MIS
(Management Information System)
(21-972)

Department of Industrial Engineering
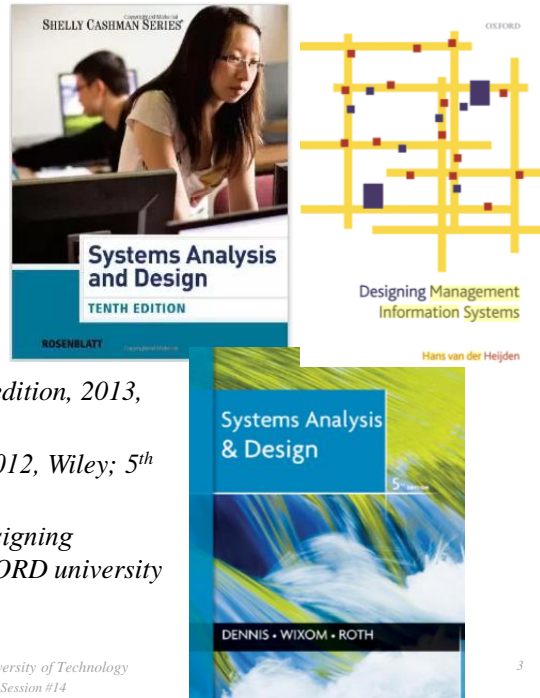
Sharif University of Technology

Session #14

Course Description

- *Instructor*
  - *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
  - *Email: Fvalilai@sharif.edu , Tel: 021-6616-5706*
  - *Website: http://sharif.edu/~fvalilai*
- *Class time*
  - *Saturday-Monday   10:30~12:00*
- *Course evaluation*
  - *Mid-term   (20%)*
  - *Final exam   (20%)*
  - *Quiz   (10%)*
  - *Exercise-Projects   (30%)*

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Course Description *(Continued …)*

- *Mid-term session:*
  - *Saturday, 7th, Azar 1394*
- *Final session:*
  - *Monday, 28th, Dey 1394*
- *Reference:*
  - *Rosenbalt, "System Analysis and Design", 10th edition, 2013, Course Technology*
  - *Dennis, Lan; "Systems Analysis and Design", 2012, Wiley; 5th edition*
  - *Johannes Govardus Maria van der Heijde; "Designing Management Information Systems", 2009, OXFORD university press*
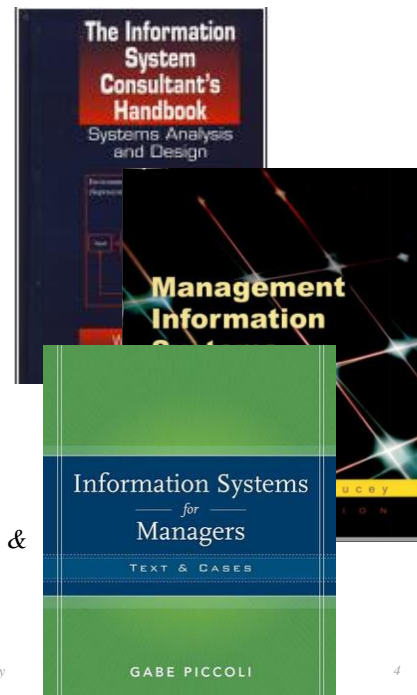
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MIS (Management Information System), Session #14

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Course Description *(Continued …)*

- *Reference:*
  - *William S. Davis, David C. Yen, "The information system consultant's handbook: system analysis and design", 2010, Taylor and Francis*
  - *Terence Lucey; "Management Information Systems", 2004, Cengage Learning EMEA*
  - *Gabriele Piccoli; "Information systems for managers: texts & cases ", 2007, John Wiley & Sons Inc*

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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*

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Course Description (Continued..)

