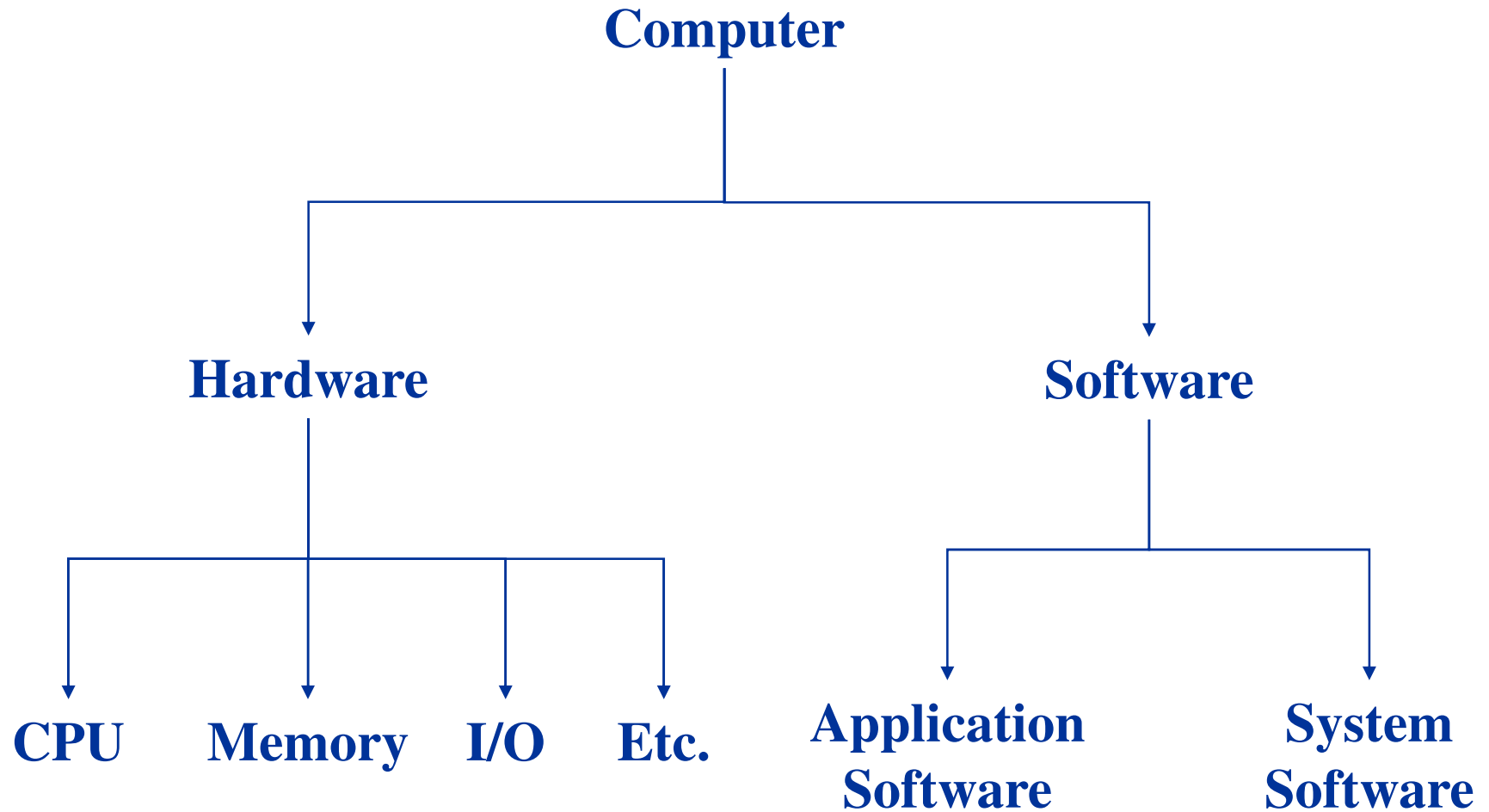
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## ■ Computers

- Device that accepts input, process and stores data, and gives output
- Device that can execute specific set of instructions in a well-defined manner



