

ERP Course: Planning, Design, and Implementation of ERP

Readings: Chapter 3 Mary Sumner

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ERP Implementation

Phases stay:

- Planning
- Requirements analysis
- Design
- Detailed design
- Implementation
- Maintenance

Focus changes

- To fit the existing software (ERP) package to an organization

Planning (Business justification)

Inventory cost reductions

- Ability to use timely operational data

IT cost reductions

- Ability to integrate systems instead of maintaining many separate

Personnel cost reductions

- Ability to enhance systems without incurring the time and cost of custom development and modifications

Increased profitability

- Ability to introduce new features

Productivity improvement

- Access online to real time data

Better cash management

- Reduction in cost and time of systems development and maintenance

Requirements Analysis

Analyzing business process (how company works)

Analyzing how those process are already supported

Specifying the processes to be supported in addition or change of the current support

Should fit with organization's goals and competitive strategy

Analysis of technical infrastructure

Specification of technical infrastructure which should enable the change

Selecting an ERP System

Create a vision

Create a feature list

Create a software candidate list

Narrow the field to 4 - 6 candidates

Create RFP

Select 2 - 3 finalists

Select a winner

Justify the investment

Negotiate the contract

Run a pre-implementation pilot

Validate justification

Technology Factors

Cost of technology (start-up and recurring)

Installation (support, time, and cost)

User interfaces

Upgradability

Computing environment

Personnel requirements (to use and to design)

Design

Re-engineering vs. Customization

Re-engineering

- Analyse possibilities to change processes and organizational structures
- Design changes to fit ERP best practices

Customization

- Analyse current processes
- Suggest an ERP system change to fit it to existing processes

Re-Engineering vs. Customizing

Customizing

- + Supports unique business processes
- + Strategic processes are maintained
- Difficulty to introduce some changes
- Difficulty with upgrades

Re-Engineering

- + Features and processes supported by ERP
- + Based on best practices
- Does not support strategic or unique business processes
- Resistance to organizational change

Re-engineering and customization factors

	Re-engineering	Customizing
Re-engineering business processes	Software system best practices	Independent of tools being implemented
Organizational fit	works well with minimal changes but can disturb the organization if extensive changes are required	may disrupt organization less because the software is designed to the processes
Evolution	depends on vendor	evolution can support unique requirement but create difficulties when a vendor upgrades features you have changed

	Re-engineering	Customizing
Cost	Implementation is cost effective	may involve extensive costs of custom implementation
Requirements	boundaries set by business process models and best practices	more flexibility for custom requirements
Competitiveness	other firms have the same settings	do not have to use the software which other companies in industry adopted
Fit	Need to fit to requirements drawn by the ERP	Unique requirements has to be supported by a customization
External consulting	Needed to consult business process change	Needed to consult system implementation change

ERP Implementation Alternatives

Vanilla implementation

Single vendor with customization

In-house with supplementary ERP modules

ASP

Detailed Design

Select applicable business processes

Discard inaplicable business processes

Reorganize and document new processes

Identify areas not covered by the best practices which require customization and development

