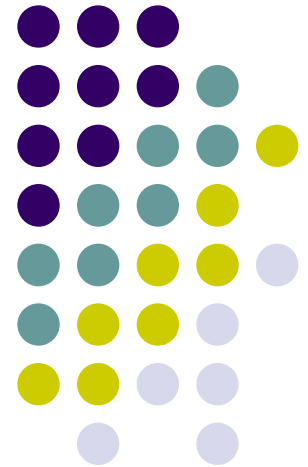
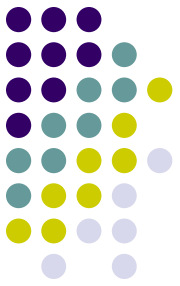


UNIT-2.2

Organizational Style and Its Impact on Information Systems

Systems Analysis and Design
Kendall and Kendall
Fifth Edition





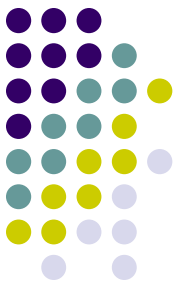
Major Topics

- Organizational environment
- Nature of systems
- Context-level data flow diagram
- Entity-relationship diagram
- Levels of management
- Organizational culture



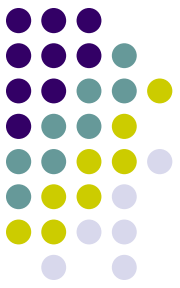
Organizations

- Organizations are composed of interrelated and interdependent subsystems
- System and subsystem boundaries and environments impact on information system analysis and design



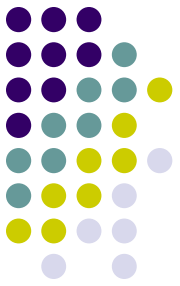
Organizational Environment

- Community environment
 - Geographical
 - Demographics (education, income)
- Economic environment
 - Market factors
 - Competition
- Political environment
 - State and local government



Open and Closed Systems

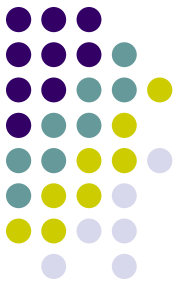
- Systems are described as either
 - Open
 - Free-flowing information
 - Output from one system becomes input to another
 - Closed with restricted access to information
 - Limited by numerous rules
 - Information on a need to know basis



Virtual Organizations

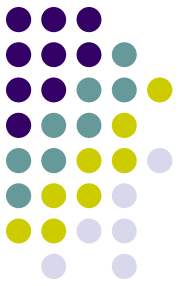
- A virtual organization has parts of the organization in different physical locations
- Computer networks and communications technology are used to work on projects

Virtual Organization Advantages



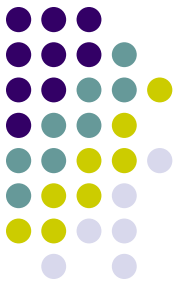
- Advantages of a virtual organization are
 - Reduced costs of physical facilities
 - More rapid response to customer needs
 - Flexibility for employees to care for children or aging parents

Enterprise Resource Planning

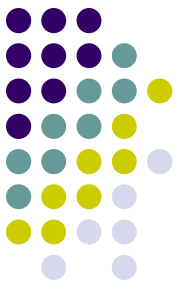


- Enterprise Resource Planning (ERP) describes an integrated organizational information system
- The software helps the flow of information between the functional areas within the organization

Context-Level Data Flow Diagram (DFD)

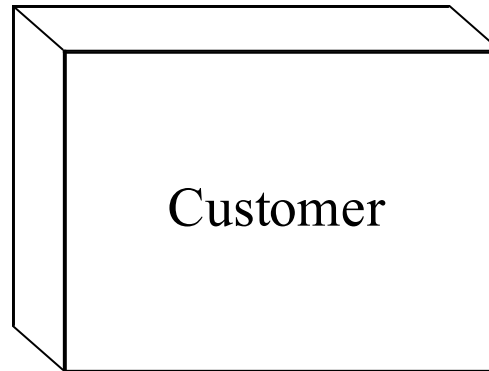


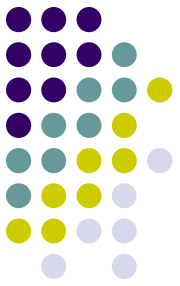
- A context-level data flow diagram is an important tool for showing data used and information produced by a system
- It provides an overview of the setting or environment of the system exists within: which entities supply and receive data/information



Context-Level DFD Symbols

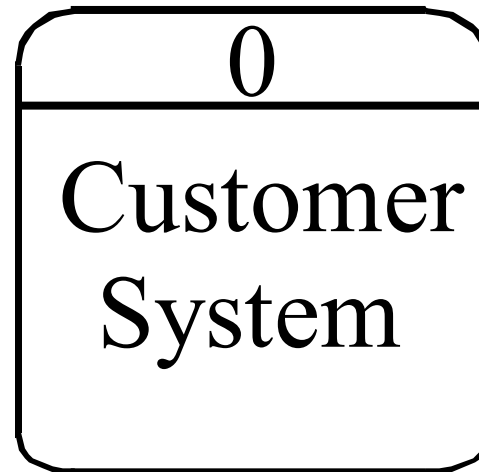
- Entity, a person, group, department, or system that supplies or receives information
- It is labeled with a noun

