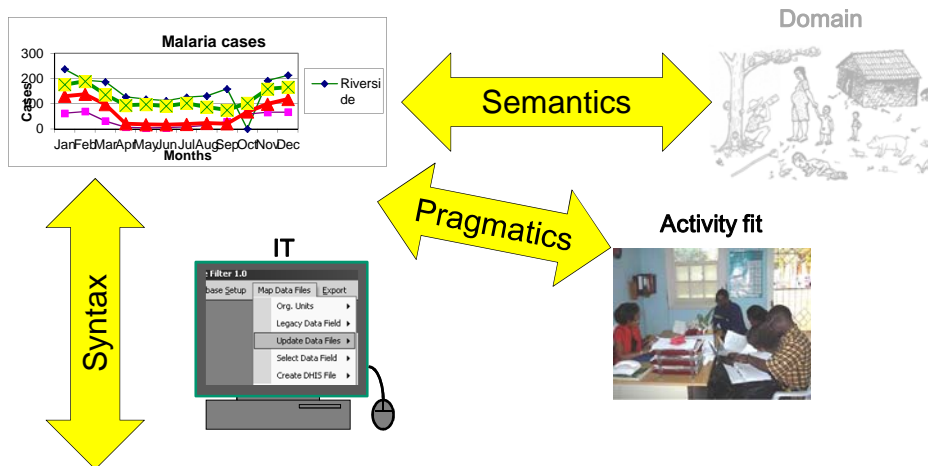


Information competence

- Aim
 - Identify
 - Syntax and
 - Semantic issues
- for your Assignment 2
- Determine the level of mastery of these goals according to
 - the learning models
- Literature
 - Textbook chapter 7
- Additional literature
 - Vessey & Conger (1994) Requirement Specification: Learning Object, Process, and Data Methodologies

1



Representation system

- Partly implemented in IT

2



Information

- About something
- Representing it
 - Detached in time and space from what it is representing
- Expressed in a representation system

Information



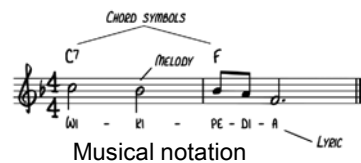
No information



3

Representation system

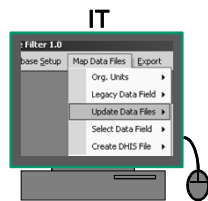
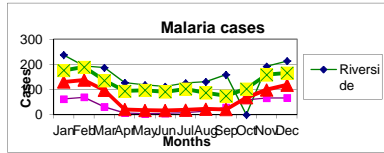
- **Semantics**
 - Coupling a domain to a set of symbols
 - Meaning
- **Syntax**
 - Symbols
 - Rules for combining symbols
- Combined symbols
 - Combined meaning
- Examples
 - Language
 - Formal language
 - Arabic number system
 - Roman number system



4



Syntax



Many syntactic rules implemented in IT

5

Types and Instances

Type

Description of a common set of symbols and operations

Integer

Number without decimals
Calculation operators

Instances

A unit of data adhering to the type

234 -2 1 000 000

Class

Account
Balance
Owner
Deposit
Withdraw

Objects

:Account
18 473.32
Kari
:Account
3 292.00
Ola

6



Data structures

1-many relationship between customer and address

Not explicitly stated

Restrictions on values

Add an address

Full Name:

Address Line1:
Street address, P.O. box, company name, c/o

Address Line2:
Apartment, suite, unit, building, floor, etc.

City:

State/Province/Region:

ZIP:

Country:

7

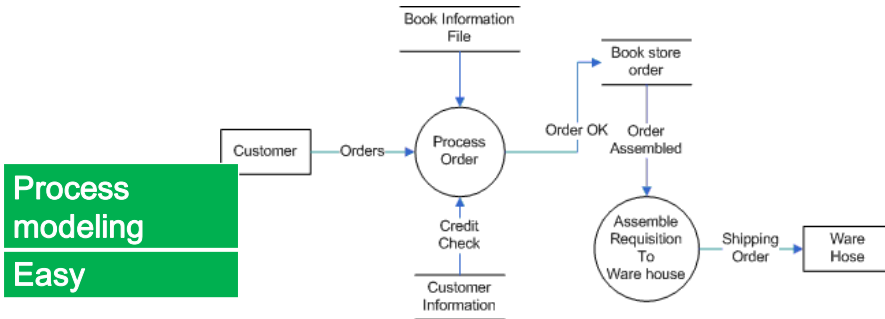
Aspect	Explanation	Example – Styles in text processors
Semantics	What it refers to	The format of paragraphs
Syntax – Type-Instance	Properties and operations enabled	Composite of paragraph, character, border and numbering.
Syntax – Restrictions	Disabled values and operations	
Syntax – Internal structure	How the instances are organised.	Two level hierarchy
Syntax – External structure	How its instantiations relate to instantiations of other concepts	Can be applied to 0 or more paragraphs.
Comparisons with other concepts	Similarities and distinctions to other concepts.	Style and master slides determine layout of portions of a file. Styles apply to paragraphs, while master slides apply to slides.