Models Used

Component model – show major functions

Organization model – breakdown of organization structure

Data model – information needed by a company

Interaction model – information flow between organizational units

Implementation

Dialog customization

Dialog connection customization

Processing functions customization

Data model customization

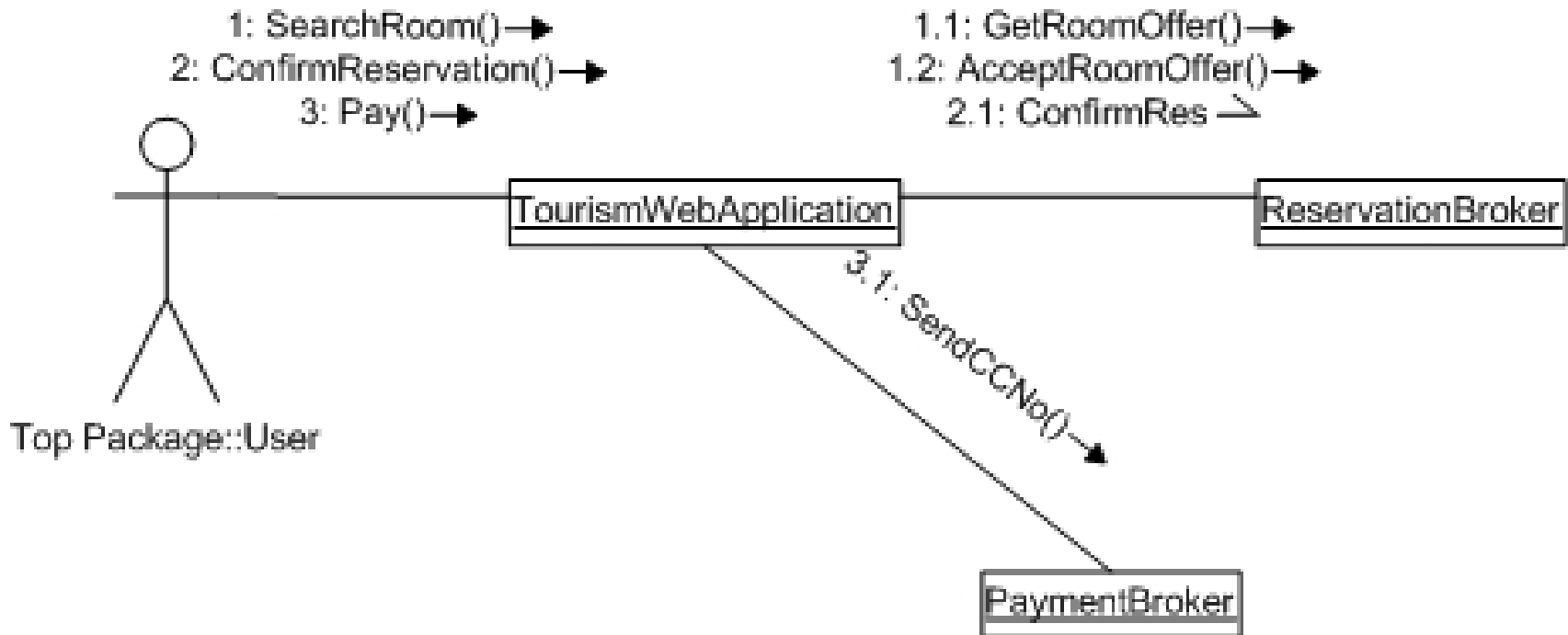
Reports customization

