

# The Unified Modelling Language (UML)

What is UML ?

# Unified Modeling Language (UML)

- **Standardized** (by the Object Management Group – OMG) **specification language** for **object-oriented modelling**. Actually, the UML is a **collection** of languages.
- Mostly **visual syntax** (diagrams), though the Object Constraint Language – OCL has textual syntax.
- UML has notations for describing **requirements**, **design** (down to **code** level if desired), and **deployment**.

# What is it not?

- A **programming language**, but it can be used to generate code in some programming language if enough detailed information is specified.

Modelling is usually done at a **higher abstraction level** than coding.

- A **process**. The Rational Unified Process (RUP) is the companion development process.

# Unified Modelling Language

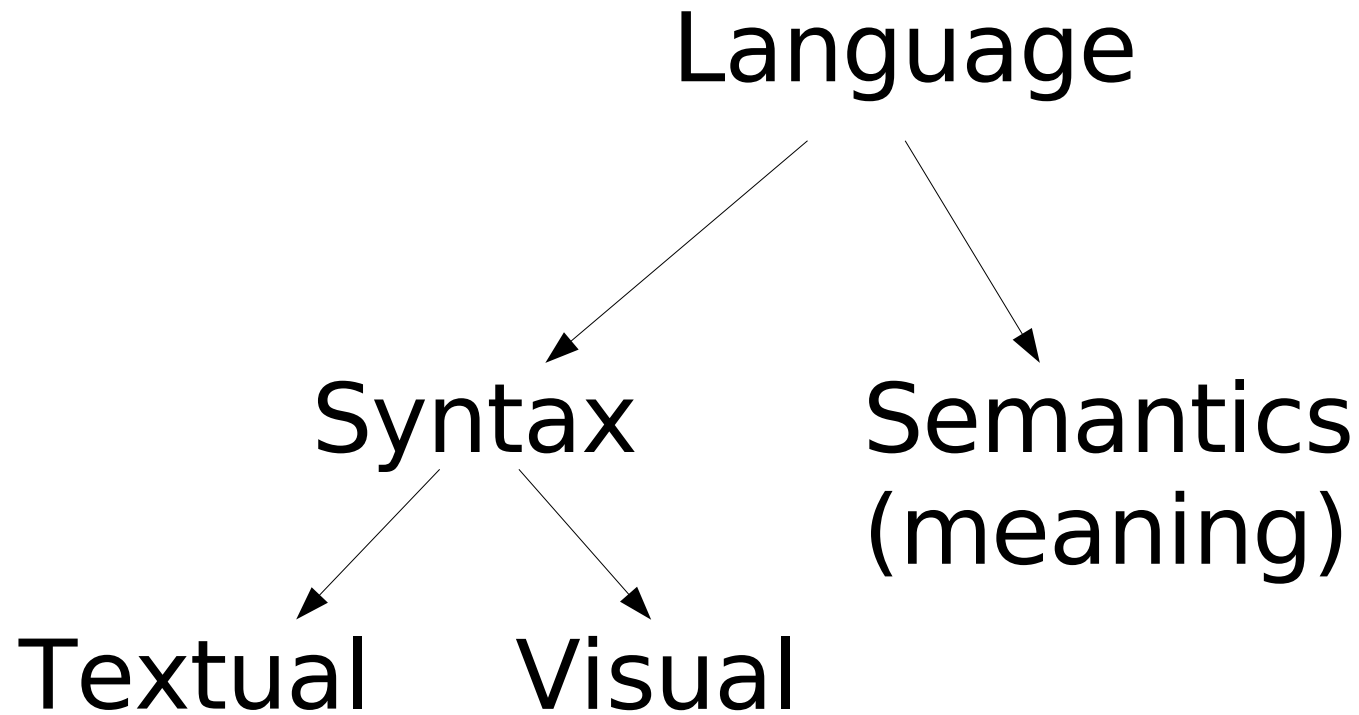
← reading left to right →

	An A is always associated with one B	An A is always associated with one or more B	An A is associated with zero or one B	An A is associated with zero, one, or more B
<i>Booch</i> (1st ed.)				
<i>Booch</i> (2nd ed.)*				
<i>Coad</i>				
<i>Jacobson</i> **				
<i>Martin/Odell</i>				
<i>Shlaer/Mellor</i>				
<i>Rumbaugh</i>				
<i>Unified</i>				

