COMPUTING FUNDAMENTALS

Lecture No : 1

16-11-12

Computing Fundamentals

- Course Instructor:
  - Dr. Adnan Habib
- Lab Engineer:
  - Engr. Mehak Arshad
- Online Course Content:
  - CMS (Course Management System)

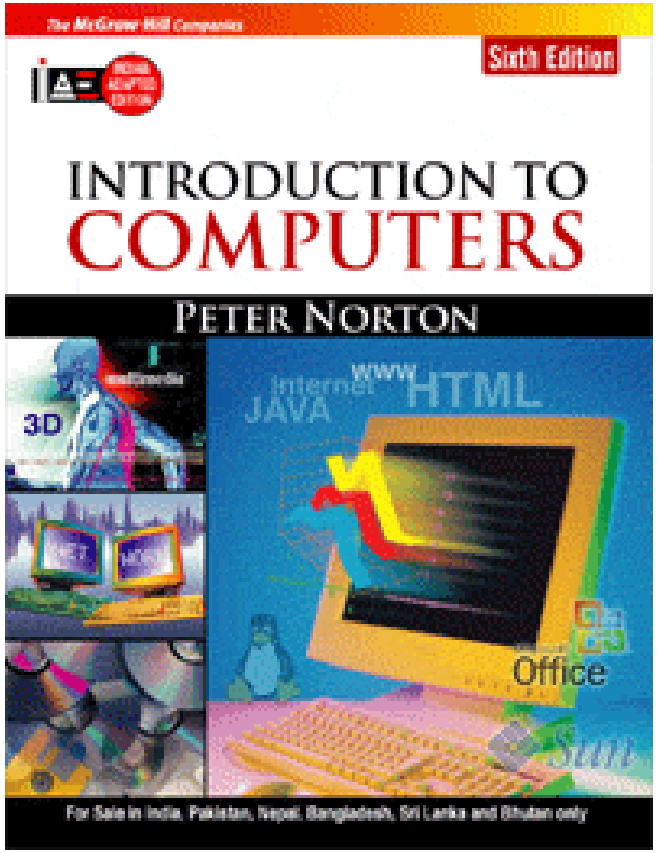
Grading Criteria

- Assignments 15
- Quizzes 10
- Lab
  - Lab Task 10
  - Project 5

- Mid Semester Exams 20
- Final Exams 40

Course Book

- Introduction to Computers
  - By: **PETER NORTON**
  - 7th Edition



Goal of the Course

- An understanding of role computation can play in solving problems.
- Get an idea of development especially web.
- Get the basic idea of Databases for the storage of records.

Course Contents

- Introduction to Computer Systems
- Processing Data
- Storing Data
- Operating Systems
- Network
- Internet
- Working with online Applications
- Working with Application Software's
- Database Management
- Software Programming

Computer Engineering

- Combination of "*Electrical Engineering*" and "*Computer Science*".

- Fields covered in this engineering are:
  - Embedded Systems
  - Databases
  - Web Development
  - Java Development
  - Networking
  - Programming Languages

What is a Computer

- A computer is an electronic device that process data, converting it into information that is useful to people.
- A computer is controlled by the programmed instructions, which give the machine a purpose and tell what to do.

What is a Computer

Computer

- It converts data into information
- Modern computers are digital
  - Two digits combine to make data
- Older computers were analog
  - A range of values made data