# *Few Basics....*



# *Few Basics*

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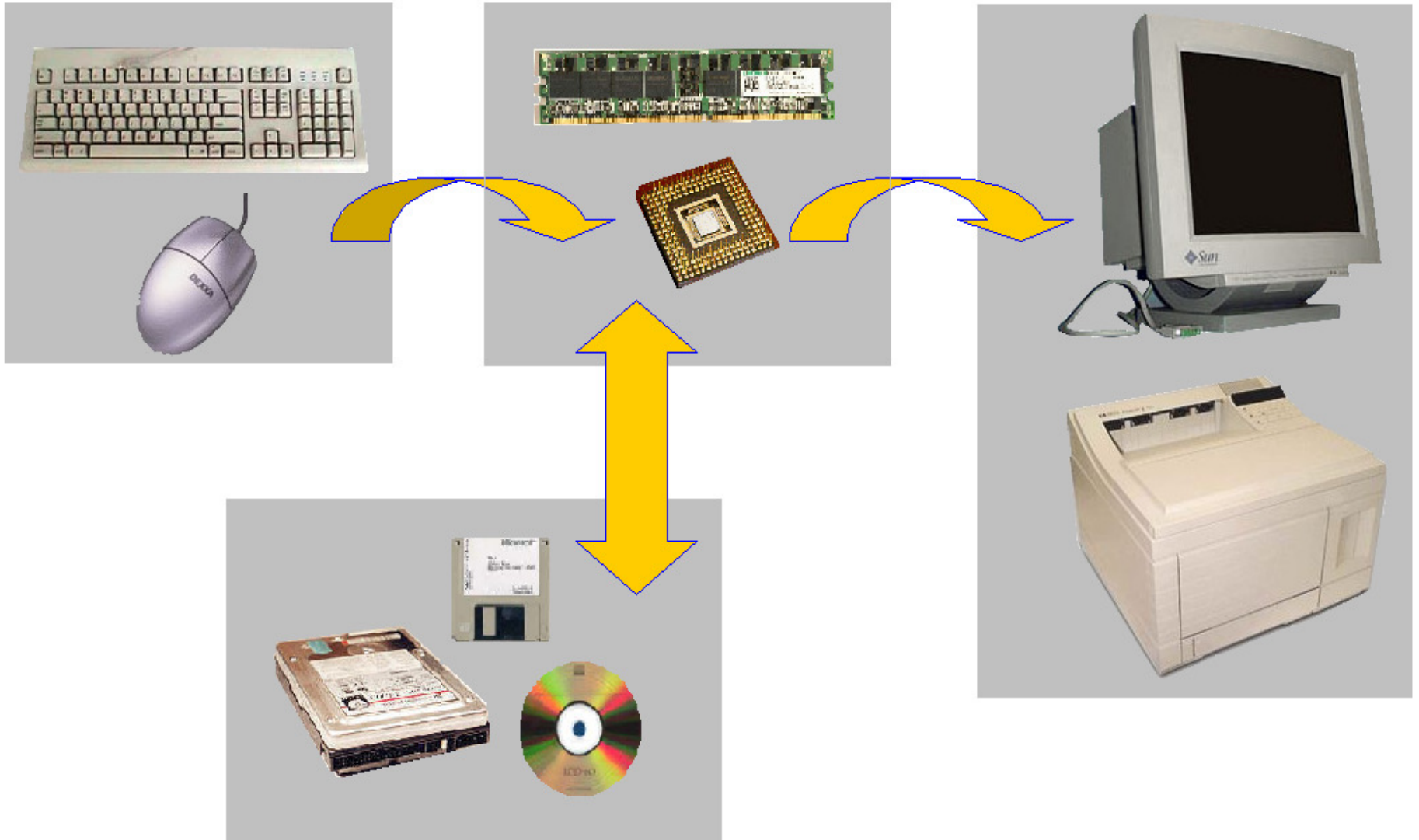
## ■ **Computer Hardware**

