MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
Sharif University of Technology

Session #14

Course Description

- Instructor
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- Class time
  - Saturday-Monday 10:30~12:00

- Course evaluation
  - Mid-term (20%)
  - Final exam (20%)
  - Quiz (10%)
  - Exercise-Projects (30%)
Course Description (Continued ...)

- **Mid-term session:**
  - Saturday, 7th, Azar 1394
- **Final session:**
  - Monday, 28th, Dey 1394
- **Reference:**

Course Description (Continued ...)

- **Reference:**
  - William S. Davis, David C. Yen, “The information system consultant’s handbook: system analysis and design”, 2010, Taylor and Francis
  - Gabriele Piccoli; “Information systems for managers: texts & cases “, 2007, John Wiley & Sons Inc
Course Description (Continued..)

- Contents:
  - Introduction to Systems Analysis and Design
  - Analyzing the Business Case
  - Managing Systems Projects
  - Requirements Modeling
  - Data and Process Modeling
  - Object Modeling
  - Development Strategies
  - User Interface Design
  - Data Design
  - System Architecture
  - Managing Systems Implementation

Course Description (Continued..)

- Contents:
  - Object Modeling
    - Relationships Among Objects and Classes
    - Object Modeling with the Unified Modeling Language
    - Organizing the Object Model
Object Modeling

- **Object Modeling with the Unified Modeling Language**
  - O-O methodology is popular because it integrates easily with object-oriented programming languages
  - Programmers also like O-O code because it is modular, reusable, and easy to maintain.
  - Object-oriented (O-O) analysis describes an information system by identifying things called objects.
    * An object represents a real person, place, event, or transaction.
    * Object-oriented analysis is a popular approach that sees a system from the viewpoint of the objects themselves as they function and interact.
  - The end product of object-oriented analysis is an object model, which represents the information system in terms of objects and object-oriented concepts.

Object Modeling

- **Object Modeling with the Unified Modeling Language**
  - Object-Oriented Terms and Concepts
    - The Unified Modeling Language (UML) is a widely used method of visualizing and documenting an information system.
    - An object has certain attributes, which are characteristics that describe the object.
    - An object also has methods, which are tasks or functions that the object performs when it receives a message, or command, to do so.
    - A class is a group of similar objects.
      * An instance is a specific member of a class.
Object Modeling

* Object Modeling with the Unified Modeling Language

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Object Modeling

* Object Modeling with the Unified Modeling Language
Object Modeling

- Object Modeling with the Unified Modeling Language
- Object-Oriented Terms and Concepts
  - Principles of OO

Three terms most frequently cited are:
- Inheritance,
- Encapsulation and
- Polymorphism
Object Modeling

- Object Modeling with the Unified Modeling Language
Object Modeling

- Object Modeling with the Unified Modeling Language
  - Object-Oriented Terms and Concepts

  - The Unified Modeling Language (UML) is a widely used method of visualizing and documenting an information system.

  - An object has certain attributes, which are characteristics that describe the object.

  - An object also has methods, which are tasks or functions that the object performs when it receives a message, or command, to do so.

  - A class is a group of similar objects.
    - An instance is a specific member of a class.
Object Modeling

* Object Modeling with the Unified Modeling Language

- Class: EMPLOYEE
  - Attributes: Name, Date of birth, Social Security number, Telephone number, Hire date, Title, Pay rate, Status
  - Methods: Get hired, Terminate, Change telephone, Change address

- Subclass: MANAGER
  - Attributes
  - Methods

- Subclass: OFFICE STAFF
  - Attributes
  - Methods

- Subclass: INSTRUCTOR
  - Attributes: Instructor type, Availability
  - Methods: Teach fitness-class

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