Computers are Everywhere

Games

Hospital

Military

Business

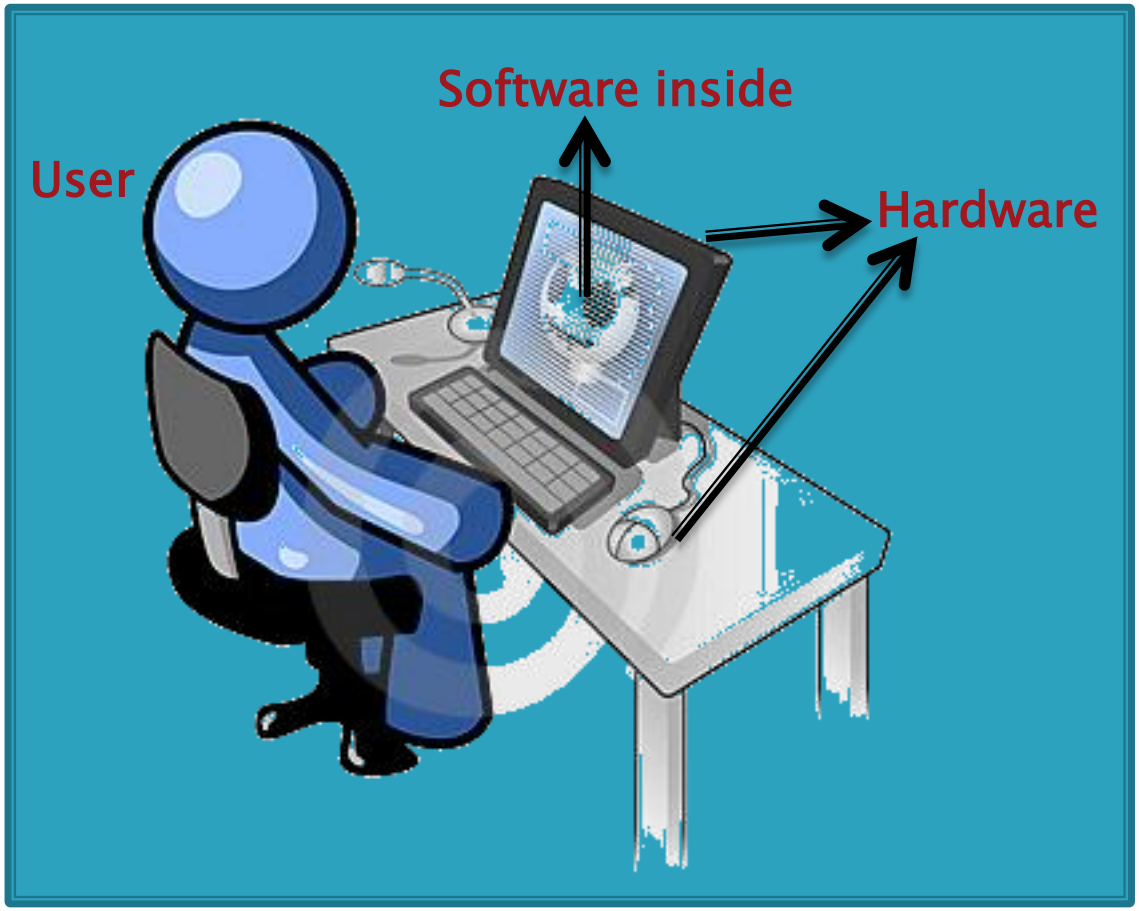
Education

Mobile

Computers in Daily Life

Parts of Computer

- Hardware
- Software
- Data
- User



Hardware

- Components that are touchable or have some physical existence
  - Input and Output devices
  - Processor
  - Memory
  - Storage devices

Keyboard

Mouse

Output Devices

Storage Devices

Processor

ROM

RAM

Software

- Set of instructions that tell a system what to do.
  - Application Software
  - System Software