Aspects of an information concept

8



Easiness of making data structures



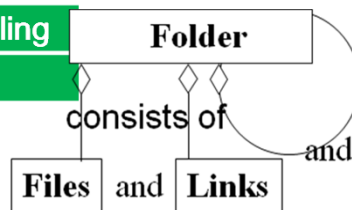
Process modeling

Easy

Data and object modelling

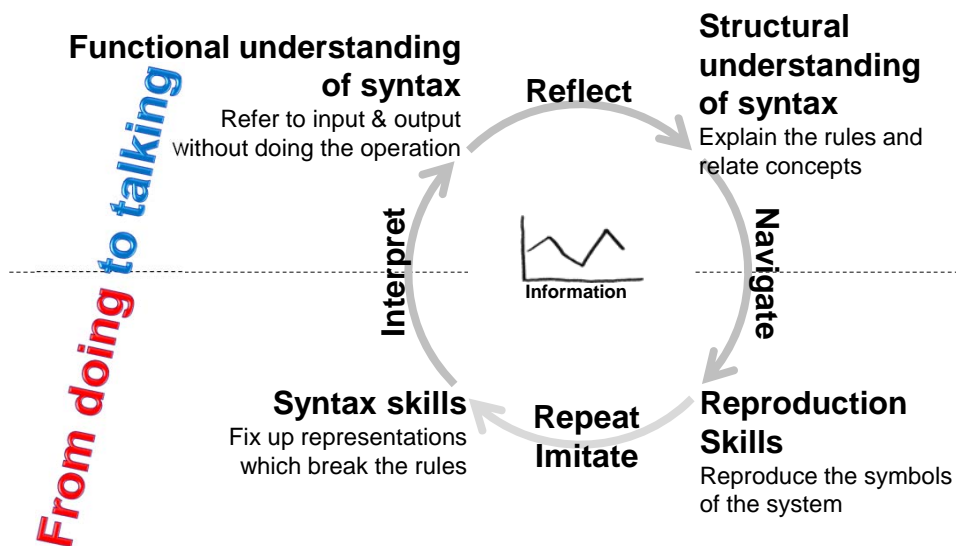
Difficult

Vessey & Conger, 1994



9

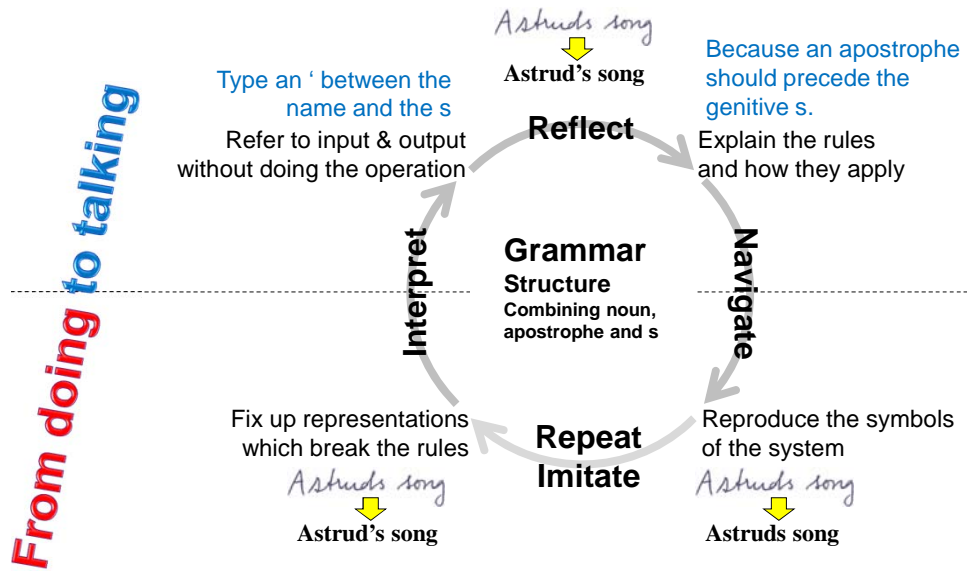
Learning syntax – levels of mastery



10

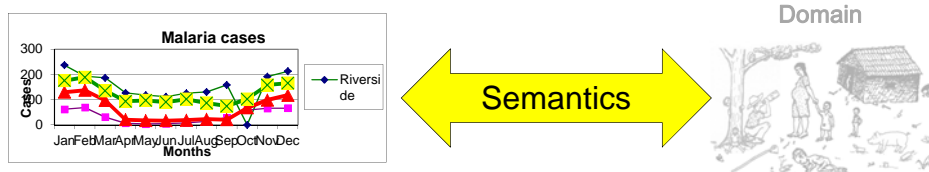


Learning syntax – example



11

Semantics

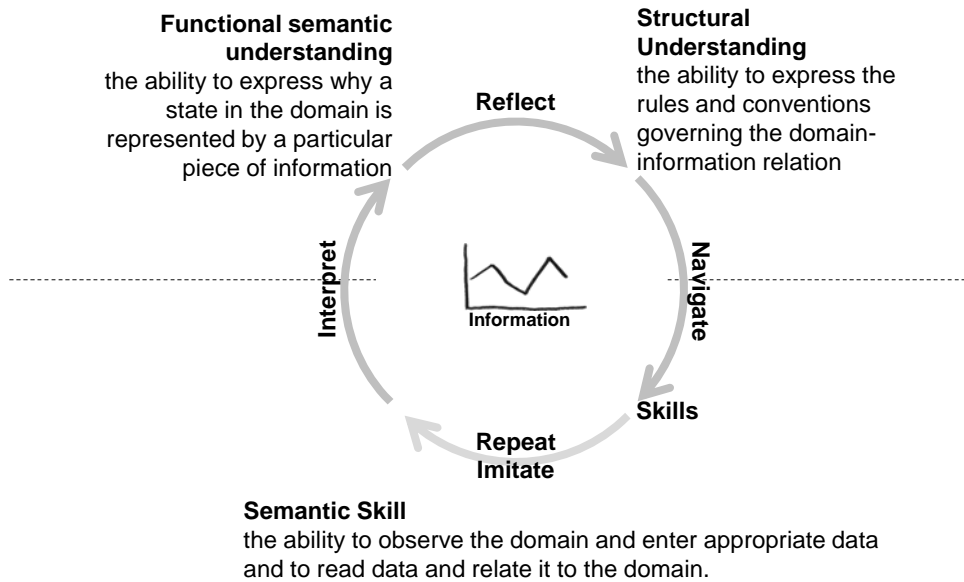


- Users' Meaning of the Information
- Rules and conventions for aligning Information with Domain
 - Collectively agreed by the group of users