\* may be unidirectional  
 \*\* unidirectional

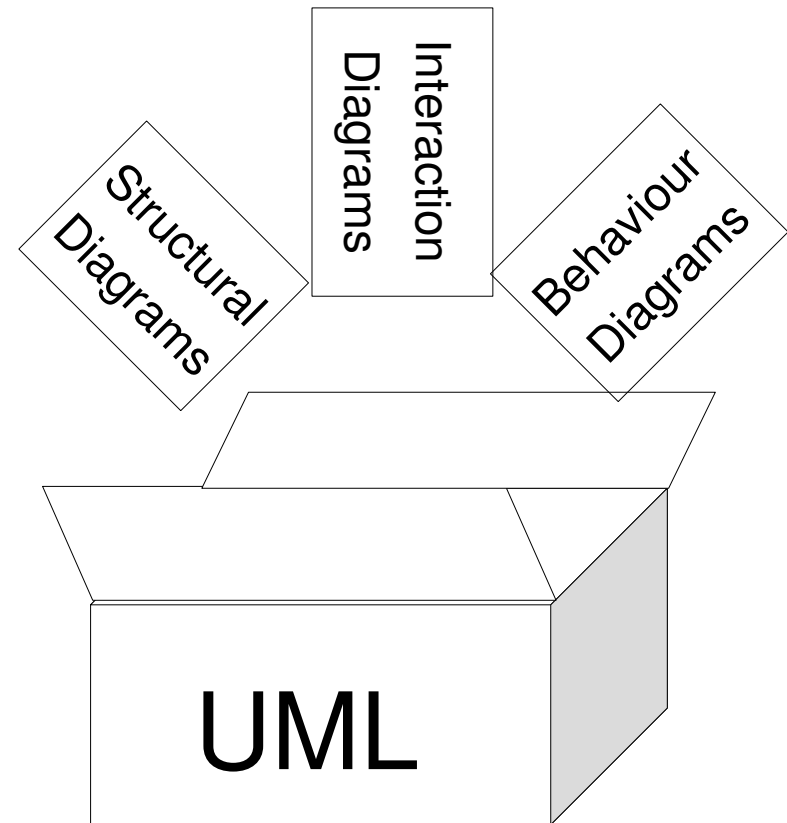
(from UML Distilled - Fowler)