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

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MIS (Management Information System), Session #1

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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.*

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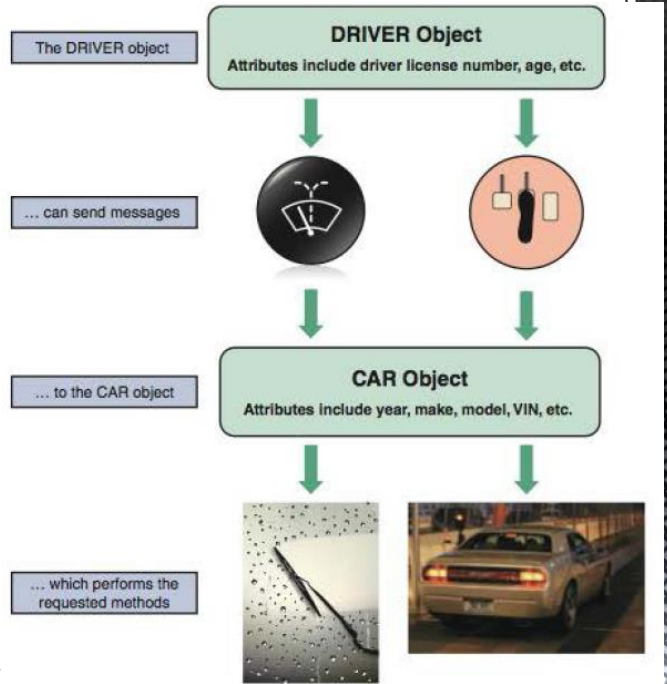*MIS (Management Information System), Session #14*

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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.*

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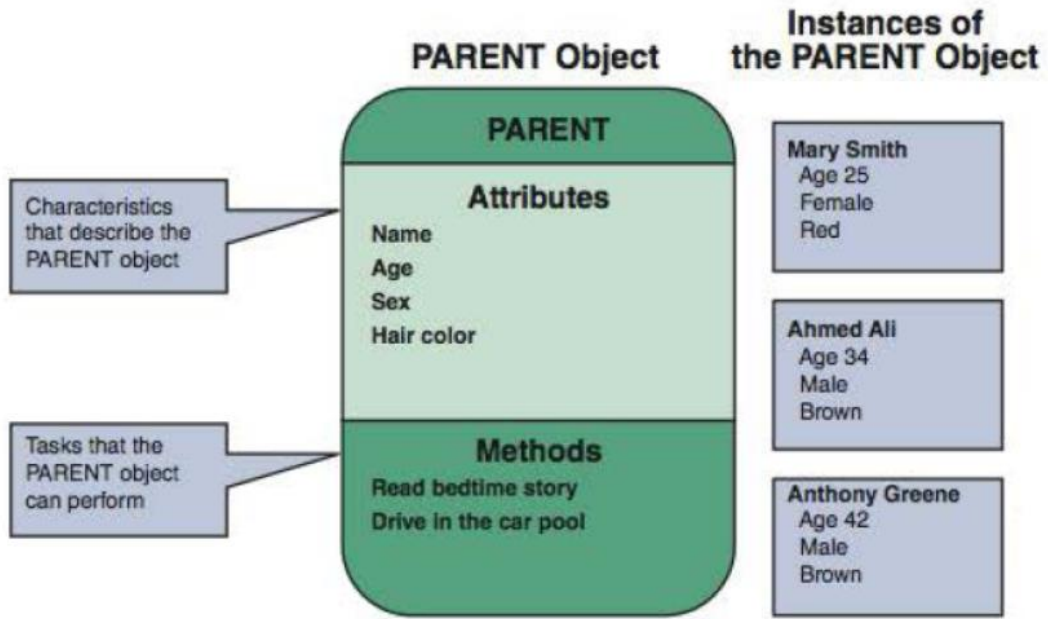*MIS (Management Information System), Session #14*