- Electric, electronic, and mechanical devices

## ■ **Computer Software**

- Programs and data in electronic form on a storage medium
- Program- Sequence of Instructions

# *Few Basics: Hardware*



# *Few Basics*

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- Input devices
- Processor & Memory
- Storage devices
- Output devices

# *Few Basics: Input Devices*

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- Mouse
- Keyboard
- Joystick
- Light pen
- Tablet
- Camera
- Microphone

# *Few Basics : Output Devices*

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- Peripheral Devices:
  - Printer - laser, inkjet, dotmatrix
  - Plotter - flatbed, drum
  - Speakers
  - Monitor - CRT, LCD, projector



# *Few Basics : Processor/CPU*

- Pentium
  - 8086
  - Celeron
  - SPARC
  - Alpha
- etc

## **What are Control Unit and ALU?**

The arithmetic/logic unit (ALU) contains the electronic circuitry that executes all arithmetic and logical operations.

The control unit (CU) of the CPU contains circuitry that uses electrical signals to direct the entire computer system to carry out, or execute, stored program instructions.

# *Few Basics : Secondary Storage*

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- Hard disk
- Floppy
- CD
- DVD

# *Few Basics: Primary Storage*

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- RAM
- ROM
- etc.

Virtual Memory?

# *Few Basics: Bits & Bytes*

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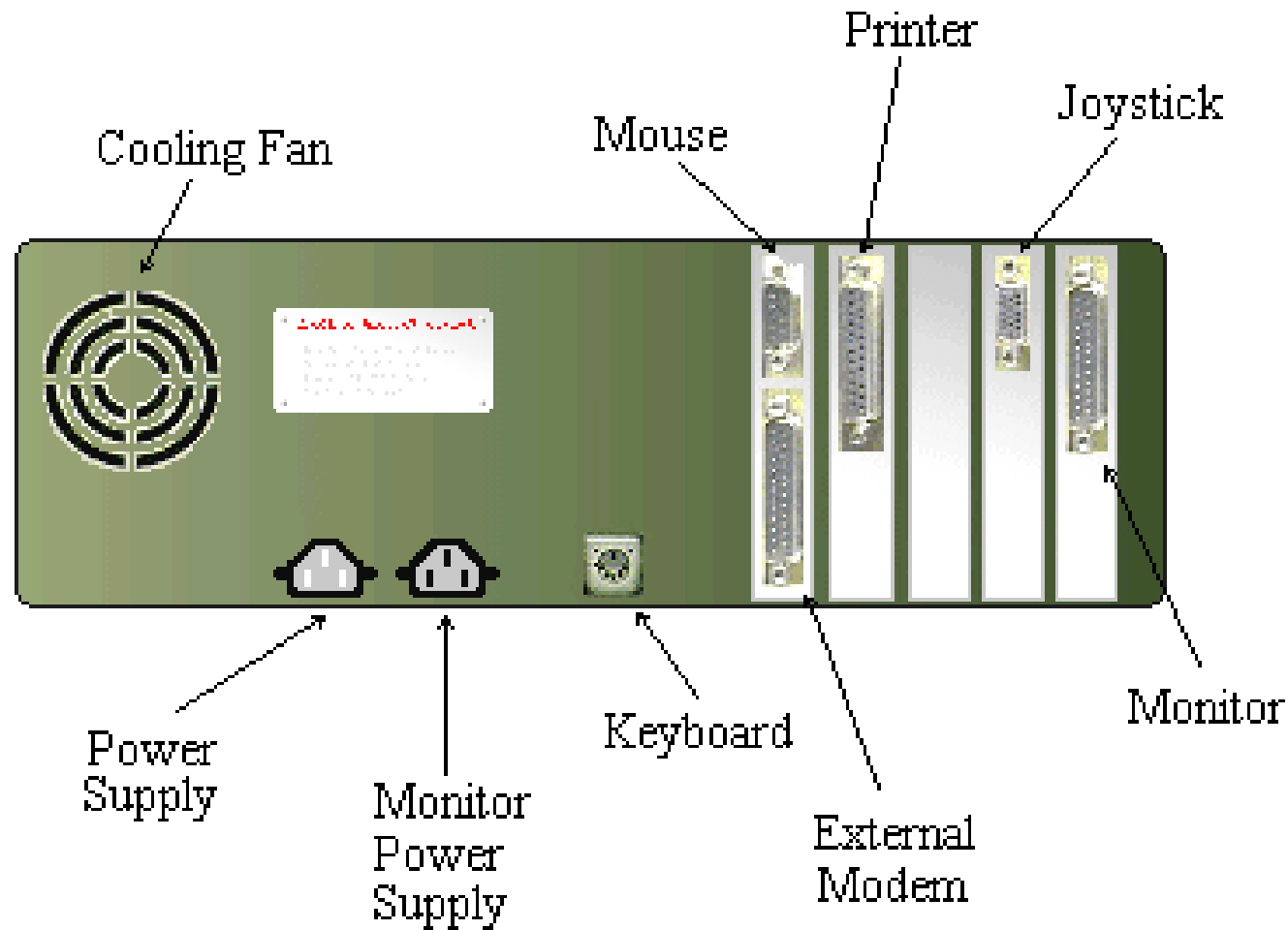
- **Bit - a binary digit e.g. 1 or 0**
- **Byte - a binary word consisting of 8 bits**
- **Kilo Byte - 1024 bytes**
- **Mega Byte - 1024 KB**
- **Giga Byte - 1024 MB**
- **Tera Byte - 1024 GB**

