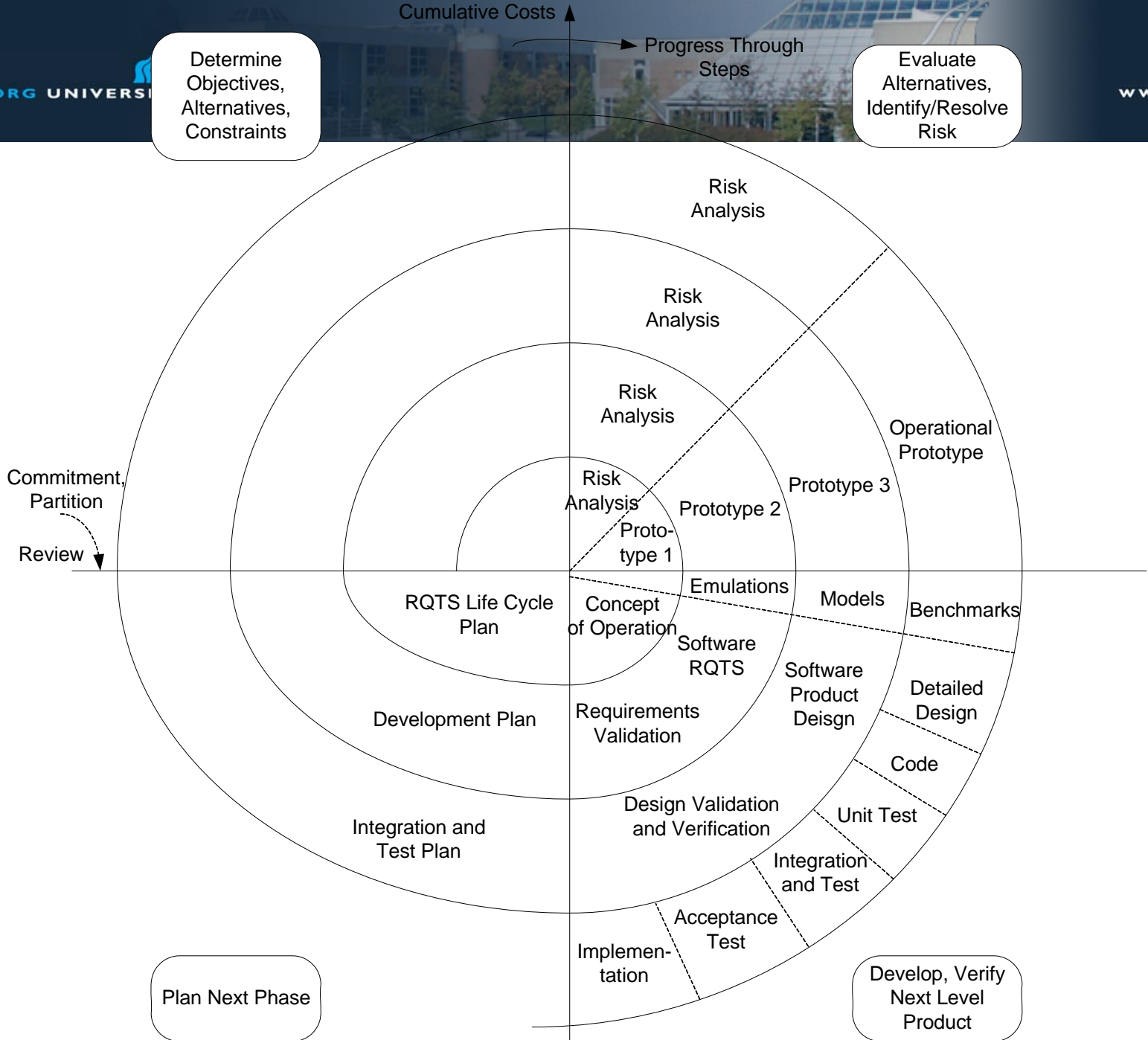


# ERP Course: Planning, Design, and Implementation of ERP

## Readings: Chapter 3 Mary Sumner

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# SD



# 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

|                                   | <b>Re-engineering</b>  | <b>Customizing</b>  |
|-----------------------------------|--|---|
| 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 ireas 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