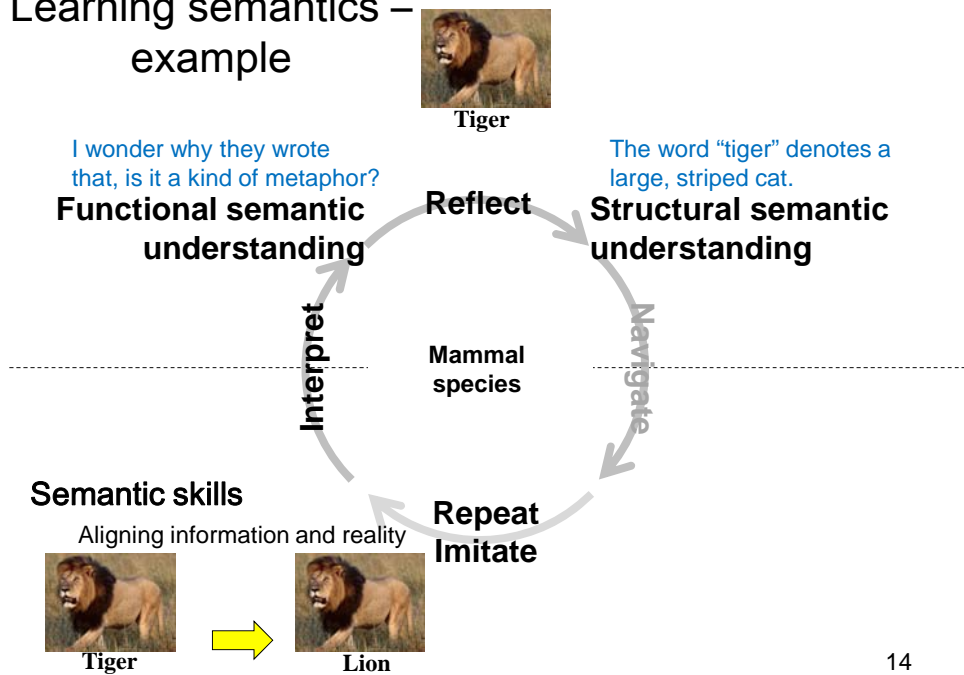
12



Learning semantics



Learning semantics – example



Learning failure – interference

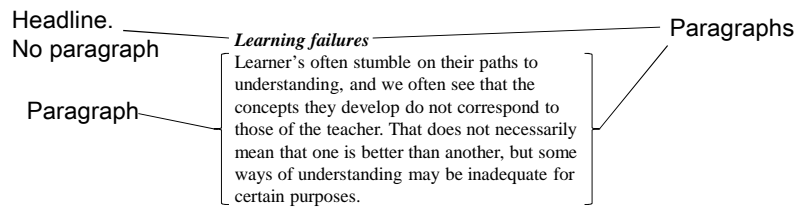
- Two concepts with similar properties
- Basing learning on the wrong preconception

Grammar

A paragraph is a sequence of sentences dealing with one point

Word processors

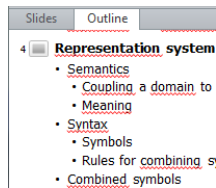
A paragraph is a sequence of characters ending with Enter



Making structural models

1. Find the data structures

- Outline views



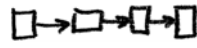
- Data models



- Deduce from user interface



2. Decide main and sub structure types



Sequence



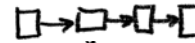
Grid (array, matrix)



Hierarchy



Network



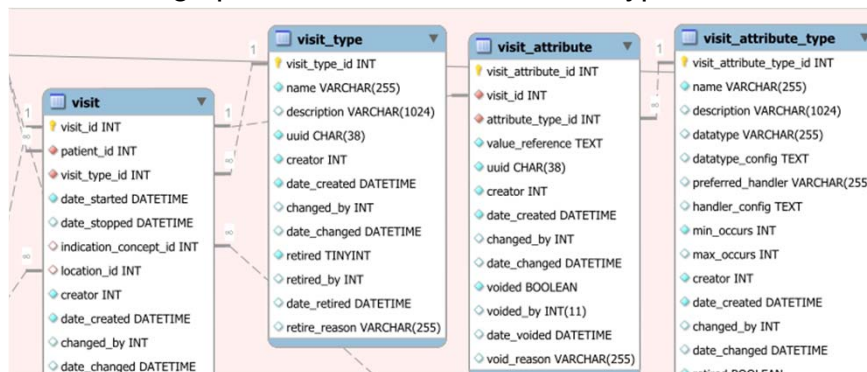
Combinations?

3. Decide user group

- Entering and reporting → Only data

Visit Visit-ID Patient Visit-type

- Setting up data structures → Include types



4. Include abstract entities

- Events in the Domain represented by a record

Occupancy
From date
nights
guests

- Planned events

Reservation
From date
nights
guests
Room type

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5. Include examples

- In the model

Customer
Name: Fjoralba
Address: Oslo
Phone: 123456
Email: fj@mail.com

Reservation
From date: 24.03.14
nights: 3
guests: 2
Room type: Luxe

- Relate to recognisable places in the user interface

New reservation	
Name	Fjoralba
# guests	2
From	24 March 2014
# nights	2
Room type	Luxe

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Start Assignment 2 making

- A list of 1-3 concepts to include in your teaching
- A table of the aspects of the concept(s)
- A structural model for Assignment 2