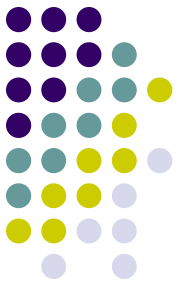




Context-Level DFD Symbols

- Process, representing the entire system
- It is given the number 0





Context-Level DFD Symbols

- Data flow, represented by an arrow
- It shows information that passes to or from the process
- Data flow is labeled with a noun

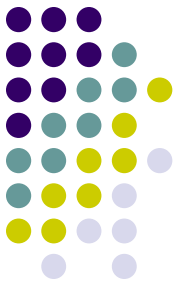


Travel Request

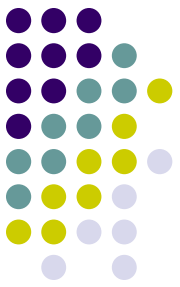


Passenger Reservation

Entity-Relationship Diagrams (E-R Diagrams)

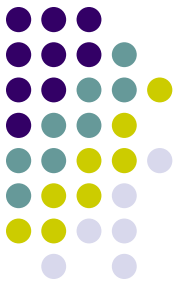


- Entity-relationship diagrams help the analyst in understanding the organizational system and the data stored by the organization
- Symbols are used to represent entities and relationships



Entities

- There are three types of entities:
 - Fundamental entity, describing a person, place, or thing
 - Associative entity, linking entities
 - Attributive entity, to describe attributes and repeating groups

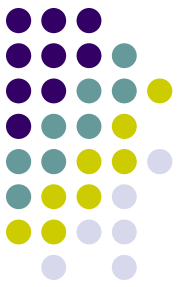


Fundamental Entity

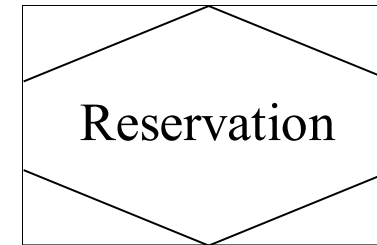
- Describes a person, place, or thing
- Symbol is a rectangle



Associative Entity

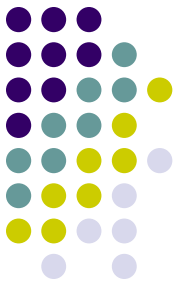


- Joins two entities
- Can only exist between two entities
- Symbol is a diamond inside a rectangle
- Also called a
 - Gerund
 - Junction
 - Intersection
 - Concatenated entity



The ***talking*** children angered the teacher. (Here *talking* modifies children.)

Annoyed, Rita ate dinner by herself in the bedroom. (Here *annoyed* modifies Rita.)



Attributive Entity

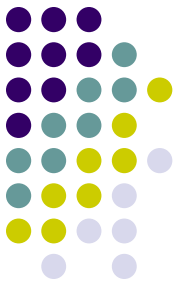
- Describes attributes and repeating groups
- Symbol is an oval in a rectangle





Relationships

- Relationships show how the entities are connected
- There are three types of relationships:
 - One to one
 - One to many
 - Many to many
- Relationship lines are labeled

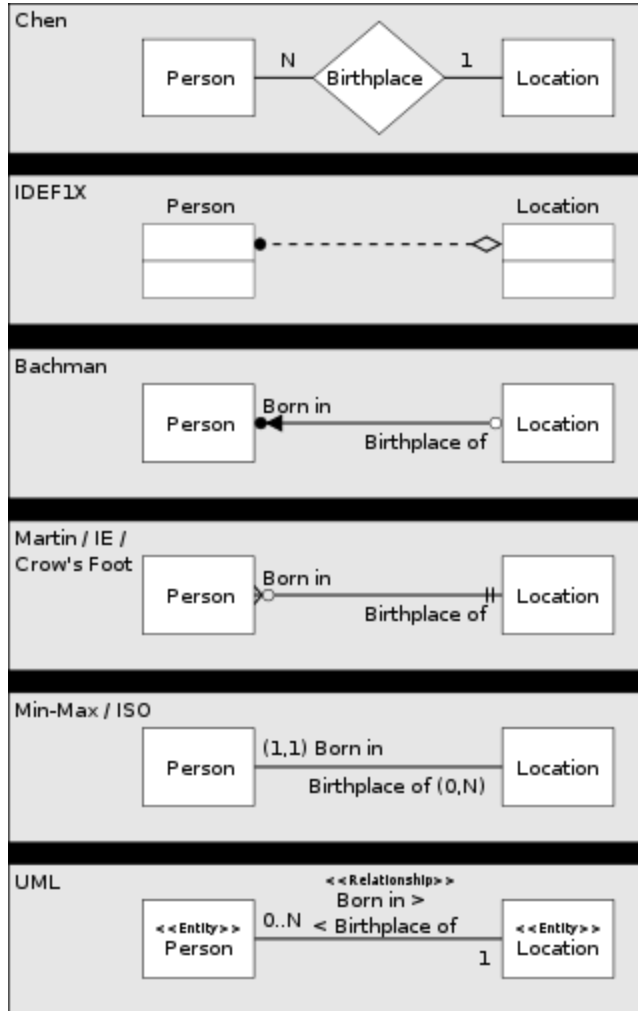
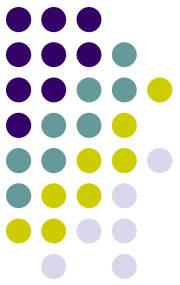


