


OBJECT-ORIENTED MODELLING (OOM) - 32536 MODULE 7

Activity diagrams and process modelling
(POOA-Chapter 5)

Module Outline



- Purpose of Activity Diagrams
- Major Ingredients of Activity Diagram
- How to draw an Activity Diagram
- Examples of Activity Diagrams
- Business Process Models (BPMs)
 - Brief overview of an alternative to Activity Diagrams

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Module: Activity Diagrams

Creating the Process Models within
and outside the system

Purpose of Activity Diagrams

- Extensively used in Business Analysis
 - Modelling in the Problem Space
- Models the flow of Activities
 - Within the requirements (use cases); the steps within the use cases can be modeled as activities.
 - In the overall System
 - In the overall Business
- A highest level Activity Diagram can be used as a Context-diagram
 - showing how various business processes are related

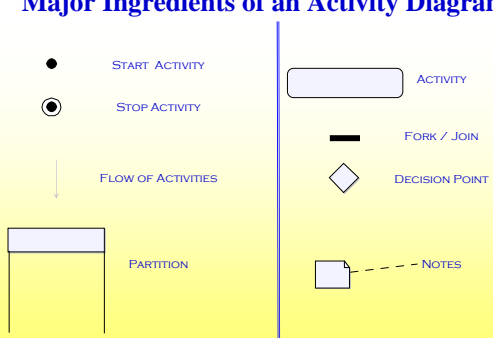
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What is an Activity Diagram?

- Essentially a Flow Chart
- Able to visually show Sequentially Dependent Business Objects
- However, in addition to a Flowchart, they also show:
 - Multiple Threads
 - Partitions (swimlanes) resulting in their use in Workflow modelling
- These Activity Diagrams do not have a formal & separate Documentation attached to them within UML

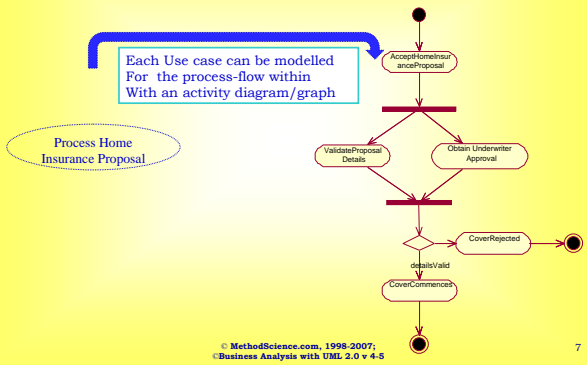
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Major Ingredients of an Activity Diagram

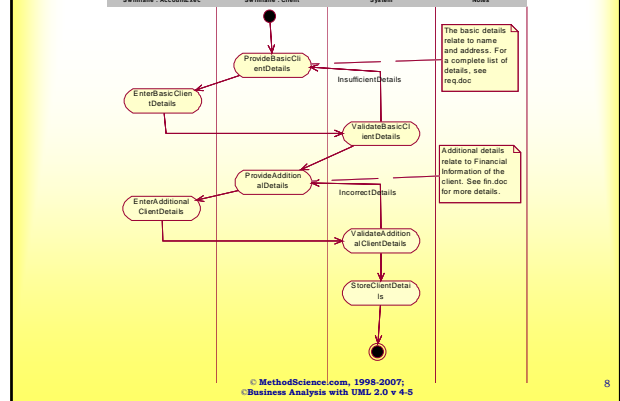


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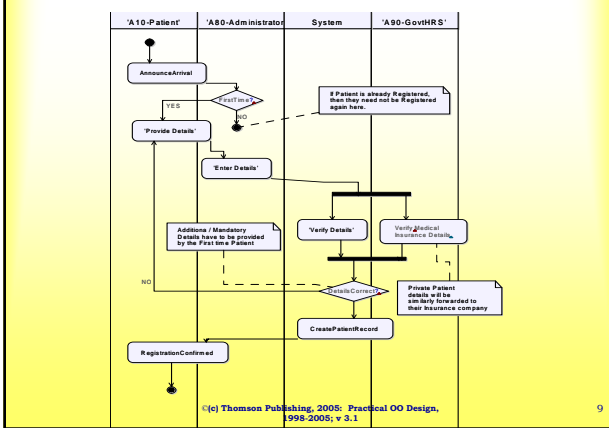
A Simple Example of Activity diagram



