CS 101 Introduction to Computing

Semester – 2014-15 / II Semester
Units – 2 – 0 – 2 – 3
Pre-requisite – None
Instructors – Sanjay Dhande, Arya Bhattacharyya, Lilian Besson, Vipin K
Tutors – Arya, Lilian, Vipin, Vivek, Kondiah
Different Types of Computers and Connectivity

- Tablets, Laptop Notebook Computers
- Personal Computers
- Workstation Computers
- Mainframe Enterprise Computers
- Supercomputers

- ETHERNET – local area networks
- Wi-Fi – Wireless area network
- Wide Area Network
Structure of a Computer

- Case
- Power Supply
- Motherboard
- Expansion Slots
- Storage devices and their controllers
- Input / Output peripherals and their controllers

- Computer Architecture
- Computer Network
Basic Elements of a Computer

- Input devices
- Control unit
- Arithmetic logic unit
- Memory
- External storage
- CPU
- Output devices
Different Input Devices

- Light Pen
- Joystick
- Microphones
- Joypad
- Gamepad
- Webcam
- Digital Camera
Different Output Devices

- Projector
- Plotter
- Headphones
- Television
- Radio
- Punched Cards
- Line Printers
- Braille Embosser
- 3-D Printer
Different External Storage Devices

- Magnetic Storage
  - Cassette Tapes
  - Floppy Disks
- Optical Storage
  - Compact Disks (CD)
  - Digital Versatile Disks (DVD)
- Solid State Storage
  - Flash Memory
- Microfilms
- Disk Enclosures
- Zip Disks
- Punched Cards
Central Processing Unit

CPU – Central Processing Unit
ALU – Arithmetic Logical Unit
Basic Arithmetic Unit
Control Unit
I/O Control Unit
Memory Devices
IC, VLSI
Random Access Memory
Read Only Memory
Managing Memory
Connection Between Memory and Processor

IR – Instruction Register
PC – Program Counter
R0 ... R (n-1)
General Purpose Registers
MAR –
Memory Address Register
MDR –
Memory Data Register
ALU
Arithmetic Logic Unit
CPU
Central Processing Unit
Bus Architecture
Concept of a Computer Program

- High Level Programming
- Source code
- Syntactical and Logical Errors
- Compilation and Execution
- Input / Output data
- Operating Systems
- Compilers
- Interpreters
Source Code Processing

• Syntactical errors in source code
• Language errors in source code
• Compilation of source
  • Generate object code using a compiler
• Execute the object code

• Translate the line using an interpreter
• Process the result immediately
Programming Languages

- Interpretive Languages
  - LISP
  - Python
- Compiling Languages
  - Fortran – 77
  - Pascal
  - C
- Object-oriented Languages
  - Java
Program Execution

- Run the program using data
  - Run time errors
  - Analysis of run time errors
- Menu-driven program
  - Menu invokes a command
  - Command gets executed
  - Program is back to wait mode
  - Data is put in a file
  - Menu-driven data creates file
Operating Systems

- Computer system software
  - DOS
- Multi-window, Multi-process
  - Windows
  - UNIX
- Coordination of all functions is carried out by the operating system
- All applications run in OS domain
Thank You!

Visit us at www.mahindraecolecentrale.edu.in

Disclaimer

Mahindra, Ecole Centrale, herein referred to as MEC provide a wide array of presentations and reports, with the contributions of various professionals. These presentations and reports are for informational purposes and private circulation only and do not constitute an offer to buy or sell any securities mentioned therein. They do not purport to be a complete description of the markets conditions or developments referred to in the material. While utmost care has been taken in preparing the above, we claim no responsibility for their accuracy. We shall not be liable for any direct or indirect losses arising from the use thereof and the viewers are requested to use the information contained herein at their own risk. These presentations and reports should not be reproduced, re-circulated, published in any media, website or otherwise, in any form or manner, in part or as a whole, without the express consent in writing of MEC or its subsidiaries. Any unauthorized use, disclosure or public dissemination of information contained herein is prohibited. Unless specifically noted, MEC is not responsible for the content of these presentations and/or the opinions of the presenters. Individual situations and local practices and standards may vary, so viewers and others utilizing information contained within a presentation are free to adopt differing standards and approaches as they see fit. You may not repackage or sell the presentation. Products and names mentioned in materials or presentations are the property of their respective owners and the mention of them does not constitute an endorsement by MEC. Information contained in a presentation hosted or promoted by MEC is provided “as is” without warranty of any kind, either expressed or implied, including any warranty of merchantability or fitness for a particular purpose. MEC assumes no liability or responsibility for the contents of a presentation or the opinions expressed by the presenters. All expressions of opinion are subject to change without notice.