Windows® 7

Microsoft®
Office

Google™

Linux™

Device Drivers are System or Application Software

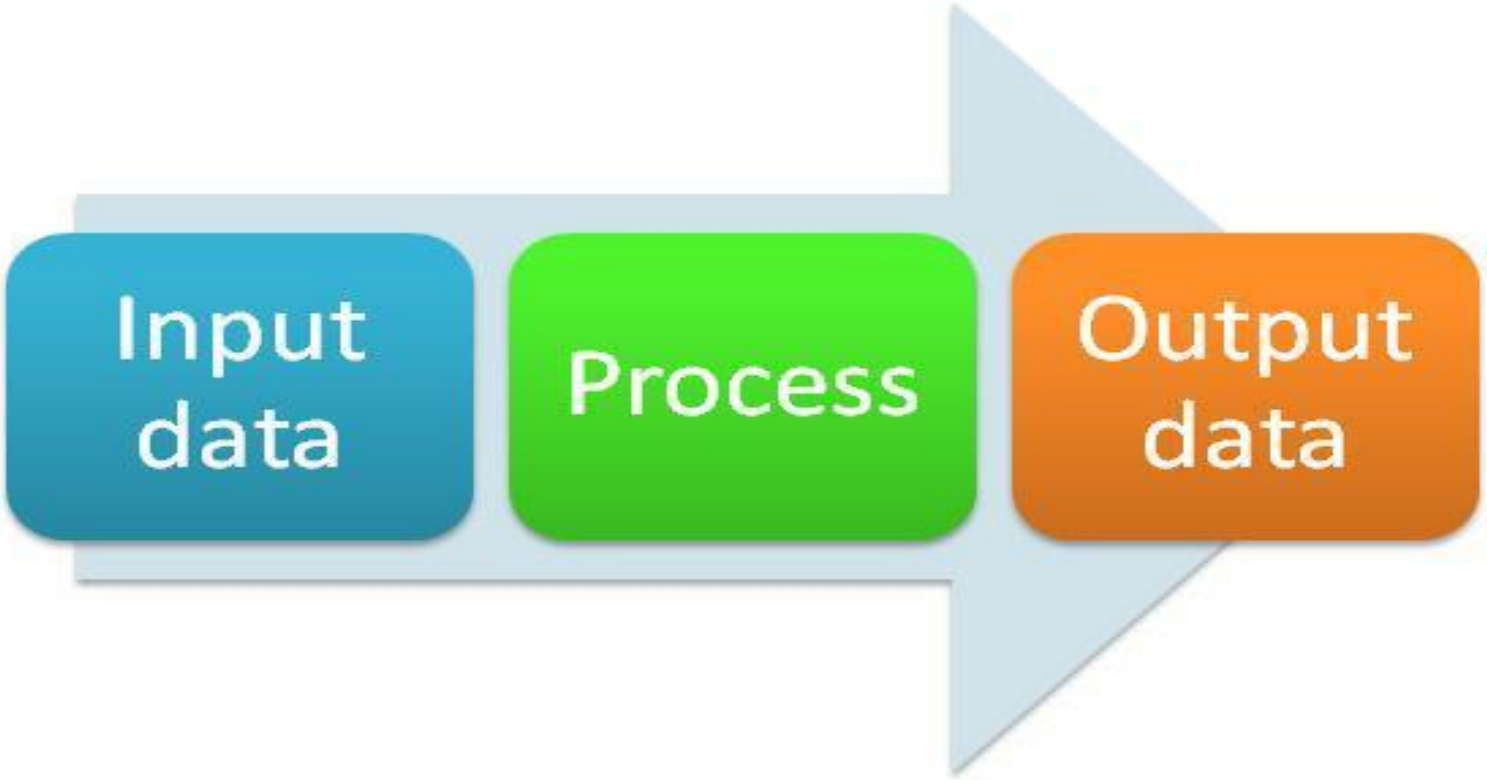
Data

- The material provided to the device for processing and produce a useful information is called “Data.”
- Basically the input part provides Data to the system.
- It can be of any type: text, voice, pointer movement etc