# *Few Basics: Ports*

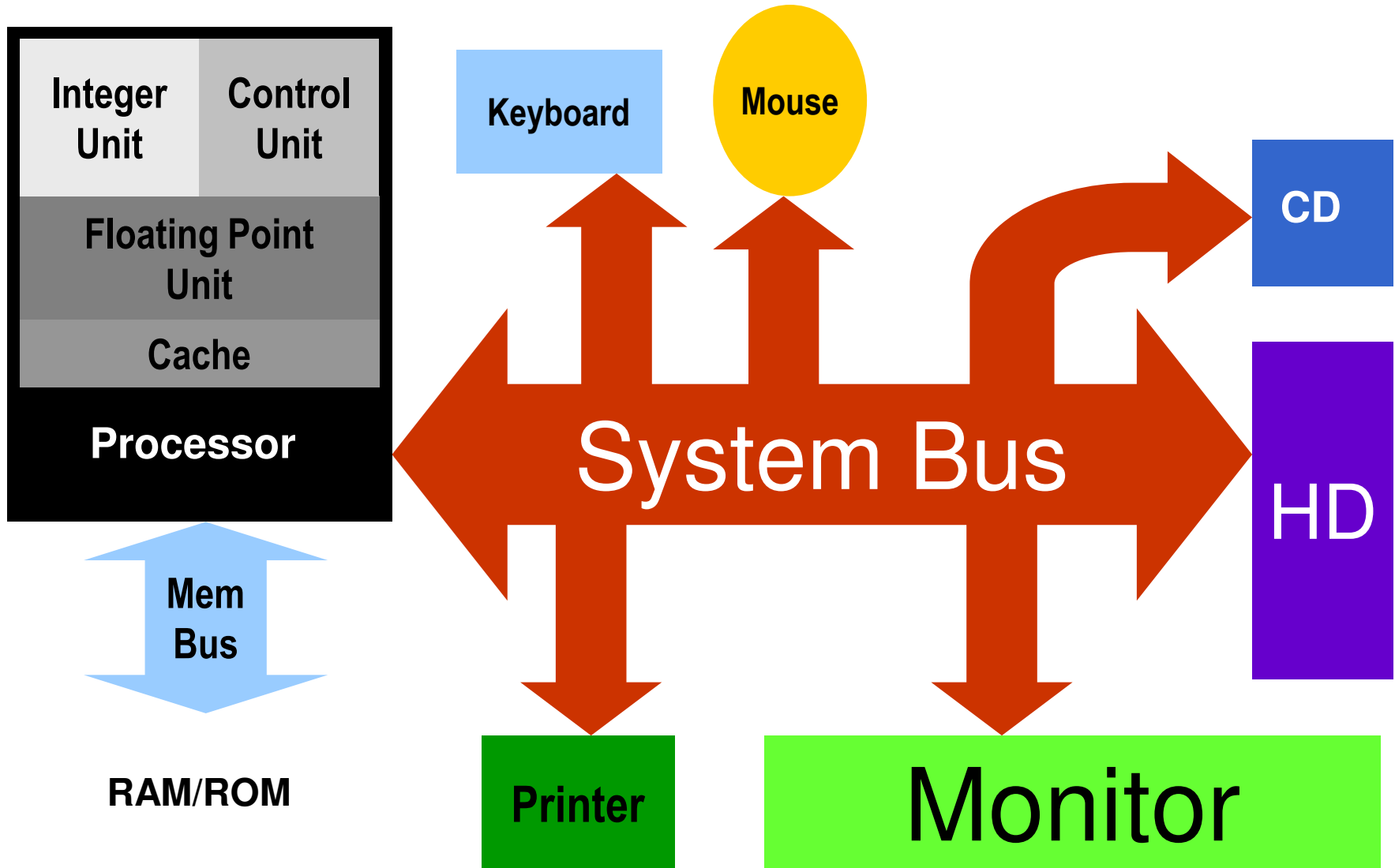
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- Parallel
  - Serial
- etc.