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Object Modeling

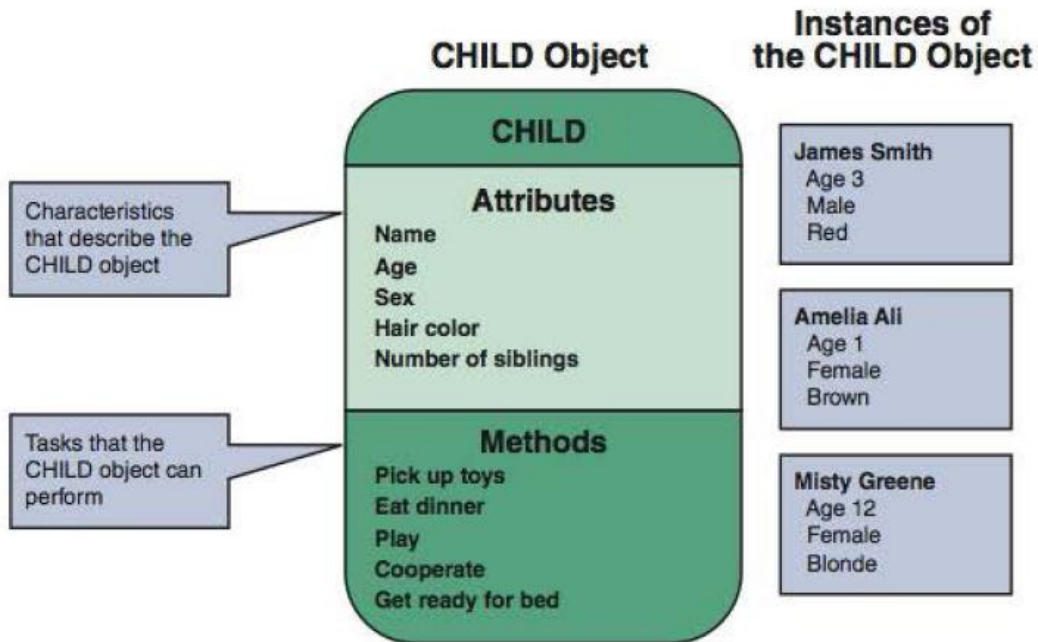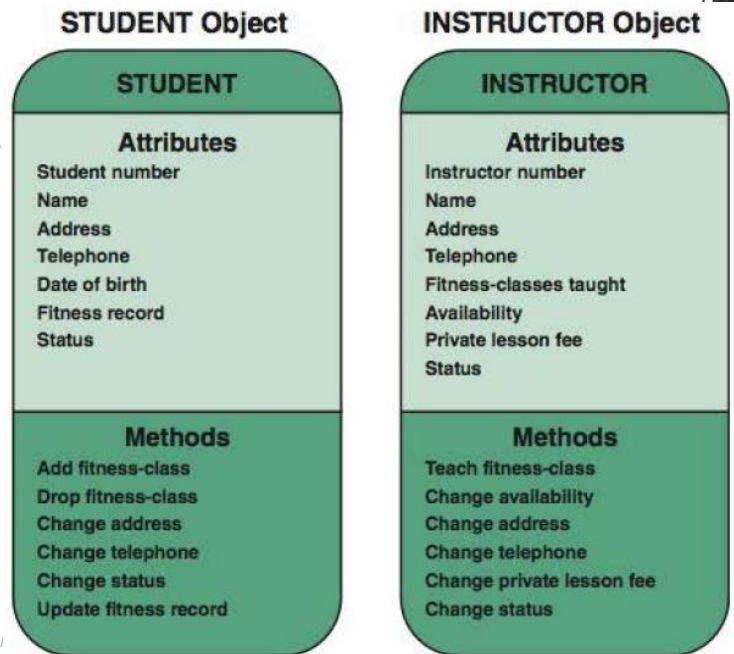- *Object Modeling with the Unified Modeling Language*

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CHILD Object

CHILD

Attributes

Characteristics that describe the CHILD object

Name
Age
Sex
Hair color
Number of siblings

Methods

Tasks that the CHILD object can perform

Pick up toys
Eat dinner
Play
Cooperate
Get ready for bed

Instances of the CHILD Object

James Smith
Age 3
Male
Red

Amelia Ali
Age 1
Female
Brown

Misty Greene
Age 12
Female
Blonde

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Object Modeling

- *Object Modeling with the Unified Modeling Language*

STUDENT Object

STUDENT

Attributes

Student number
Name
Address
Telephone
Date of birth
Fitness record
Status

Methods

Add fitness-class
Drop fitness-class
Change address
Change telephone
Change status
Update fitness record

INSTRUCTOR Object

INSTRUCTOR

Attributes

Instructor number
Name
Address
Telephone
Fitness-classes taught
Availability
Private lesson fee
Status

Methods

Teach fitness-class
Change availability
Change address
Change telephone
Change private lesson fee
Change status

