Computing

(Introduction to Computers- GPD 113)

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What is Information Technology (IT)? - (Computing is a subset of IT?)

- **I T (in short) is the means by which science is used in the collection, processing, storage and movement of information.**

- **First, computers could only cope with data, which is why people used to talk about "data processing". Now the technology is much more developed and it is 'information' which can be processed-hence the name.**

Reasons why you must study Computing or Information Technology

- **We live in a global village.**
- **We live in an era characterized by transmittal of information.**
- **Our work constantly requires knowledge in computers.**
- **Our daily lives will revolve around use of computer as a tool.**

Economic Transitions

- **Economic eras are periods in which majority of workers engage in a particular economic activity to make a living**
  - **Agrarian: era characterized by farming**
  - **Industrial: era characterized by manufacturing industry**
  - **Information: era characterized by transmittal of information**

Economic Transitions (contd.)

- **Agricultural age extends all the way back to pre-civilization (about 25,000 years). *As of 1993 less than 2.0 per cent of Americans made a living farming.***

- **Industrial age began with the industrial revolution of the19th. Century (*from 1860).* Occurred in three phases:**
  - ***Entrepreneurial Industrialization.***
  - ***Corporate Industrialization***
  - ***Government Industrialization (military-industrial complex)***

Economic Transitions
- Information Age

- **John Naisbitt introduced Americans to *the Information Age* in his book *'Megatrends'* in the 80's.**
- **Information Age** occurred over a period of 30 years from the late 50's (***in increments of 10 years).***
  - **Discovery of ideas (*resulted from threat to industrialism and unemployment of the70's).***
  - **Awareness of ideas.**
  - **Assimilation of ideas (*resulted from building linkages and networks to connect knowledge into usable communities of information)***

Economic Transitions

Economic Era	Primary Resource	Transform Agent	Skills Needed	Tools Needed
Agrarian	Land	Natural Energy	Plowing Farming Sowing	Farm Tools
Industrial	Capital	Processed Energy	Engineering Mechanics Admin. Etc.	Machines
Inform-ation	Mind	Knowledge	Computer Literacy Information Literacy Visual Literacy	Computer

Computer Literacy ?

- **An understanding of what a computer can and cannot do and the ability to make the computer do what is desired**

Information Literacy ?

- **Ability to analyze, synthesize, evaluate, assimilate and use information**

Visual Literacy ?

- **Ability to interpret, understand and appreciate visual messages; communicate by applying principles of visual design and produce visual messages using the computer and other technology.**

lesson 1

The Shapes of Computers Today

This lesson includes the following sections:

- Supercomputers
- Mainframe Computers
- Minicomputers
- Workstations
- Microcomputers, or Personal Computers

The Shapes of Computers Today
- Supercomputers

- **Supercomputers are the most powerful computers. They are used for problems requiring complex calculations.**
- **Because of their size and expense, supercomputers are relatively rare.**
- **Supercomputers are used by universities, government agencies, and large businesses.**


Cray T90 Supercomputer

The Shapes of Computers Today
- Mainframe Computers

- **Mainframe computers can support hundreds or thousands of users, handling massive amounts of input, output, and storage.**

- **Mainframe computers are used in large organizations where many users need access to shared data and programs.**

- **Mainframes are also used as e-commerce servers, handling transactions over the Internet.**

The Shapes of Computers Today - Minicomputers

- Minicomputers are smaller than mainframes but larger than microcomputers.
- Minicomputers usually have multiple terminals.
- Minicomputers may be used as network servers and Internet servers.

Minicomputer

The Shapes of Computers Today – Workstations

- **Workstations are powerful single-user computers.**
- **Workstations are used for tasks that require a great deal of number-crunching power, such as product design and computer animation.**
- **Workstations are often used as network and Internet servers.**


IBM
Aptiva
IBM

The Shapes of Computers Today – Microcomputers, or Personal Computers

- Microcomputers are more commonly known as personal computers. The term "PC" is applied to IBM-PCs or compatible computers.
- Full-size desktop computers are the most common type of PC.
- Notebook (laptop) computers are used by people who need the power of a desktop system, but also portability.
- Handheld PCs (such as PDAs) lack the power of a desktop or notebook PC, but offer features for users who need limited functions and small size.

Handheld PC

Philips Velo

Philips Velo

lesson 1 Review

- List the five most common types of computer systems.
- Identify two unique features of supercomputers.
- Describe a typical use for mainframe computers
- Differentiate workstations from personal computers.
- Identify four types of personal computers.