# *Few Basics: Figure*



# *Few Basics: BUS Figure*



# *Few Basics: Computer Software*

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## **Licensed and Free Software**

- Single user license
- Multiple user license
- Concurrent use license
- Site license
- Public domain software
- Shareware



# *Few Basics: Computer Software*

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- **System Software:**

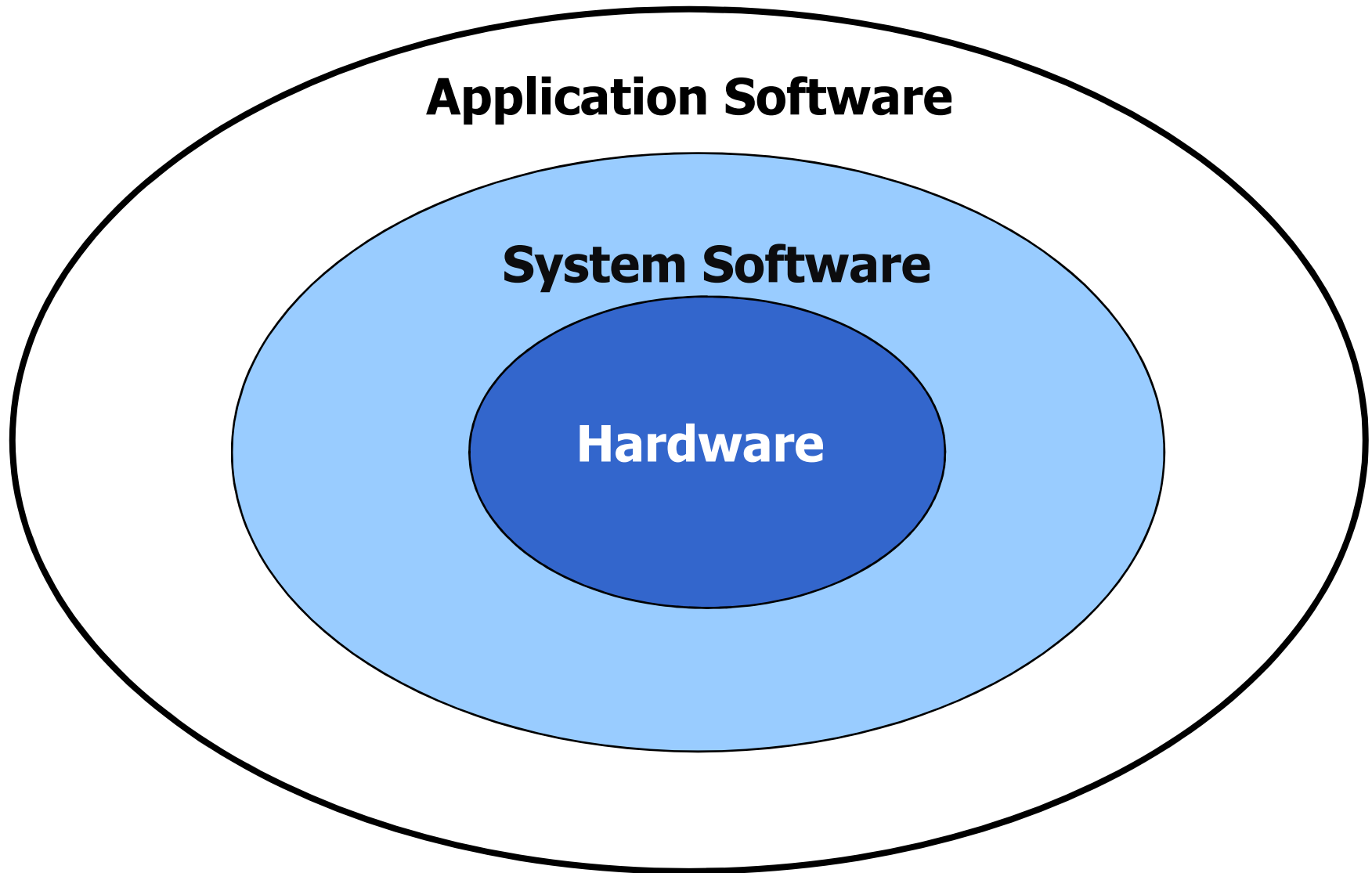
- Controls the computer
- Performs the basic operating tasks

