

# Text and Form Analysis

Text Analysis

Form Analysis

Discussion Questions

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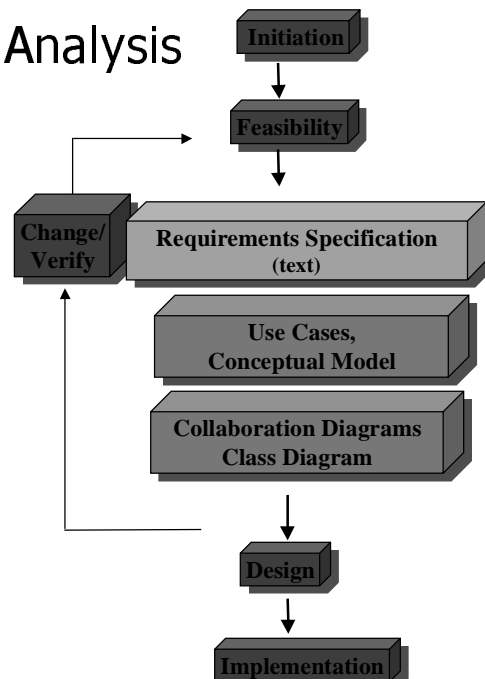
## Questions Answered in This Lecture

- How can a textual description be used to construct a system model?
- How can an input form be used to construct a system model?

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# Object-Oriented Analysis

- Textual documentation
  - Describes system
    - Rationale
    - Requirements
- Multiple system models
  - Processing depicted in different views
    - Use case diagram (graph)
    - Sequence Diagram / Contracts (text)
  - Data depicted in different views
    - Conceptual model (graph)
    - Class diagram (graph)



Text to ERD

# Text Analysis

- Text analysis
  - Analysis of natural language (text) documents found within organization as a source of knowledge about important classes, associations, and operations



## Text Analysis Guidelines

- Classes identification
  - Classes are often nouns and noun clauses
- Attribute identification
  - Attributes are often adjectives
  - Associate the attribute with the class as the adjective is associated with the noun
- Association identification
  - Associations are often verbs
- Operations identification
  - Operations are often verbs

## Text Analysis Guidelines *Details*

### English

### Object Terminology

Noun

Class

Transitive Verb  
(*references a direct object*)N-ary Association (N>1) or Attribute  
*customer places order*Intransitive Verb  
(*no direct object*)Attribute  
*customer dies*

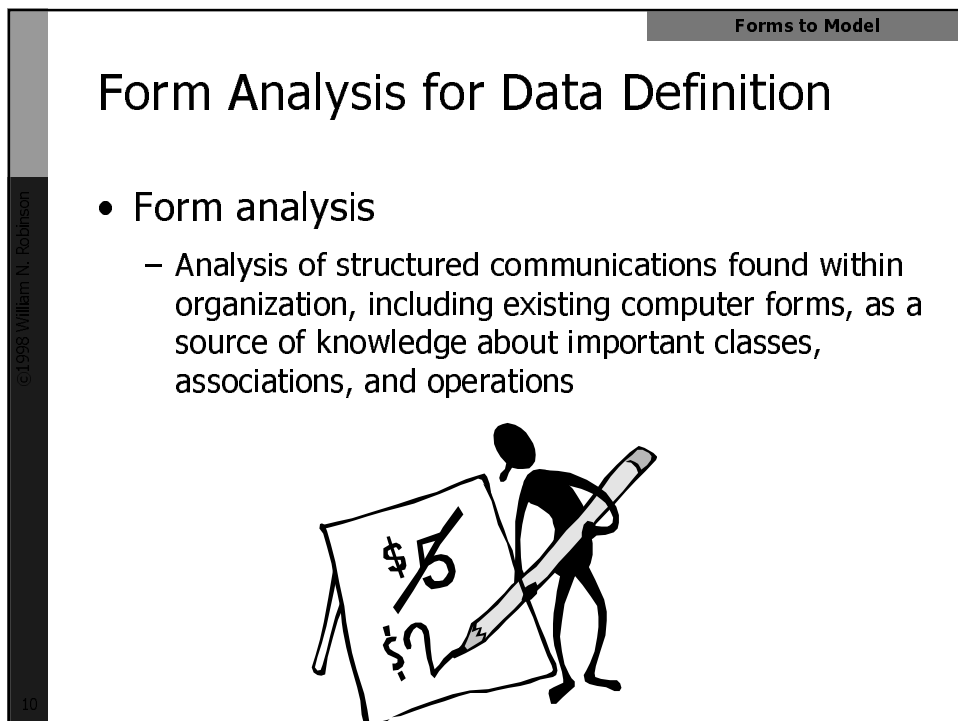
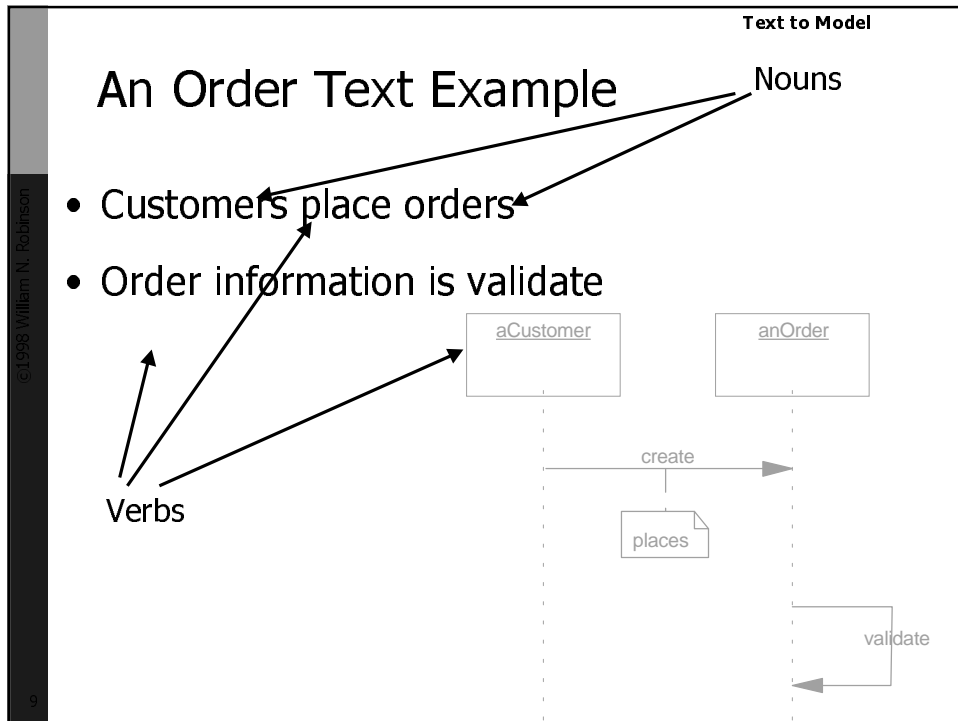
Adjective