# Unified Modelling Language



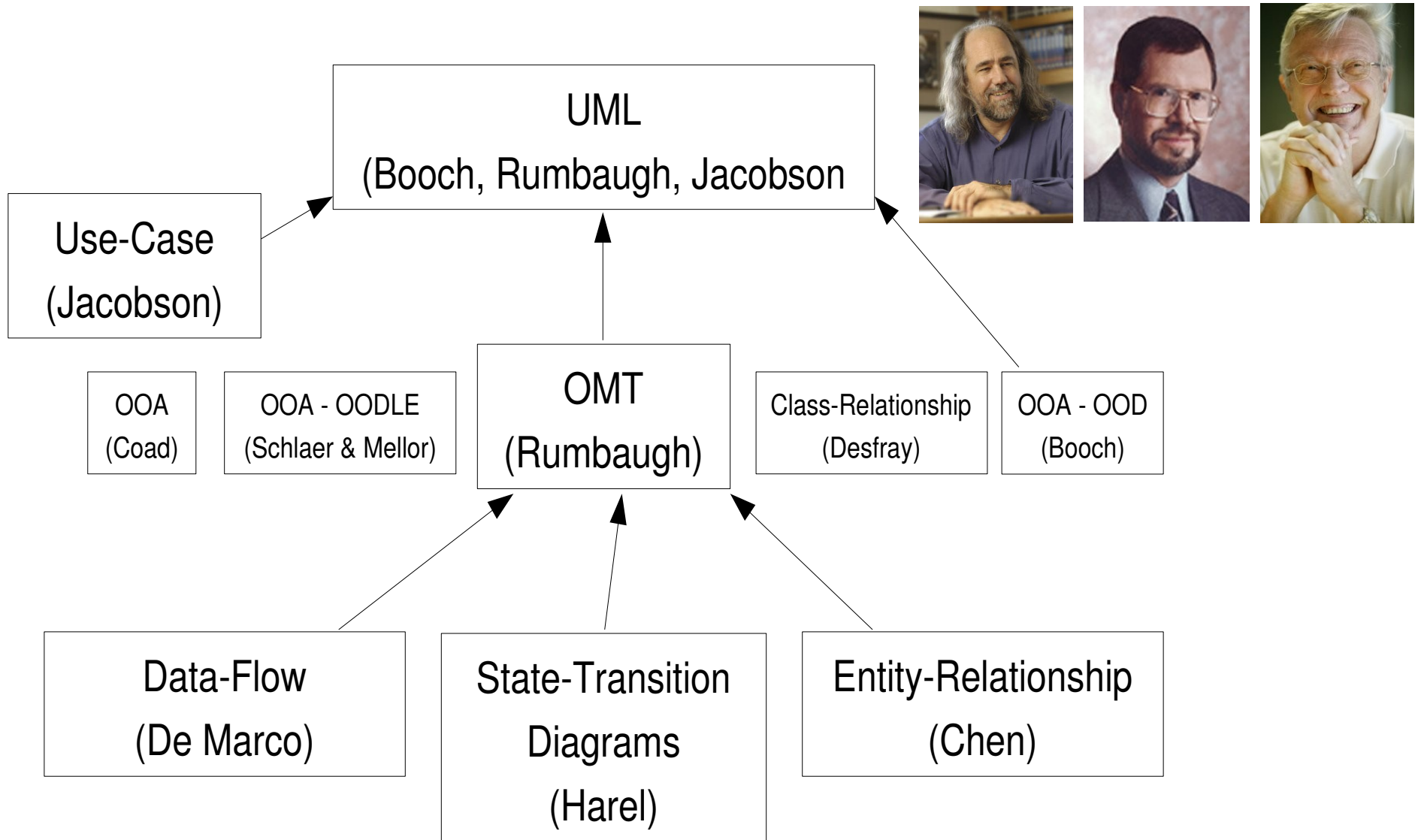
# UML: collection of notations/languages

- **Requirements:**
  - ◆ Use Case Diagram
- **Structural:**
  - ◆ Class Diagram
  - ◆ Package Diagram
  - ◆ Component Diagram
- **Interaction:**
  - ◆ Communication Diagram
  - ◆ Sequence Diagram
- **Behaviour:**
  - ◆ Activity Diagram
  - ◆ State Machine Diagram (Statechart)
- **Deployment:**
  - ◆ Deployment Diagram



- Mid- to late- 1990's
- “3 AMIGOS”  
(Grady Booch, Jim Rumbaugh and Ivar Jacobson)
- Joined together to unify their individual ventures
- Each was working on some sort of O.O. modeling technique/process

# History





# CamelCase

- Practice of writing compound words or phrases where the words are joined without spaces, and each word is capitalized within the compound.
  - ◆ CsGames,LinkedList, eBay, PowerBook, WestJet
- The terms UpperCamelCase and lowerCamelCase are used to distinguish two types of CamelCase.
  - ◆ UpperCamelCase
  - ◆ lowerCamelCase

