PROFESSIONAL PRACTICES

IT

LECTURE 01

Course Information

- Course Code:

  CSC 110

- Course Name

  Professional Practices in IT

- Course Objective:

  The objective of the course is to make students aware of their professional responsibilities when they will work in IT sector. The course will teach students about the historical, social, ethical, economical and professional issues related to IT profession.

Course Outline

- Introduction to Information Technology (IT)
- Professionalism (in general and in the field of IT)
- Professional activities and their role in society
- Professional Ethics
- Misuse of IT and risks
- Hacking, ethical hacking
- Information Security and privacy
- Issues in Social Web (privacy, trust, influence, etc)
- plagiarism
- Intellectual property and software laws
- Social responsibilities of an IT professional

IT & Your Life: The Future Now

Definition: *Information Technology (IT) describes any technology that helps to produce, manipulate, store, communicate, and/or disseminate information*

- Part 1: Computer Technology

- Part 2: Communication Technology

How is IT being used in Education?

- 99% universities in Pakistan have internet access

- Majority of university students own their own computer

- 80% of students use the internet for 4 or more hours per week

- ½ of professors in universities require students to use email in their classes

- Distance Learning such as this is a prime example of usage of IT in education.

Health: High Tech for Wellness

- Telemedicine: Medical care via telecommunications lets doctors treat patients from far away
- 3D Computer models allow accurate tumor location inside a skull
- Robots permit precise microsurgery
- Handheld computers allow patients to measure blood sugar
- Medical implants allow stroke patients to directly control computers to talk for them
- Health websites provide medical information

Money: Cashless Society?

- Definition: _Virtual_ means something that is created, simulated, or carried on by means of a computer or a computer network

- Virtual airline tickets

- Virtual money
  - Online bill paying
  - PayPal
  - Electronic payroll deposit
  - Micropayments for online music

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Leisure: Infotech in Entertainment & the Arts

- Videogames
- Downloading
  - Movies
  - Music
  - ebooks
- Most movies use computer animation
- Digital editing

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Jobs & Careers

- Office careers: Budget, payroll, letter-writing, email
- Teaching: Automated grading systems, emailing, distance teaching
- Fashion: Sales/inventory control systems, ordering, personnel
- Job-hunting:
  - Use word processor to create resumes
  - Post resumes online
  - Online job searches

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Jobs & Careers

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Question: Can anyone think of a career that does NOT require computer skills?

The Telephone Grows Up

- 1973: First cellphone call
- 2006: Nokia estimates 2 billion mobile phone subscribers
- Today's cellphones:
  - Are mobile
  - Can take and send pictures
  - Can connect to the internet
  - Can send and receive text messages

Internet, World Wide Web, & Cyberspace

- ## World Wide Web
  - The multimedia part of the internet
  - An interconnected system of servers that support specially formatted documents in multimedia form
  - Includes text, still images, moving images, sound
  - Responsible for the growth and popularity of the internet

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Internet, World Wide Web, & Cyberspace

- Cyberspace
  - Term coined by William Gibson in *Neuromancer* (1984)
  - Described a futuristic computer network people "plugged" into directly with their brains
  - Now means
    - The web
    - Chat rooms
    - Online diaries (blogs)
    - The wired and wireless communications world

5 Computer Types

- **Supercomputers**
  - Priced from $1 million to $350 million
  - High-capacity machines with thousands of processors
  - Multi-user systems
  - To learn more about one, go to
    http://www.llnl.gov/asci/platforms/bluegenel/
- **Mainframe Computers**
- **Workstations**
- **Microcomputers**
- **Microcontrollers**

5 Computer Types

- Supercomputers
- Mainframe Computers
    - Until late 1960's, the only computer available
    - Cost $5,000 - $5 million
    - Multi-user systems; accessed using a terminal
    - Terminals only have a keyboard and monitor; can't be used alone
    - To see one, go to
        http://www-03.ibm.com/servers/eserver/zseries/
- Workstations
- Microcomputers
- Microcontrollers

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5 Computer Types

- Supercomputers
- Mainframe Computers
- Workstations
  - Introduced in early 1980s
  - Expensive, powerful personal computers
  - Used for scientific, mathematical, engineering, computer-aided design (CAD), computer-aided manufacturing (CAM)
  - A less-expensive alternative to mainframes
  - To see some examples with current pricing, go to
        http://www.mce.com
- Microcomputers
- Microcontrollers

5 Computer Types

- Supercomputers
- Mainframe Computers
- Workstations
- Microcomputers
  - Personal computers that cost Rs. 20,000 to Rs. 200,000
  - Used either stand-alone or in a network
  - Types include: desktop, tower, notebooks, or Personal Digital Assistants (PDAs)
- Microcontrollers

5 Computer Types

- Supercomputers
- Mainframe Computers
- Workstations
- Microcomputers
- Microcontrollers
  - Also called embedded computers
  - Tiny, specialized microprocessors inside appliances and automobiles
  - They are in: microwaves, programmable ovens, blood-pressure monitors, air bag sensors, vibration sensors, MP3 players, digital cameras, e-pliances, keyboards, car engine controllers, etc.

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*Question: **Now**, how many of you would say you have NOT used a computer today?*

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Servers

- Are central computers
- May be any of the 4 larger computer types.
- "Server" describes a function
  - Hold data (databases) and programs
  - Connect to and supply services for clients
  - Clients are other computers like PCs, workstations, other devices

Convergence, Portability, & Personalization

- **Convergence: the combination of**
  - Computers
  - Consumer electronics
  - Entertainment
  - Mass media
- **Portability**
- **Collaboration: software that allows**
  - People to share anything instantly
  - People to enhance the information as they forward it

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Future of Information Technology

- **3 directions of Computer Development**
  - Miniaturization
  - Speed
  - Affordability
- **3 directions of Communications Development**
  - Connectivity
  - Interactivity
  - Multimedia

Summary

- What is IT

- Usage of IT in different walks of life

- Medium and technologies used in IT

- Types of computers

- Future of IT