- **Application Software:**

- Help user to accomplish a specific task

# *Few Basics: Figure*

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# *Few Basics: System Software*

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## **Operating systems**

- Works as coordinator between hardware and user software Example: Opening a word document, screen display, print, and save.
- Allocates system resources (CPU, peripherals)  
Examples: use of key board, mouse, playing music, displaying on monitor

# *Few Basics: System Software*

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## **Utility Software**

- Software that augment the system software
- ***Example:*** preparing disks to store data

# *Few Basics: System Software*

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## **Device Drivers**

- The system software that helps computer control a peripheral device. Usually supplied by the vendor of the computer device
  
- Example: DD for mouse, DD for Laser printer

# *Few Basics: System Software*

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## **Programming Languages**

- Tools to create the Application Software

# *Few Basics: Application Software*

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## **Business software**

- Help organization to efficiently do routine tasks
  - Horizontal Market business software
  - Vertical Market business software

## **Productivity software**

- Software which enhance the productivity

## **Entertainment software**

## **Educational software**

# *Few Basics: Computer Networks*

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## **Network:**

A collection of computers and other devices that communicate with each other to share data, hardware and software

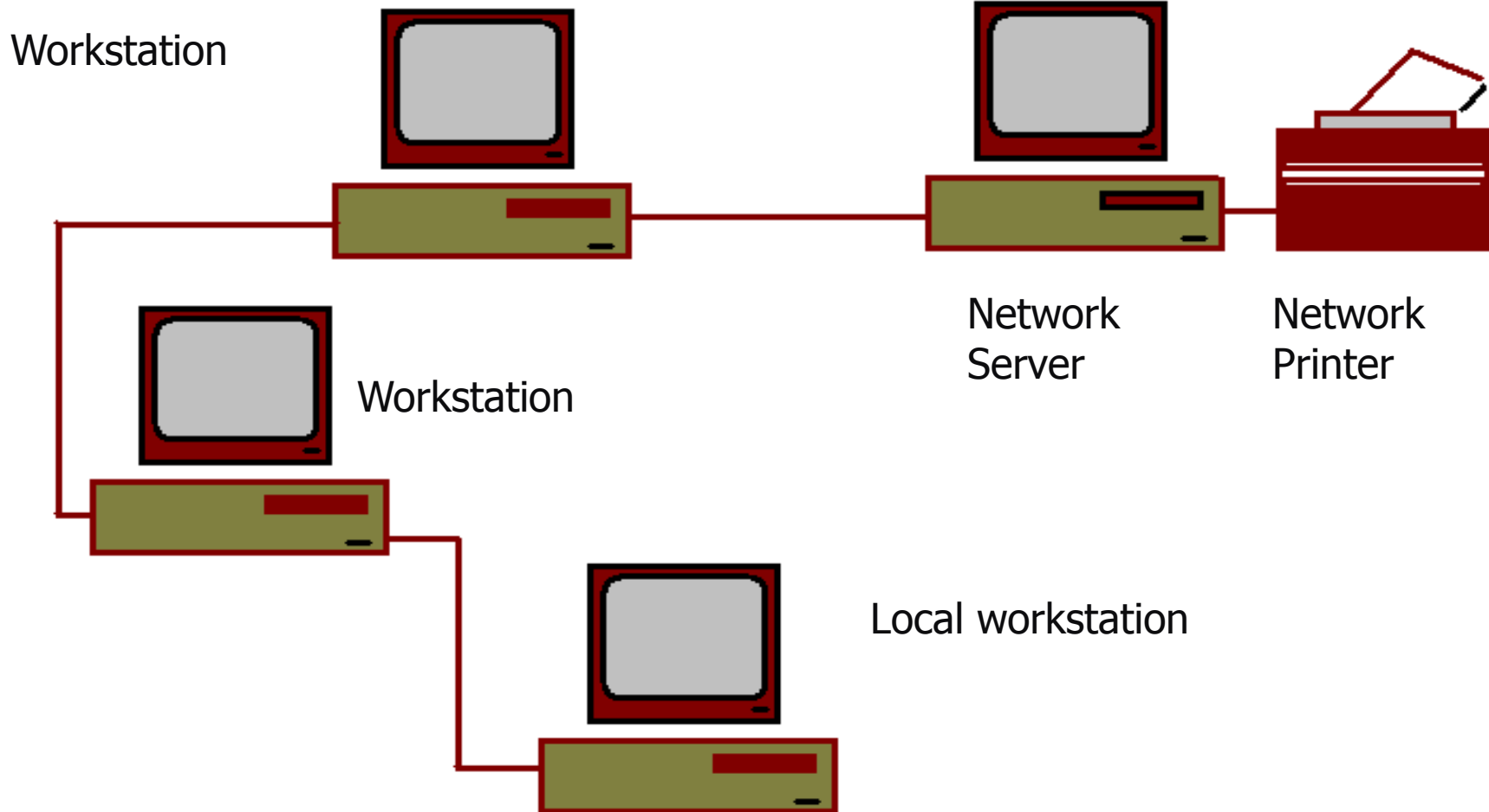