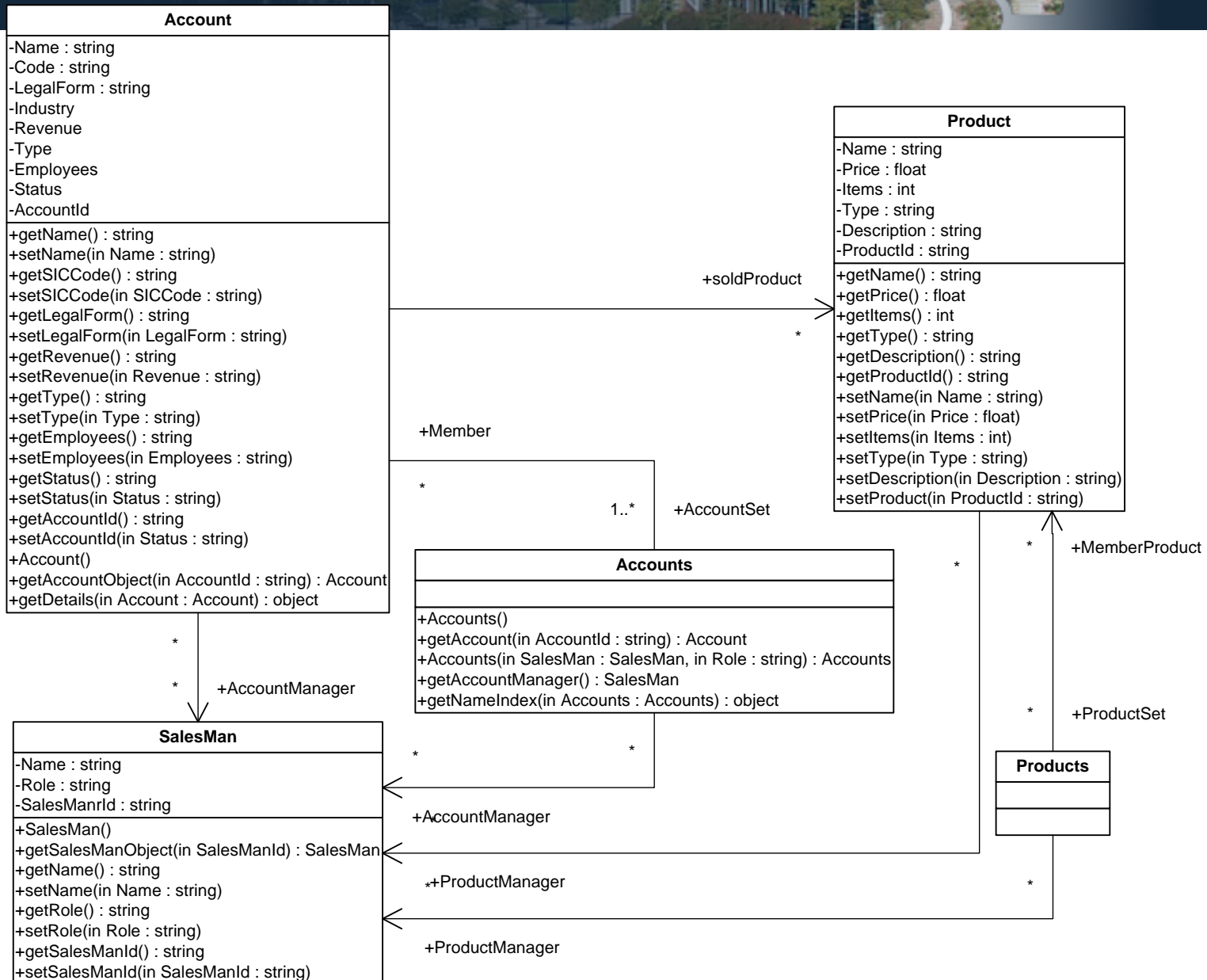
Integration with the office systems

Protocols/Activities

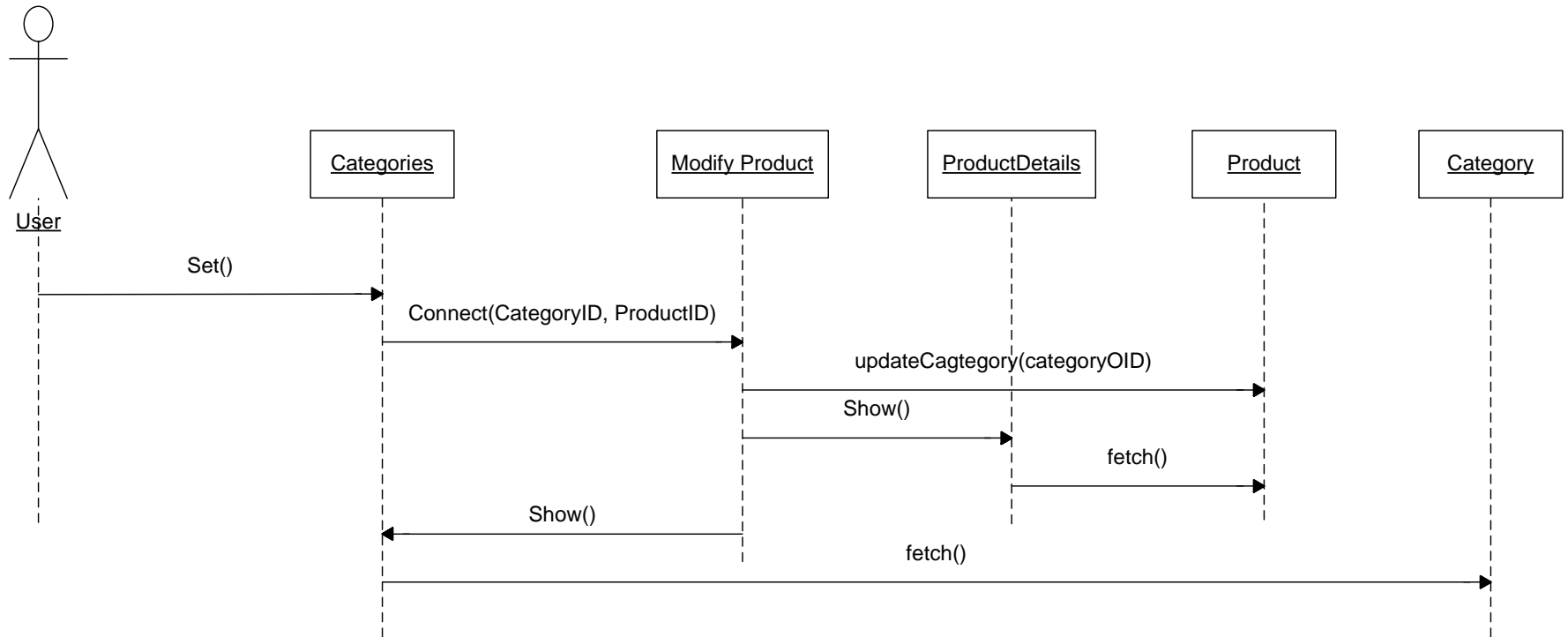


Collabotation/Interaction Diagrams