Relationship Notation

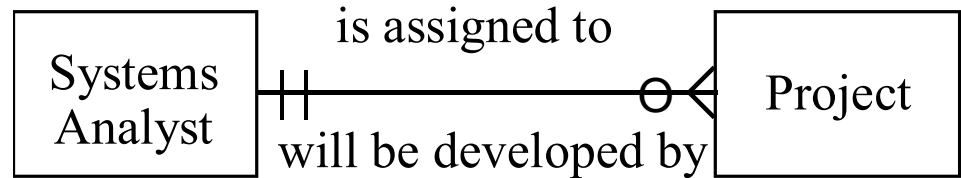
- One is indicated by a short vertical line
- Many is indicated by a crows foot

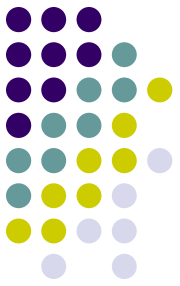


Entity Relationship Example



Two related entities shown using Crow's Foot notation





Attributes

- Data attributes may be added to the diagram

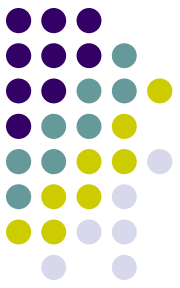


Patron Name
Patron address
Patron phone
Patron credit card

Creating Entity-Relationship Diagrams

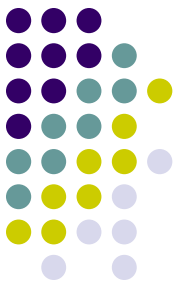


- Steps used to create E-R diagrams
 - List the entities in the organization
 - Choose key entities to narrow down the scope of the problem
 - Identify what the primary entity should be
 - Confirm the results of the above through data gathering



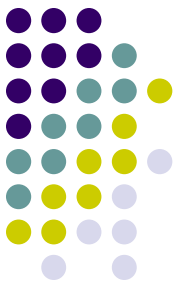
Managerial Control

- The three levels of managerial control are
 - Operations management
 - Make decisions using predetermined rules
 - Middle management
 - Strategic management



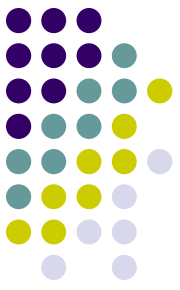
Operations Management

- Make decisions using predetermined rules that have predictable outcomes
- Work is clear-cut
- High degree of certainty in decision making
- Oversee the operating details of the organization
- Dependent on internal information



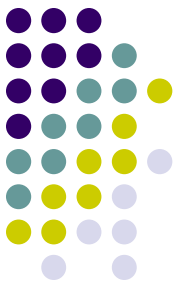
Middle Management

- Make short-term planning and control decisions about resources and organizational objectives
- Experience very little certainty in their decision making
- Partly operational and partly strategic
- Dependent on internal information, both historical and prediction oriented



Strategic Management

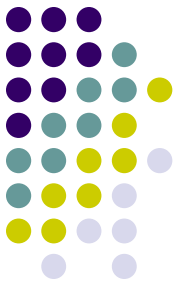
- Look outward from the organization to the future
- Make decisions that will guide middle and operations managers
- Work in highly uncertain decision-making environment
- Define the organization as a whole
- Dependent on external information



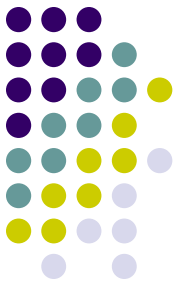
Managerial Levels

- Each of the three levels of management have
 - Different organization structure
 - Leadership style
 - Technological considerations
 - Organization culture
 - Human interaction
 - All carry implications for the analysis and design of information systems

Organizational Culture

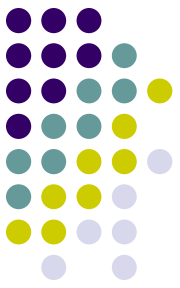


- Organizations have cultures and subcultures
- Learn from verbal and nonverbal symbolism



Verbal Symbolism

- Using language to convey
 - Myths
 - Metaphors
 - Visions
 - Humor



Nonverbal Symbolism

- Shared artifacts
 - Trophies, etc.
- Rites and rituals
 - Promotions
 - Birthdays, etc.
- Clothing worn
- Office placement and decorations