Attribute of an Class

Adverb

Attribute of a Relationship





## Form Analysis Class Guidelines

- Class identification
  - Any form field used which is the source of another form field
    - If form salesorder has a customerorder# where customerorder# comes from another form (not shown), then customerorder could be a class
- Attribute identification
  - A form field that is found near a field that
    - Is known to be a class  $E$ , or
    - Is known to be an attribute of a class  $E$

Could be an attribute of class  $E$  -- *attributes are often clustered together*
- Association identification
  - Any form field used which is the source of another form field may indicate a relationship

## An Order Form Associations with Order: Product, Address

The screenshot shows a Microsoft Access form titled "Orders" with the following fields and annotations:

- Class: Product**: Points to the "Product" field in the "Bill To" dropdown menu.
- Product Attributes**: Points to the "Ship To" address fields (Street, City, State, Zip).
- Order Attributes**: Points to the "Order ID" field.

The form displays the following data:

Bill To: Around the Horn  
 120 Hanover Sq.  
 London WA1 1DP  
 UK

Ship To: Around the Horn  
 Brook Farm  
 Stratford St. Mary  
 Colchester Essex CO7 6JX  
 UK

Ship Via:  Speedy  United  Federal

Salesperson: Davolio, Nancy

Order ID: 1045 Order Date: 24-Mar-95 Required Date: 21-Apr-95 Shipped Date: 29-Mar-95

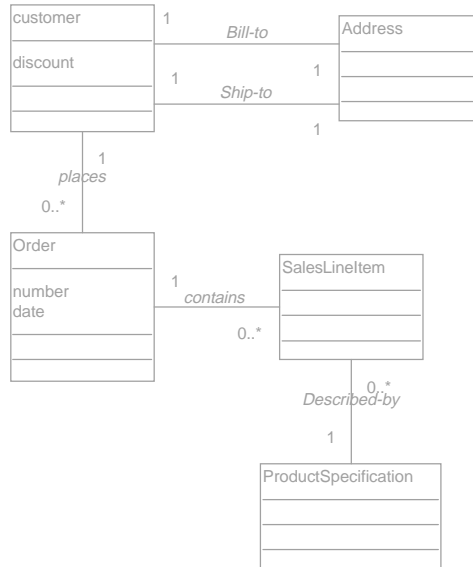
Product	Unit Price	Quantity	Discount	Extended Price
▶ Outback Lager	\$12.00	25	10%	\$270.00
* Chocolate	\$10.20	15	10%	\$137.70
			0%	

Subtotal: \$407.70  
 Freight: \$25.36  
 Total: \$433.06

Buttons: Display products of the month, Print Invoice

Record: 18 of 830  
 Select or type a customer's name.

## A Class Model for the Order Form



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## Form Analysis Operation Guidelines

- Operation identification
  - Any form itself must be managed through a process
  - Any buttons on a form must be managed through a process

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Forms to Model

**Operation: OrderForm.display**

## An Order Form

Microsoft Access - [Orders]

File Edit View Insert Format Records Tools Window Help Show Me

Bill To: Around the Horn  
120 Hanover Sq.  
London WA1 1DP  
UK

Ship To: Around the Horn  
Brook Farm  
Stratford St. Mary  
Colchester Essex CO7 6JX  
UK

Salesperson: Davolio, Nancy

Ship Via:  Speedy  United  Federal

Order ID: 10453 Order Date: 24-Mar-95 Required Date: 21-Apr-95 Shipped Date: 29-Mar-95

Product	Unit Price	Quantity	Discount	Extended Price
Outback Lager	\$12.00	25	10%	\$270.00
Chaco Soda	\$9.18	15	10%	\$137.70
*			0%	

Display products of the month Print Invoice

Subtotal: \$407.70  
Freight: \$25.36  
Total: \$433.06

Record: 18 of 830

Select or type a customer's name.

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Discussion

## Discussion Questions

- Are the automated text parsers or screen scanners that can automatically produce a system model?
  - If so, how well do they work?

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