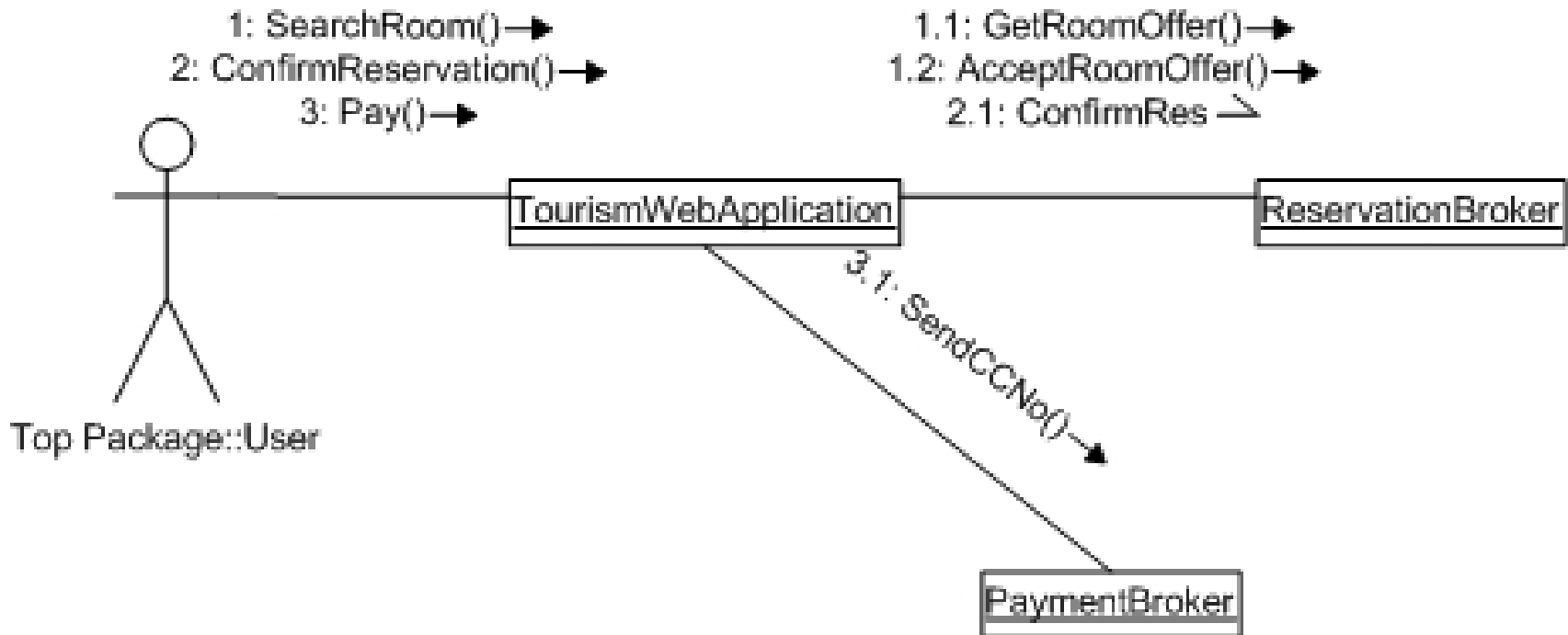
Integration with othe office systems

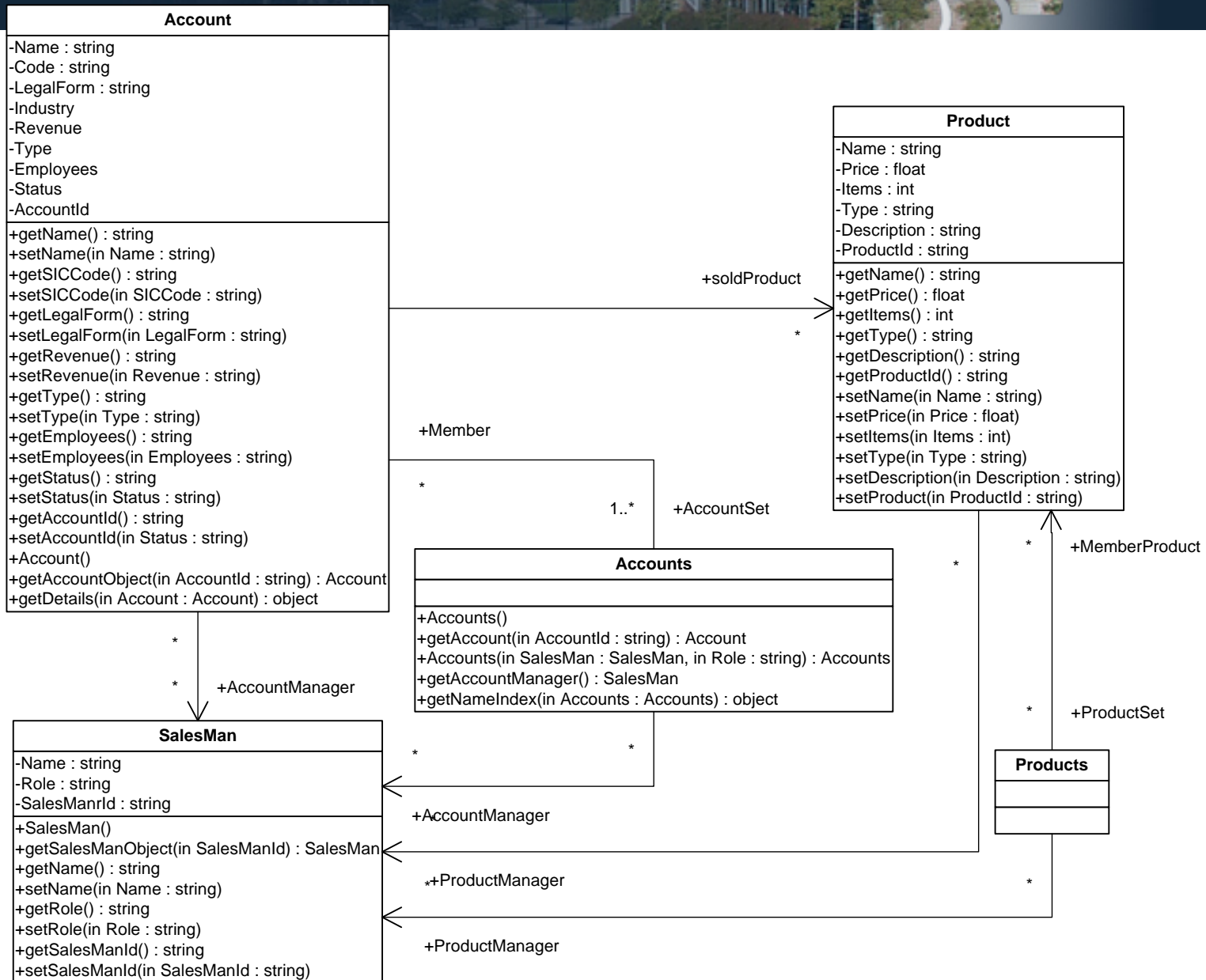