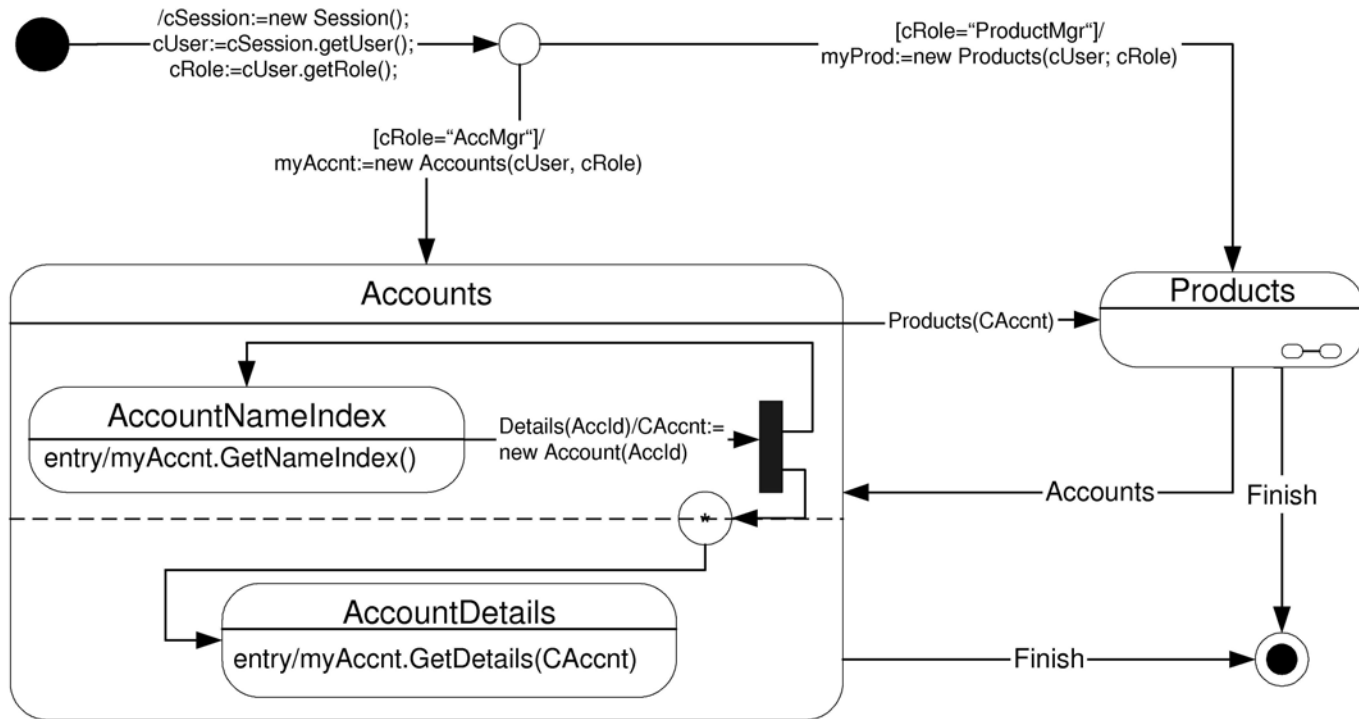


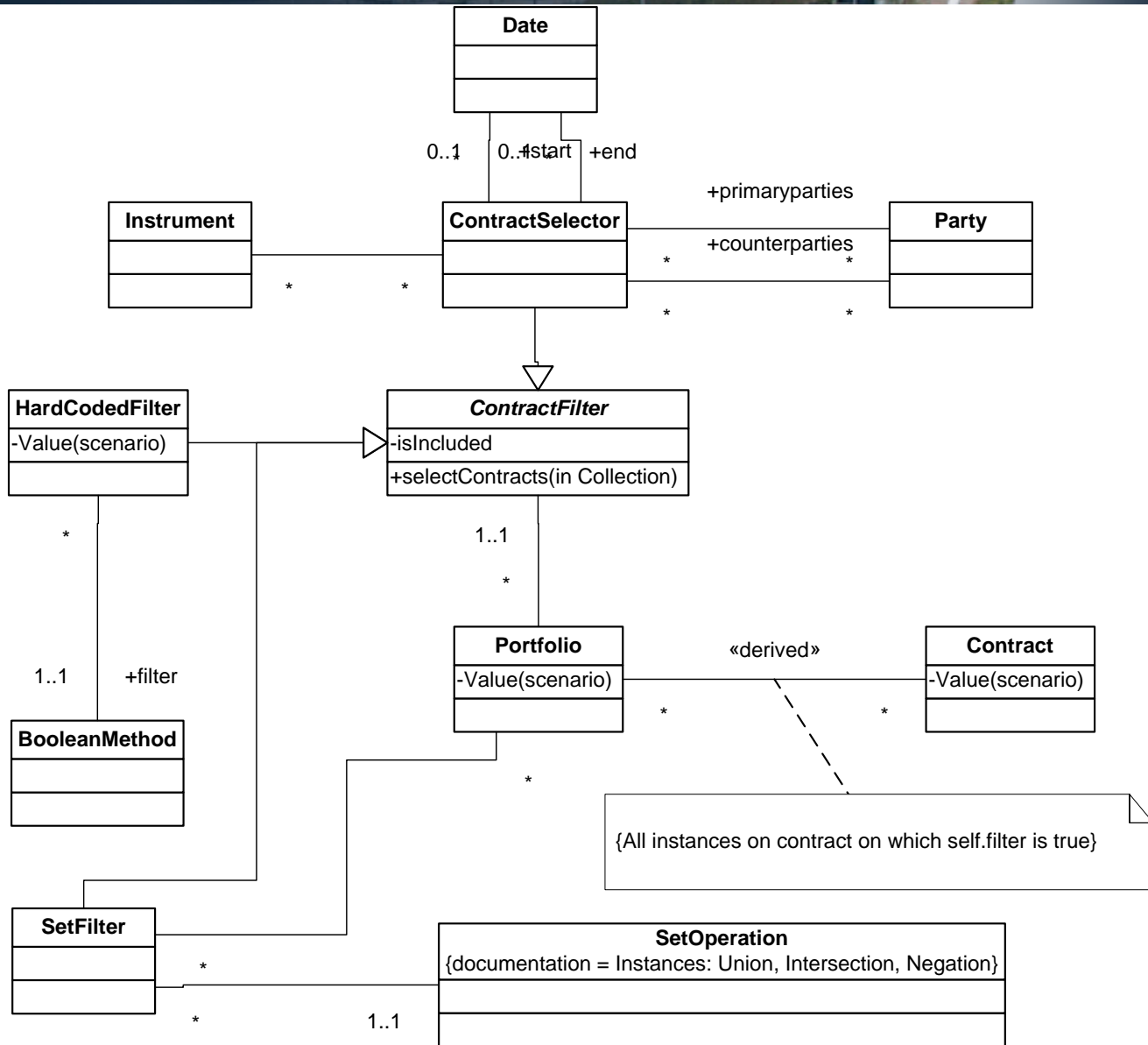


Dialog Sequencing – clasify product



Dialog Sequencing – user interaction





Client Customization

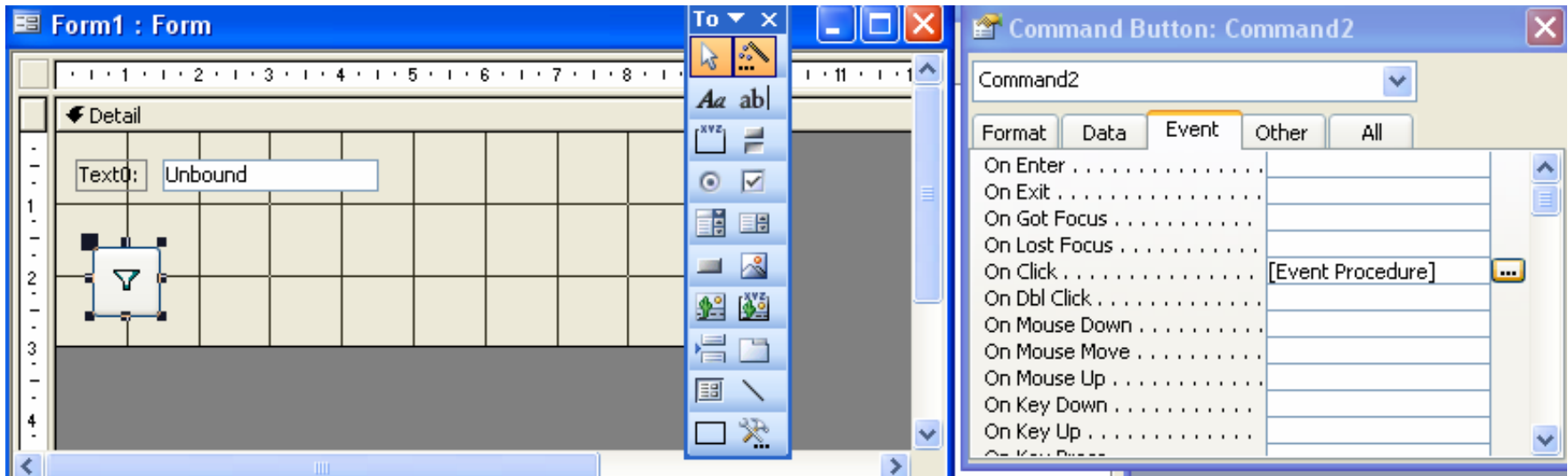
4G languages – forms

- Adding, modifying attributes, control boxes, ...
- Adding/modifying client function
- Adding/modifying connection to database
- Adding/modifying menus, control flows, ...

