Course Description (Continued.)

- Contents:
  - The role of managers in Information Technology (IT) (3 sessions)
  - Organizational Issues (3 sessions)
  - Information Technology (9 sessions)
  - Operational and enterprises systems (4 sessions)
  - Exciting directions in systems (3 sessions)
  - E-Business and E-Commerce (3 sessions)
  - Issues for senior management (2 sessions)
Course Description (Continued..)

- Contents:
  - Information Technology (9 sessions)
    - Fundamentals
      - The components of a personal computer
    - Software
      - Managerial concerns
      - The Contribution of Higher-Level languages
      - The Web Browser and Internet standards
      - The operating system
    - Database management
      - File elements
      - Enter database management software
      - Database in systems design
      - Data Warehouses, Data Marts, and Data Centers
      - Enterprise Content Management

The role of managers in Information Technology (IT)
Information Technology

- The today’s computers
  - The first computers developed were mainframes, which are large general-purpose machines.
  - Today this type of machine is likely to support a number of terminals and personal computers interacting with huge databases containing billions of characters of data.
  - Mainframe computers are used extensively to process transactions and maintain vital data for access by various users.

- Today many mainframe applications are called "legacy systems."
  - These systems represent a heavy investment; they process critical transactions, and they are difficult to change.
  - These mainframe systems are capable of processing a huge volume of transactions given very high speed data channels.
Information Technology

- The today’s computers
  - Organizations using mainframe computers generally process large amounts of data.
  - The computers may access databases with billions of characters of data and control networks of hundreds or thousands of terminals.
  - The computers need to be able to handle extensive telecommunications activities and input-output operations.

Information Technology

- The today’s computers
  - Scientists and engineers have computationally intensive problems to solve, often involving numbers with many digits of significance.
  - Examples include the
    - Simulation of airflow over an aircraft,
    - Weather forecasting simulations,
    - Analysis of geological data, and even
    - Predictions about the speed of a sailboat designed for the Americas Cup competition.
The today’s computers

Supercomputers are among the fastest computers today, with speeds measured in hundreds of megaflops (a megaflop is the execution of 1 million floating-point instructions per second) to more than a gigaflop (1 billion floating-point instructions per second).

Machines have achieved teraflop speeds, executing over 1 trillion instructions per second.

Information Technology

The today’s computers

Minicomputers evolved as manufacturers increased processing speeds and expanded word sizes to 32 bits.

Companies use this midrange computer for a variety of processing tasks, some of which are similar to what a mainframe did a decade ago.

Next came the PC or personal computer, which was first designed as an 8-bit computer.

Workstations use high-performance 32-bit computers for engineering and scientific work. The workstation features superior graphics and is often used for design tasks.
Information Technology

- The today’s computers
  - In the client-server model of computing, a user’s client PC makes requests of a server computer that has data and possibly programs on it.

  - The server is responsible for the database and is likely to execute transactions to update and manage it.

  - One Compaq server containing four Pentium processors has been clocked at 600 transactions per second with standard database software compared to 200 transactions per second for some midrange computers.

Information Technology

- The today’s computers
  - The PDA or personal digital assistant began as super calculators able to store a user’s calendar and phone book.

  - Today these devices often weigh less than a pound and some offer handwriting and voice recognition, fax and modem communications, and even a pager.

  - A sales representative might use a small PDA that has information on contracts. A longshoreman uses a PDA that has a bar-code reader and scanner to record the location of containers.
The role of managers in Information Technology (IT)

- HW
  - Simon Marshall Associates
  - Try to answer the questions in the case study based on our described context in this session

- The Home work should be sent to FValilai@sharif.edu

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