Faculty of Computers and Information
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Modeling and Simulation

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Artificial Intelligence

- **There are several programming languages that are known as AI languages because they are used almost for AI applications.**
- **The two most common are LISP and Prolog.**

System Development Life Cycle

System development

- **The activity of creating or modifying an existing business system**

System Development Life Cycle (SDLS)

- **The SDLC includes five steps**
  - **System planning**
  - **System analysis**
  - **System design**
  - **System implementation**
  - **System maintenance and review**

System Development Life Cycle

System Planning

- System Planning is the first phase of SDLC.
- During the planning phase, the objective of the project is determined and the requirements of the system are considered.

System Development Life Cycle

System Planning

- Meeting with managers or stake holders are held to determine the exact requirements of the project.
- An estimate of resources, such as personnel and costs, is prepared, to either bring changes in the current system or develop a new system.

System Development Life Cycle

System investigation and analysis

- **Defines the problems and opportunities of an existing system**

System Development Life Cycle

System design

- **Determine how a new system will work to meet business needs**

System implementation

- **Creating and acquiring system components defined in the design**

System Development Life Cycle

System maintenance and review

- **Checks and modifies the system so that it continues to meet changing business needs**

What is information security?

Information security sometimes shortened to InfoSec, is the practice of defending Information from unauthorized access, use, disruption, modification, inspection, recording or destruction.

What is information security?

It is a general term that can be used regardless of the form the data may take (electronic, physical, etc...).

What is information security?

information security covers all aspects of computer security. It covers protection against viruses hackers, password and access control policies as well as procedures for the regular backing up of your data (to guard against computer failure).

Introduction

- **Companies use information as a weapon in the battle to increase productivity, deliver quality products and services, maintain customer loyalty, and make sound decisions**
- **Information technology can mean the difference between success and failure**

The Impact of Information Technology

- **Information Technology (IT)**
  - **Combination of hardware and software products and services that companies use to manage, access, communicate, and share information**
- **The Future**
  - **Three issues that will shape the future**
    - **Changes in world**
    - **Changes in technology**
    - **Changes in client demand**

The Impact of Information Technology

- **System Development**
  - **Business information systems are developed by people who are technically qualified, business-oriented, and highly motivated**
  - **Must be good communicators with strong analytical and critical thinking skills**

The Impact of Information Technology

- **System Analysis and Design**
  - **System Analysis and Design**
    - **Step-by-step process for developing high-quality information systems**
  - **System Analyst**
    - **Plan, develop, and maintain information systems**

Business Information Systems

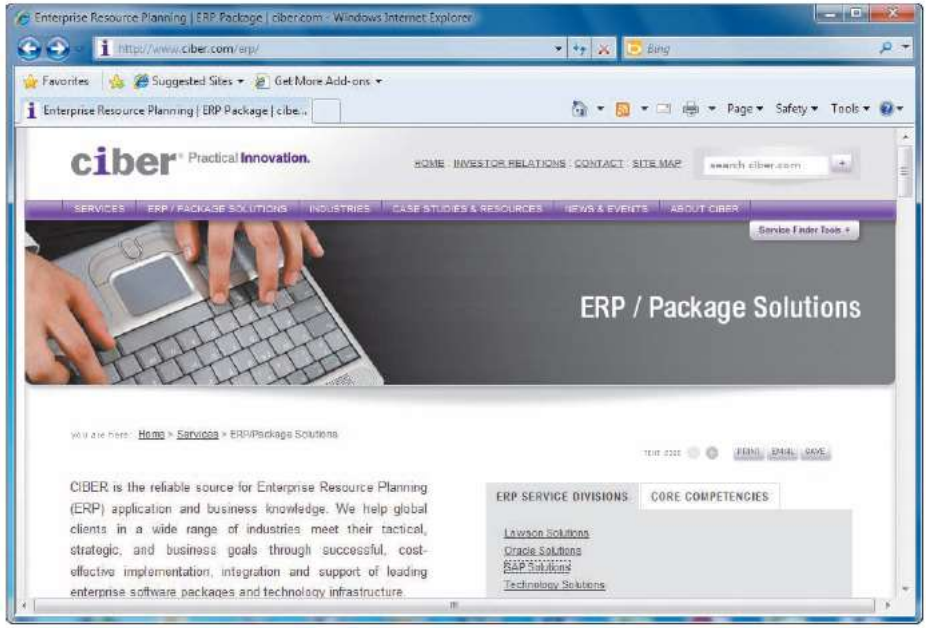
- **In the past, IT managers divided systems into categories based on the user group the system served**
  - **Office systems**
  - **Operational systems**
  - **Decision support systems**
  - **Executive information systems**

Business Information Systems

- **Today, identify a system by its functions and features, rather than by its users**
  - **Enterprise computing systems**
  - **Transaction processing systems**
  - **Business support systems**
  - **Knowledge management systems**
  - **User productivity systems**

Business Information Systems

- **Enterprise computing systems**
  - **Support company-wide operations and data management requirements**
  - **Enterprise resource planning (ERP)**
  - **Many hardware and software vendors target the enterprise computing market**



Business Information Systems

- **Business support systems**
  - **Provide job-related information to users at all levels of a company**
  - **Management information systems (MIS)**
  - **Radio frequency identification (RFID)**