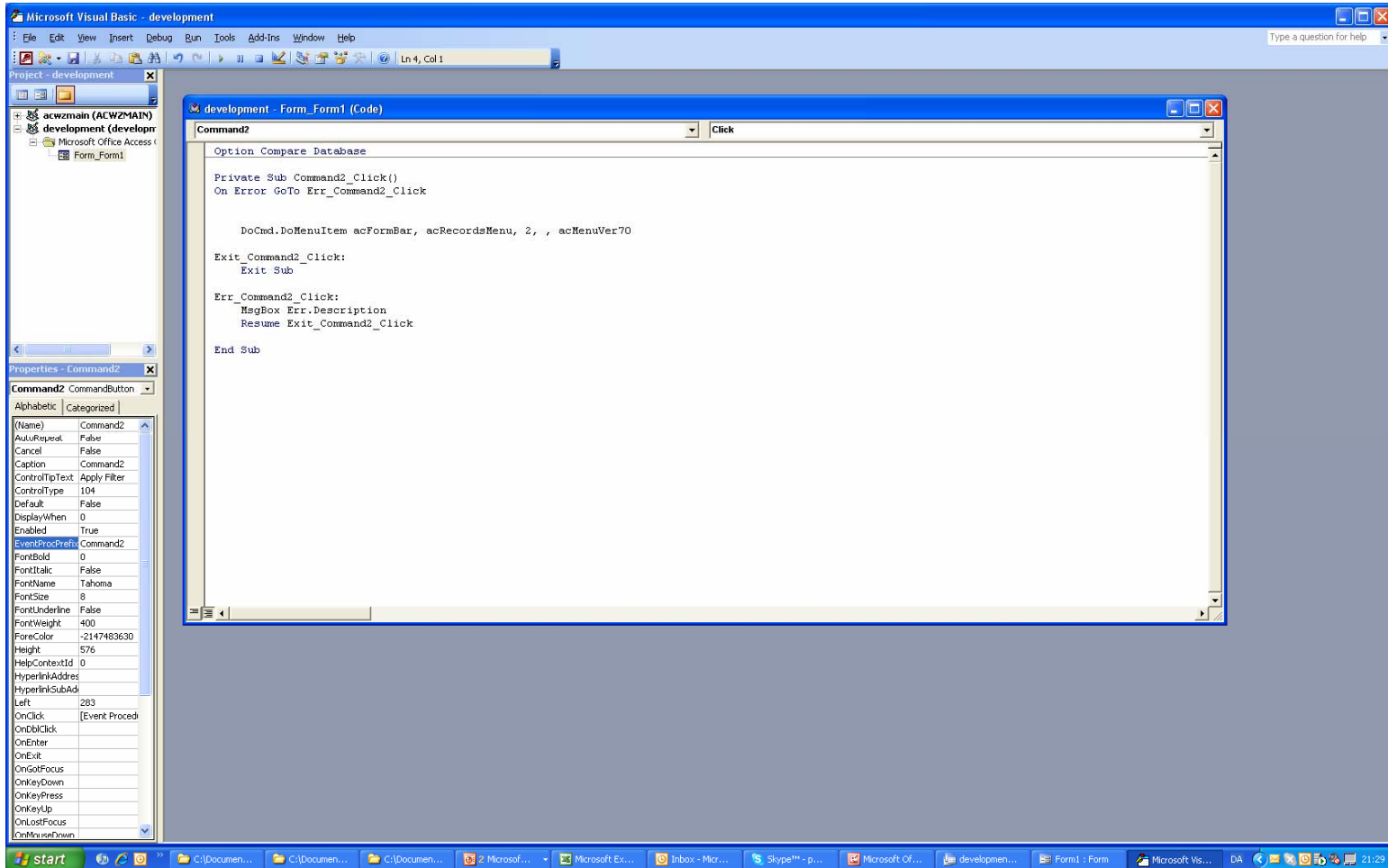
Client APIs

- Externilize dialogs to functions
- Allow to instantiate and embed client dialogs and functions in external programs

Forms Development



Visual Basic for Applications



Message Queues (e.g. Navision)