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Object Modeling

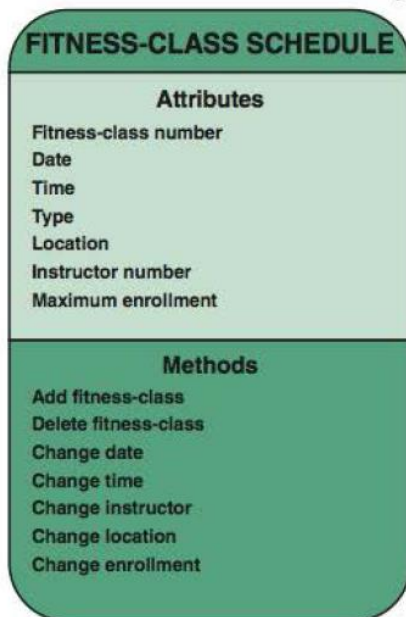- *Object Modeling with the Unified Modeling Language*
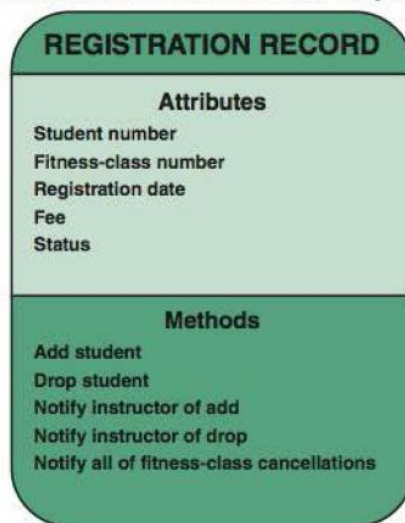 - *Object-Oriented Terms and Concepts*
    - *Principles of OO*
    Three terms most frequently cited are:
      - *Inheritance,*
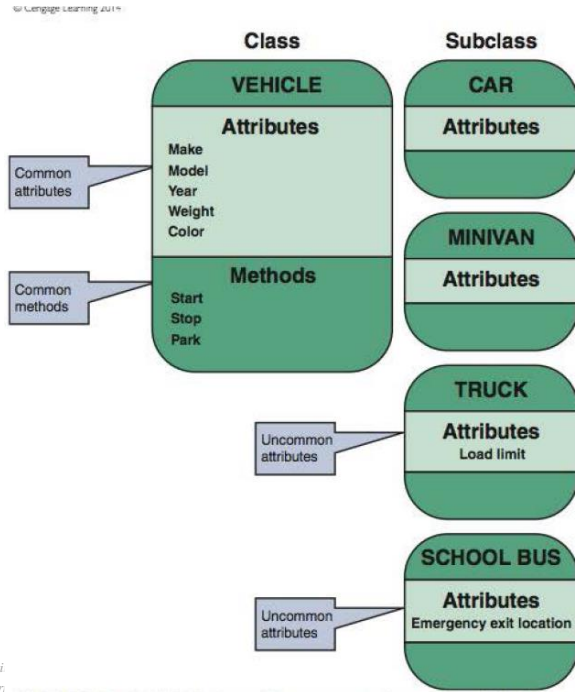
      - *Encapsulation and*

      - *Polymorphism*

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FITNESS-CLASS SCHEDULE Object

FITNESS-CLASS SCHEDULE

Attributes
Fitness-class number
Date
Time
Type
Location
Instructor number
Maximum enrollment

Methods
Add fitness-class
Delete fitness-class
Change date
Change time
Change instructor
Change location
Change enrollment

REGISTRATION RECORD Object

REGISTRATION RECORD

Attributes
Student number
Fitness-class number
Registration date
Fee
Status

Methods
Add student
Drop student
Notify instructor of add
Notify instructor of drop
Notify all of fitness-class cancellations

Object Modeling

- *Object Modeling with the Unified Modeling Language*

Object Modeling

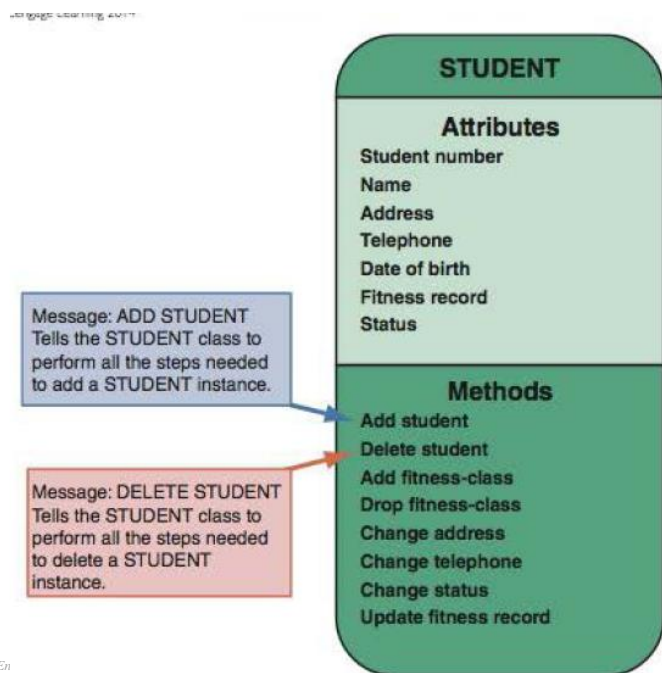- *Object Modeling with the Unified Modeling Language*