# Protocols/Activities



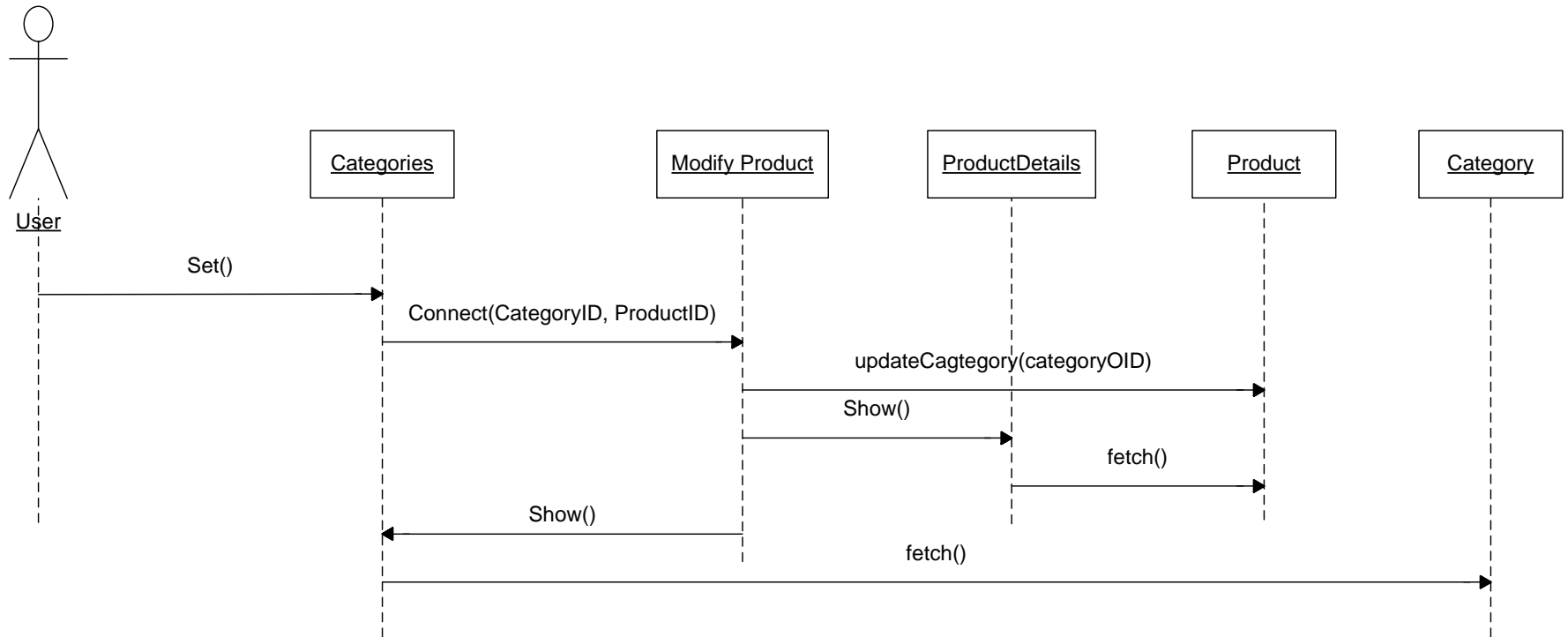


# Collabotation/Interaction