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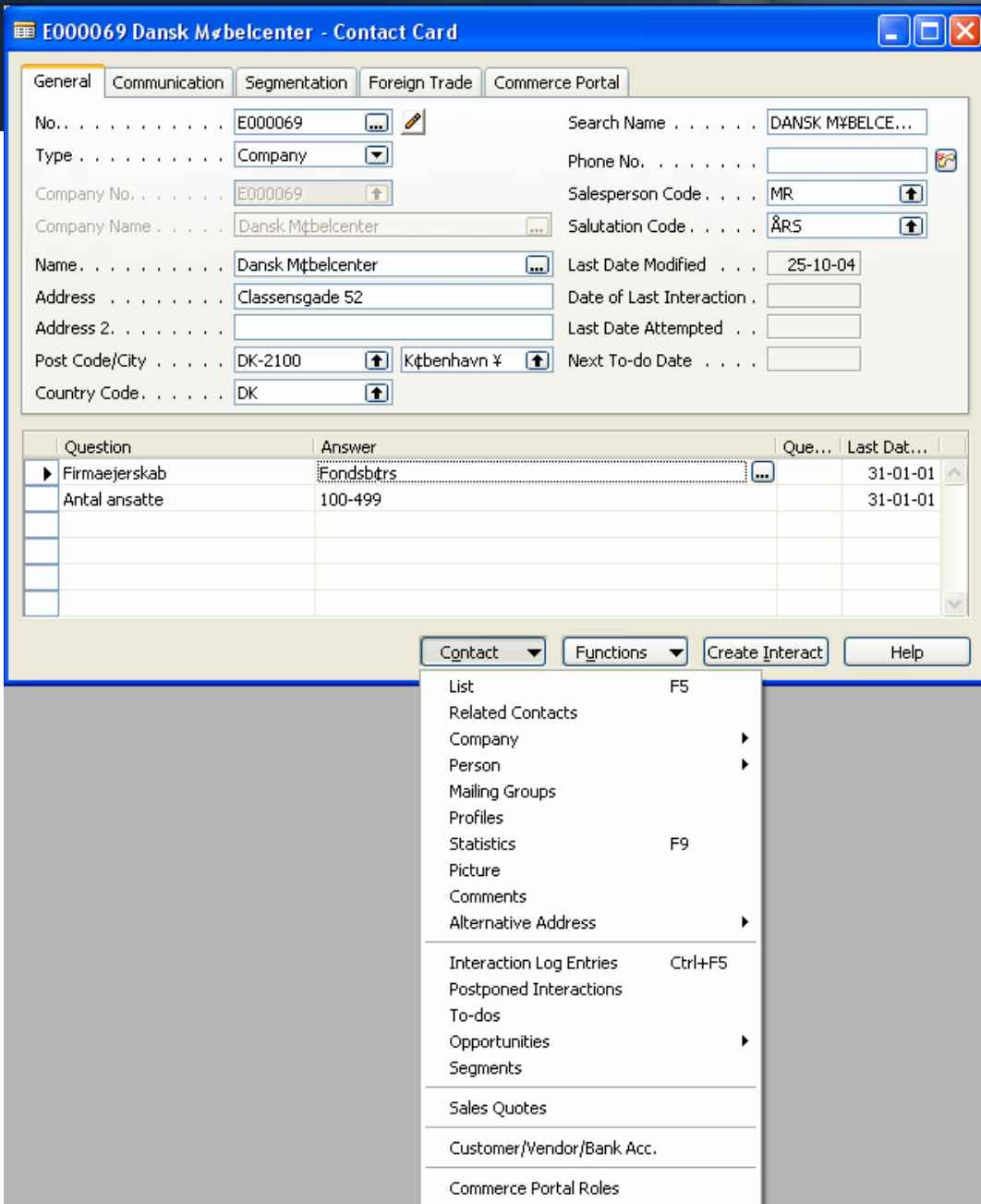
public Form1() { //
// Required for Windows Form Designer support //

InitializeComponent();

// // TODO: Add any constructor code after InitializeComponent call //
mqFromNavision.Formatter = new
System.Messaging.XmlMessageFormatter(new Type[]
{typeof(String)}); }

private void mqFromNavision_ReceiveCompleted(object sender,
System.Messaging.ReceiveCompletedEventArgs e) {
System.Messaging.Message m =
mqFromNavision.EndReceive(e.AsyncResult);
txtReceive.Text = (string)m.Body; }

```



Customer calling
Call center software identifies the number
The procedure at the call center site associated with sales telephones runs a procedure where a navision objects are embedded
A function for opening and looking up particular contact is implemented

Business And Database Tier Customizations

Set of business functions and rules

Language to create them, e.g. Enterprise Java Beans, Oracle Application Server procedures, Oracle stored procedures
APIs/SDKs to access database and business functions on the server

Automation technology to embed and use it in external programming environments and applications

Adding attributes/tables/triggers