Unified Modelling Language

- Syntax only
- Comprehensive
- Language Independent
- Process Independent
- Tool Independent
- Application not well understood

Object Oriented Analysis & Design
Grady Booch

Object Oriented Modeling & Design
Jim Rumbaugh et al

UML

OOSE (A Use Case Driven Approach)
Ivar Jacobson

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Slide 1
UML Diagram Types

- Use Case Diagrams
- Static Structure Diagrams
  - Object Diagrams
  - Class Diagrams
- Interaction Diagrams
  - Sequence Diagrams
  - Collaboration Diagrams
- Statechart Diagrams
- Activity Diagrams
- Implementation Diagrams
  - Component Diagrams
  - Deployment Diagrams
Use Case Diagram

- Salesperson
  - Add Model <<extends>>
  - Add Vehicle <<uses>>
  - Create Quote or Invoice <<extends>>
  - Add New Customer

- Enter Job Details <<uses>>
- Find Model <<extends>>

Service Clerk

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For each item to be purchased:
Sales assistant enters item number
System finds item details and total stock available
System displays item details
End For
Collaboration Diagram

Current : Process Order

1: Enter item id

: Sales Assistant

2: Get details

3:*Get

4:*Get details

: Stock Item

: Backorder
- Delivery Date

: Item

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Slide 6
Statechart Diagram

Start

create

Closed

Closed/Stop motor

do: Run motor
Entry/Start motor
Jam/set alarm

Closing

Open[unlocked]/Start Motor

Opening

do: Run motor
Exit/Stop motor
Jam/set alarm

Opened

Tap

Open[unlocked]/Start Motor

Open[unlocked]

Open

Closed

Opened

Closed/Stop motor

do: Run motor
Entry/Start motor
Jam/set alarm

Closing

Close[unlocked]

Open

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Activity Diagram

Customer

Request Service → Pay → Collect Order

Sales

Take Order → Fill Order → Deliver Order

Stockroom

- Action States
- Events (may be named)

- Swimlanes
- Start and end points
- Concurrency
Component Diagram

Order Processing System

User Interface

Data Processor

Data Manager

Database

External System

Component Diagram

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Flow of Data Between Main Views

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Flow of Data Between Subsidiary and Main Views

Business Model

Logical Model

Component Model

Deployment Model
Architecture Modelling

◆ Packages, interfaces and dependencies model
  ● Sub-systems
  ● Components
  ● Hierarchy
  ● Client-server relationships
  ● Architectural layering

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