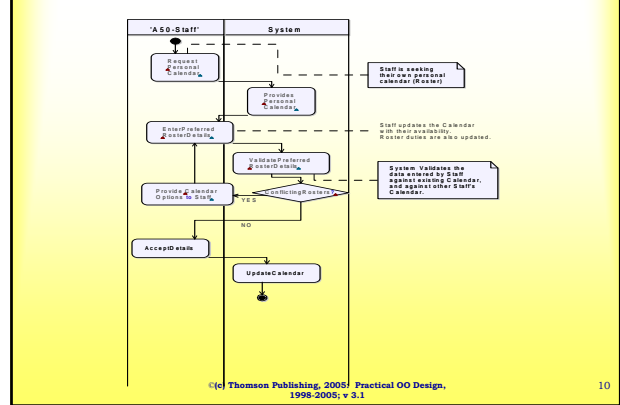
“AddsClientDetails” Activity diagram



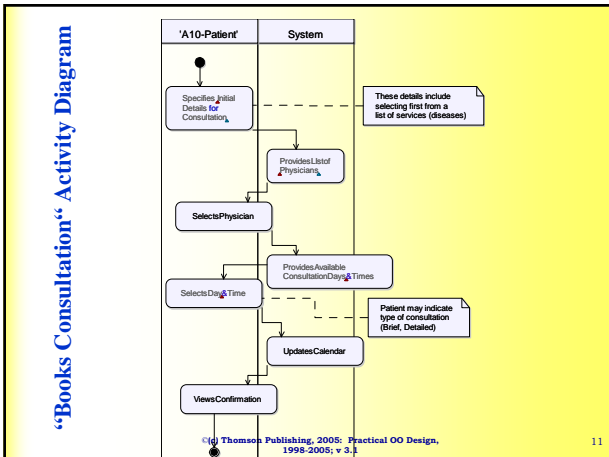
“Registers Patient” Activity Diagram



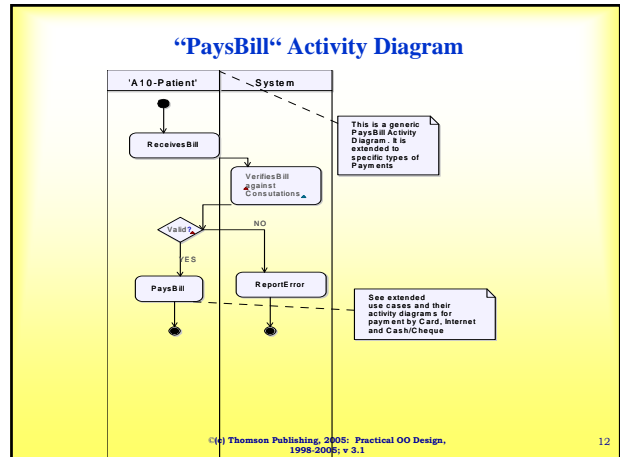
“Maintains Calendar” Activity diagram



“Books Consultation” Activity Diagram



“PaysBill” Activity Diagram



Sub-Module:

Business Process Diagrams (BPD)

A brief overview of the alternative to activity diagrams

Business Process Modelling Notation (BPMN)

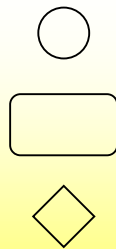
- Based on www.BPMI.org
- BPMN provides the ability to define and understanding business processes
 - Internal to the organization; External, with other organizations and clusters
- Results in BPD
 - Business Process Diagrams
- BPMN can be used to generate
 - BPML (Business Process Modelling Language)
 - BPEL (Business Process Execution Language)

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BPMN – Flow Objects

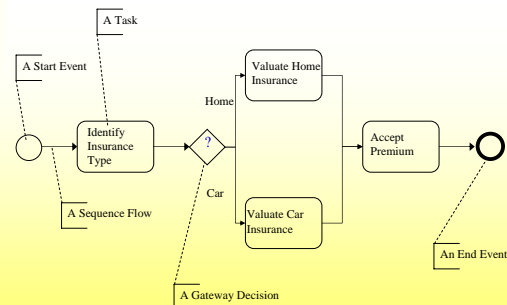
- Events
 - Happens during the course of a Business Process
 - Start; Intermediate; End;
- Activities
 - Generic term for what the business does;
 - Process; Sub-Process; Tasks;
- Gateways
 - Control divergence and convergence in business flow
 - Branching; Forking; Merging and Joining.



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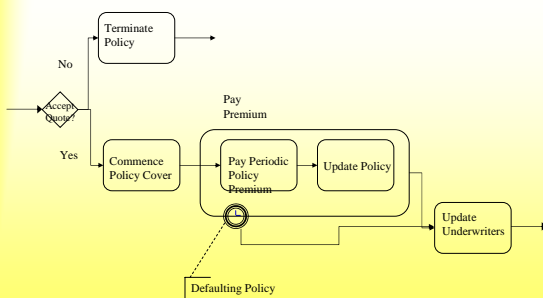
A Basic Process (Insurance Example)



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Another Basic Process Example with More details



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Conclusions

- We discussed the relevance of Activity diagrams in modelling in problem space
- Activity diagrams were mapped with use cases
- Activity diagrams can also be used to model the overall flow in the system/business
- Looked at an alternative modelling technique of BPM

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WORKBOOK



EXERCISES

For The Class Room!!

Workbook Exercises

1. Draw an activity diagram corresponding to a use case you documented earlier
2. Draw another activity diagram at a higher level, that deals with a major aspect of a system
3. Redraw the activity diagram drawn by you using BPMN

PROJECT WORK : (DURING TUTORIAL; ATTENDANCE IS MANDATORY)



This is a friendly Reminder:

**Follow the Project Work Requirements;
Discuss Your Project Work with your Tutor;
Ensure you Minute your Group Tutorial
Activities & Attendance**