Diagrams

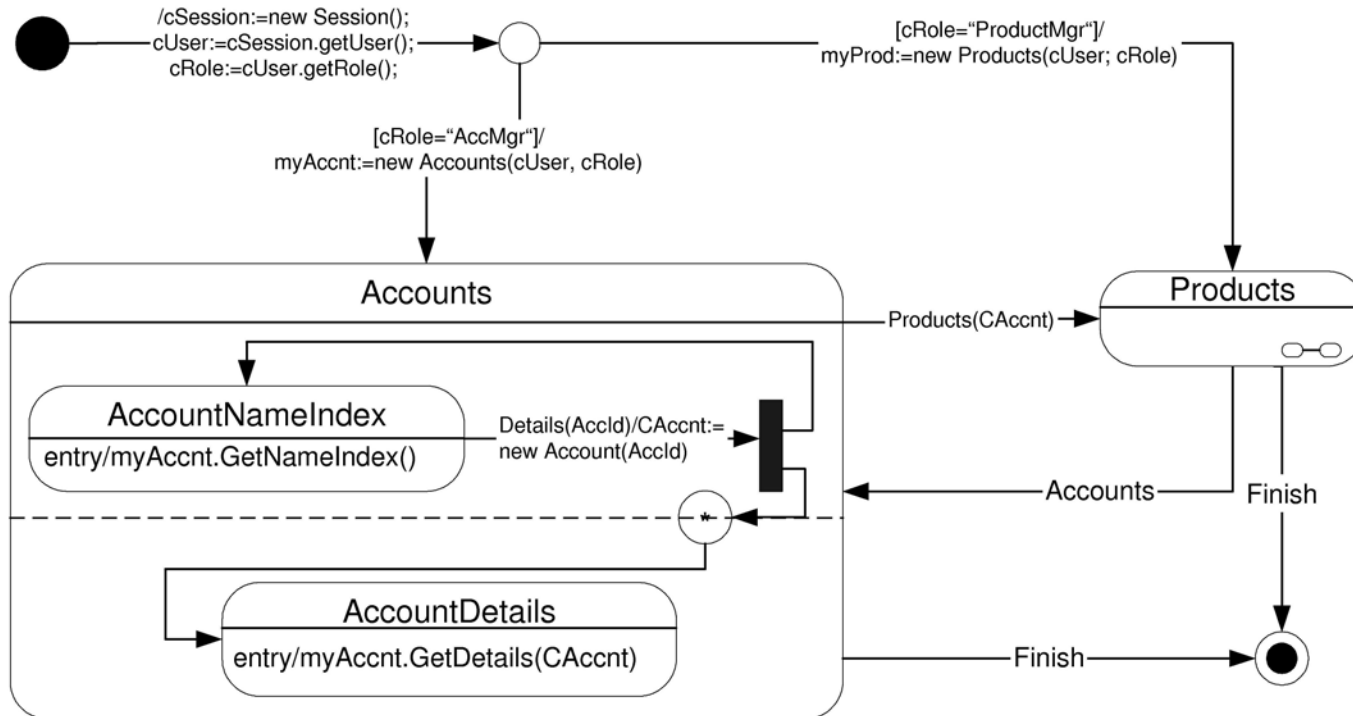


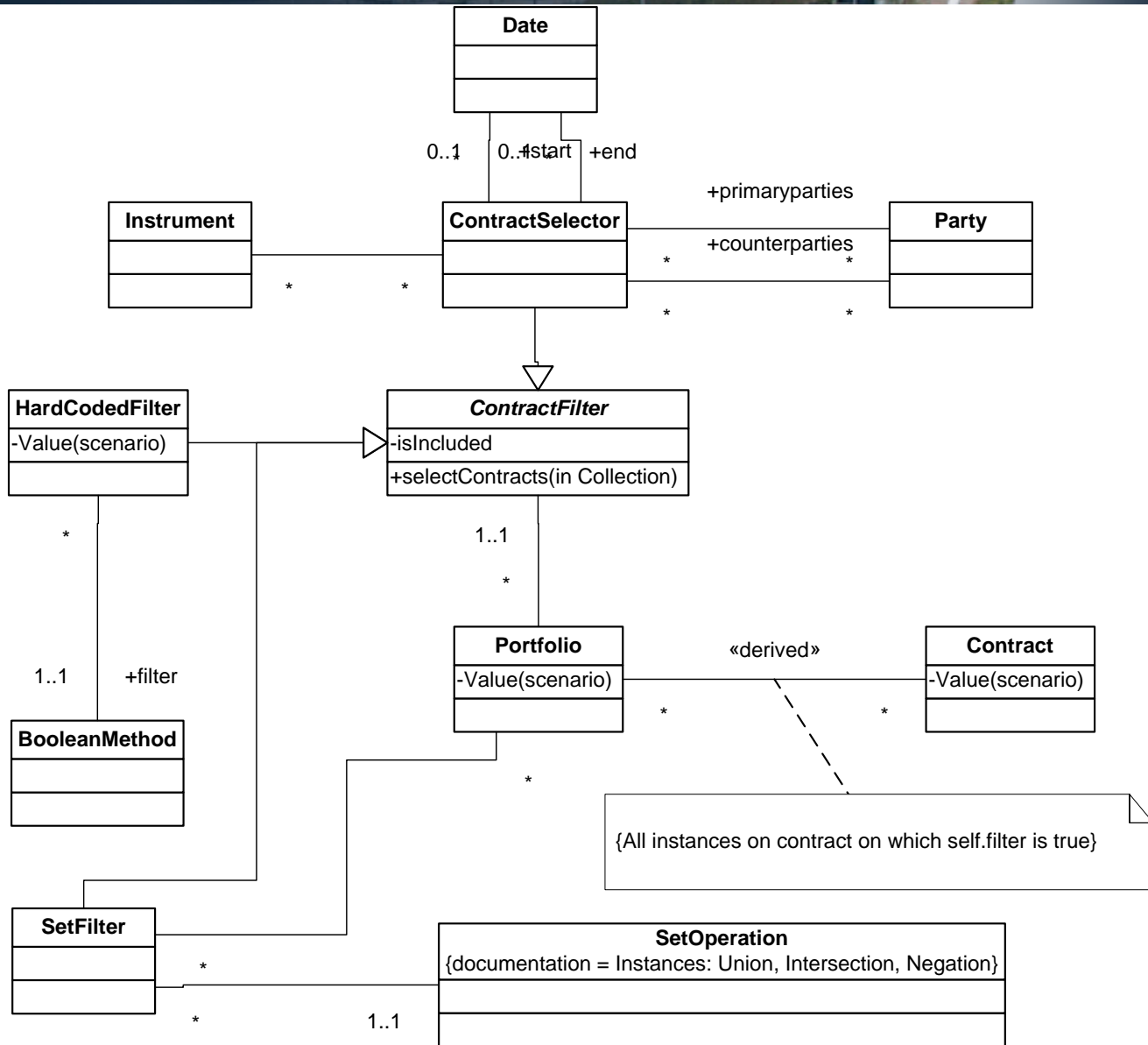