# *Few basics: Computer Networks*

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- **Local Area Networks (LAN):** Network that is located within a relatively limited area (a building or campus)
- **Wide Area Networks (WAN):** Network that covers a large geographical area

# A Computer Network



# *Few Basics....*

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- **Workgroup computing**
  - Gather remote resources in such a way that they would better utilize each other's power.
- **Computer Network**
  - Linking computers together in such a way that they can share the resources with each other.
- **Internet**
  - Network of networks; largest network available in the form of global village

# *Few Basics: Internet*

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- Is a collection of local, regional, and national computer networks that are linked together to exchange data and distribute computing tasks
- World Wide Web (WWW) and Electronic Mails (E-mail) are among the Internet Services

# *Few Basics*



- **Information**

- Data that have been collected and processed into a meaningful form

- **Information System**

- A computer-based system that provides both data processing capability and information for managerial decision making

- **Information Society**

- A society in which the generation and dissemination of information becomes the central focus of commerce.

- **Information Technology**

- A collective reference to the integration of computing technology and information processing

# *Few Basics*

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- **Telecommuting**
  - Computing via a communications link between home and office
- **Communication Channel**
  - The facility by which data are transmitted between locations in a computer network
- **Communication Protocols**
  - Rules established to govern the way data in a computer network are transmitted



- **THANKYOU**