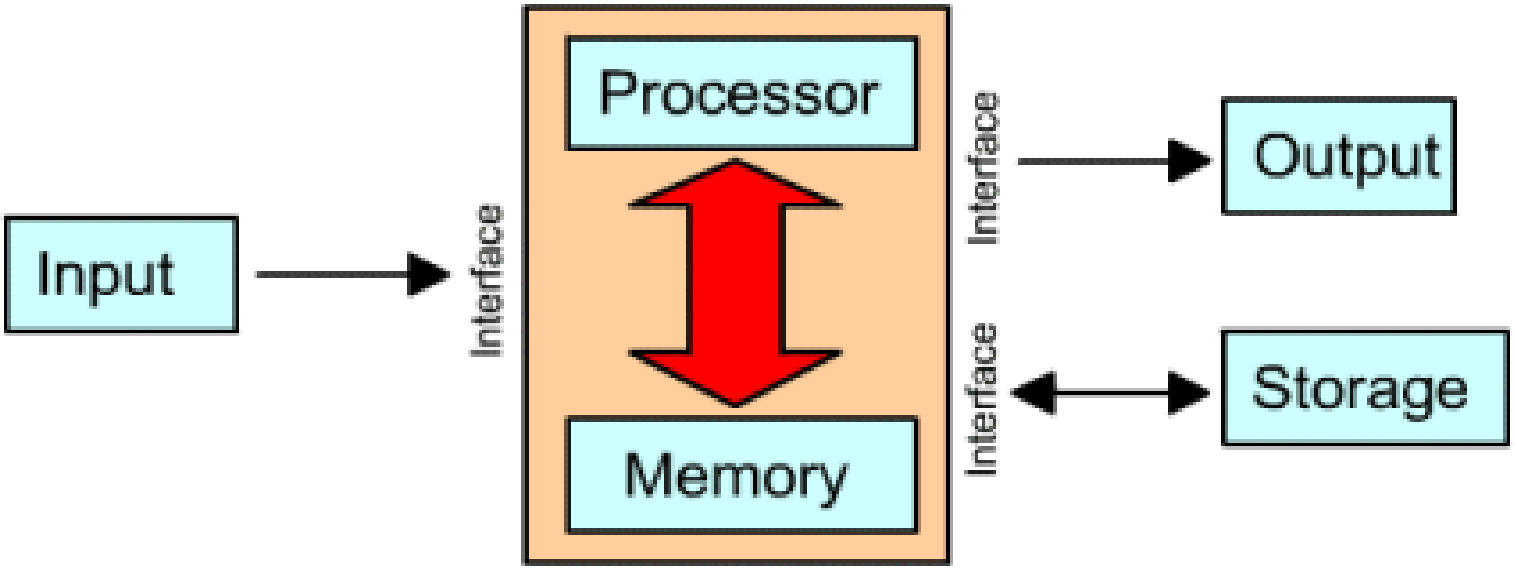
Users

- The people who interact with the system are “Users”.
- We usually instruct according to the requirement of the user, so the users are the most important factor in building a system.

Processing Cycle



Processing Cycle



Computers for Individual Users

- Desktop Computers
- Workstations
- Notebook Computers
- Tablet Computers
- Handheld Computers
- Smart Phones

Personal Computers

- Any computer system that is designed for use by a single person.
- Also known as "**Microcomputers".**
- Among the smallest computer created for people.
- Previously mentioned all systems are Personal Computers (PC).

Desktop Computers

- A PC that is designed to sit on a desk or table.
- Mostly used in school, homes and offices.
- People do their job with greater ease and efficiency but they can be used to communicate, produce music, edit photographs and videos, play games and much more.

Desktop Computers

Old Desktop Computers

Latest Desktop Computers

Workstations

- Specialized computers
- Optimized for science or graphics
- More powerful than a desktop

In 1990s

Today's

Notebook Computers

- Small portable computers
- Weighs between 3 and 8 pounds
- About 8 ½ by 11 inches
- Typically as powerful as a desktop

Notebook Computers

Tablet Computers

- Newest development in portable computers
- Input is through a pen (stylus)
- Run specialized versions of office products

Handheld Computers

- Small enough to fit on hand
- Personal Digital Assistant (PDAs)
- Used for taking notes, addresses and agendas.

Smartphones

- Some cellular phones offer advanced features that is usually not found in mobiles.
- Like Web and email access
- Special software and hardware

Why Computers are so Important

Why Computers are so Important

- They provide
  - Rapid calculations
  - Data storage
  - Worldwide communications
  - Accuracy
  - Less time consuming

Assignment # 01

- **Statement:**

  Write short note on the history of the computers from start to present?

- **Submission Date :**

  23-11-2012

- Hard Copy within the folder.

References

- http://www.stanford.edu/class/cs101/how-computers-work-hardware.html
- http://www.publishyourarticles.net/knowledge-hub/essay/an-essay-on-the-role-of-computers-in-everyday-life.html
- http://www.thegeminigeek.com/what-is-the-importance-of-computers-in-everyday-life/