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Business Information Systems

- **User productivity systems**
  - **Technology that improves productivity**
  - **Groupware**
- **Information systems integration**
  - **Most large companies require systems that combine transaction processing, business support, knowledge management, and user productivity features**

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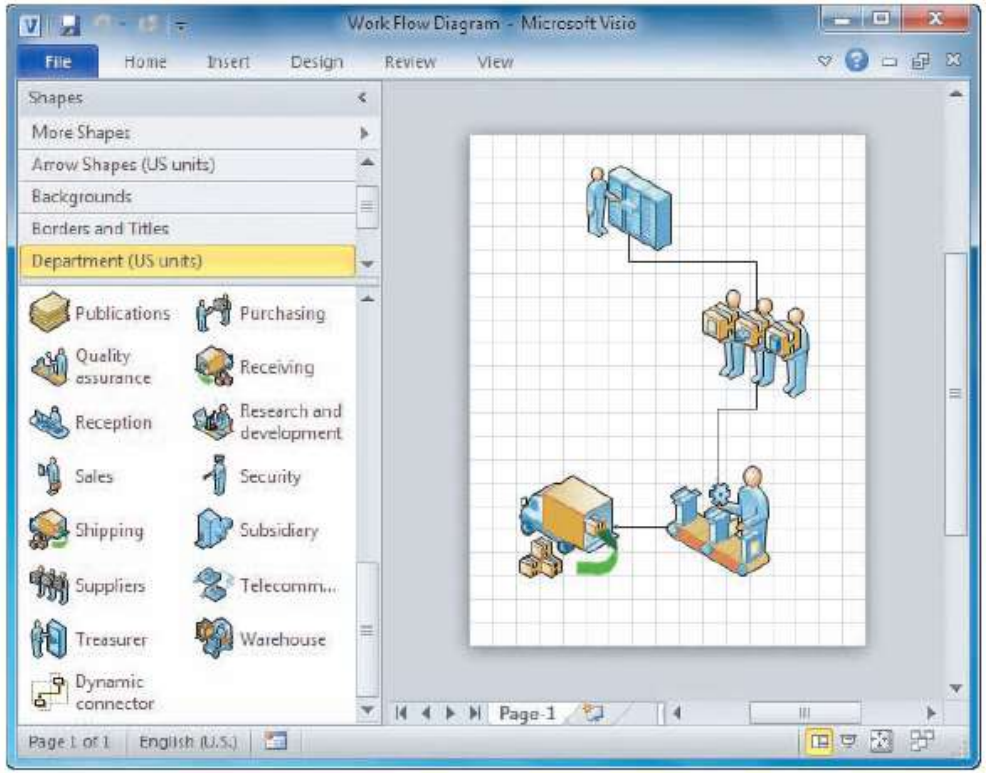
Systems Development Tools

- **Modeling**
  - **Business model**
  - **Requirements model**
  - **Data model**
  - **Object model**
  - **Network model**
  - **Process model**



Systems Development Tools

- **Prototyping**
  - **Prototype**
  - **Speeds up the development process significantly**
  - **Important decisions might be made too early, before business or IT issues are thoroughly understood**
  - **Can be an extremely valuable tool**

Systems Development Tools

- **Computer-Aided Systems Engineering (CASE) Tools**
  - **Also called computer-aided software engineering**
  - **Can generate program code, which speeds the implementation process**

Important Notes

- **IT refers to the combination of hardware and software resources that companies use to manage, access, communicate, and share information**
- **The essential components of an information system are hardware, software, data, processes, and people**
- **Successful companies offer a mix of products, technical and financial services, consulting, and customer support**

Important Notes

- **Information systems are identified as enterprise computing systems, transaction processing systems, business support systems, knowledge management systems, or user productivity systems**
- **Organization structure includes top managers, middle managers and knowledge workers, supervisors and team leaders**

Important Notes

- **The IT department develops, maintains and operates a company's information systems**
- **Systems analysts need a combination of technical and business knowledge, analytical ability, and communication skills**
- **Systems analysts need to consider salary, location, and future growth potential when making a career decision**

Questions

Q1: _____is an AI language.

a) Cobol

b) C#

c) Java

d) Lisp

Questions

Q2:

System _____is the activity of creating or modifying an existing business system.

a) design

b) control

c) development

d) None of these

Questions

Q3: During the _____phase, the objective of the project is determined and the requirements of the system are considered.

a) design

b) test

c) implementation

d) planning

Questions

Q4: During planning phase, an estimate of resources, such as personnel and _____is prepared.

a) design

b) implementation

c) costs

d) None of these

Questions

Q5: System _____defines the problems and opportunities of an existing system.

a) analysis

b) design

c) performance

d) control

Questions

Q6: Information _____ covers protection against viruses and hackers, password and access control policies .

a) security

b) management

c) measurement

d) None of these

Questions

Q7: System _____checks and modifies the system so that it continues to meet changing business needs.

a) design

b) analysis

c) maintenance

d) implementation

Questions

Q8: System _____ creating and acquiring system components defined in the design.

a) design

b) analysis

c) maintenance

d) implementation

Questions

Q9: System _____determines how a new system will work to meet business needs.

a) design

b) analysis

c) maintenance

d) implementation