Object Modeling

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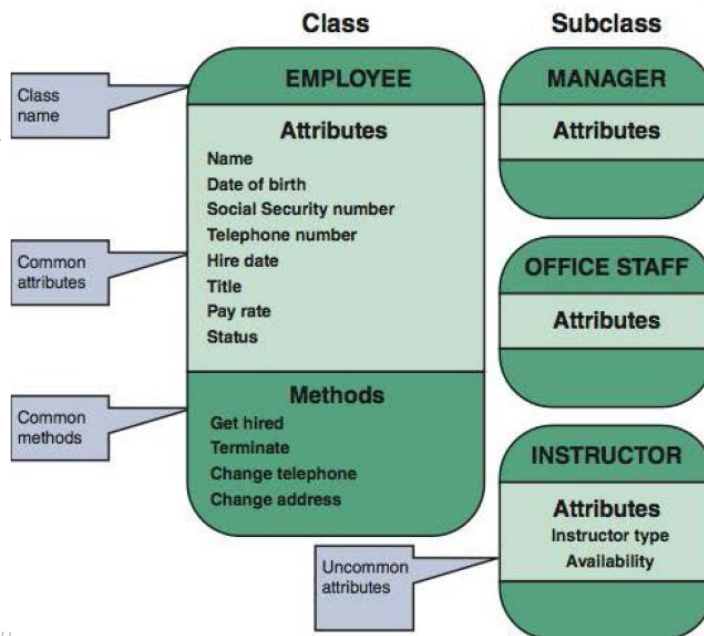*MIS (Management Information System), Session #14*

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Object Modeling
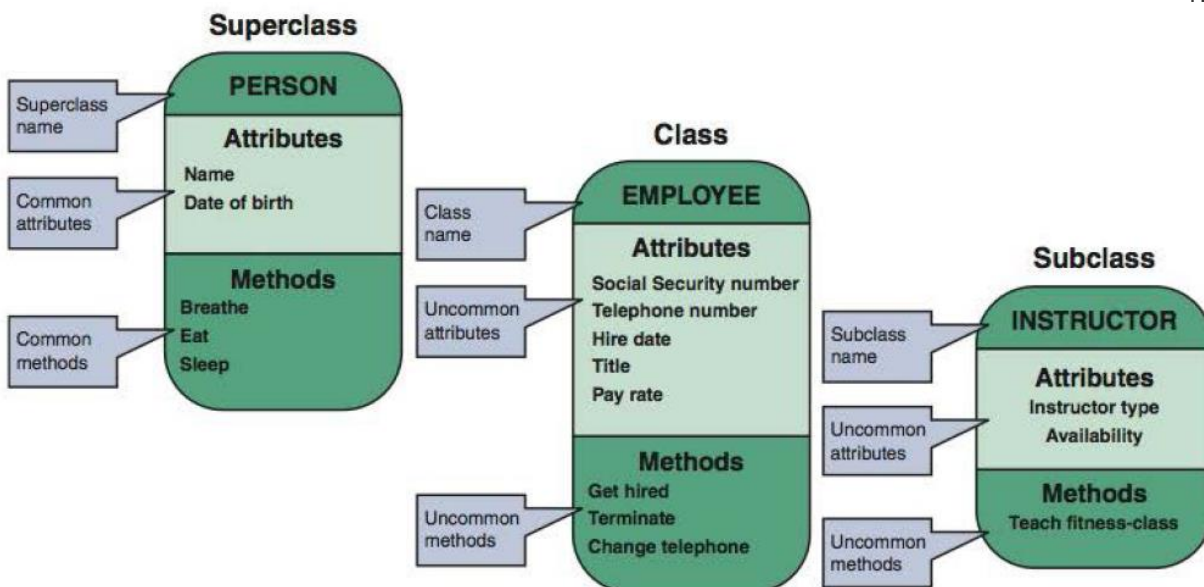
- *Object Modeling with the Unified Modeling Language*

Object Modeling

- *Object Modeling with the Unified Modeling Language*

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