# Dialog Sequencing – clasify product



# Dialog Sequencing – user interaction





# Client Customization

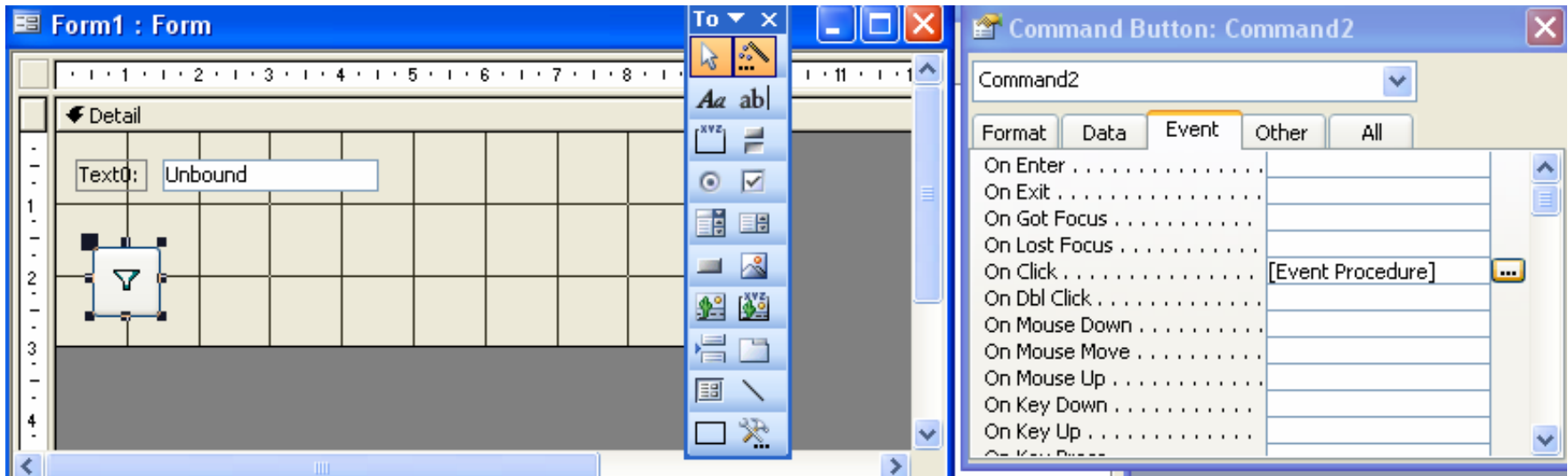
## 4G languages – forms

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

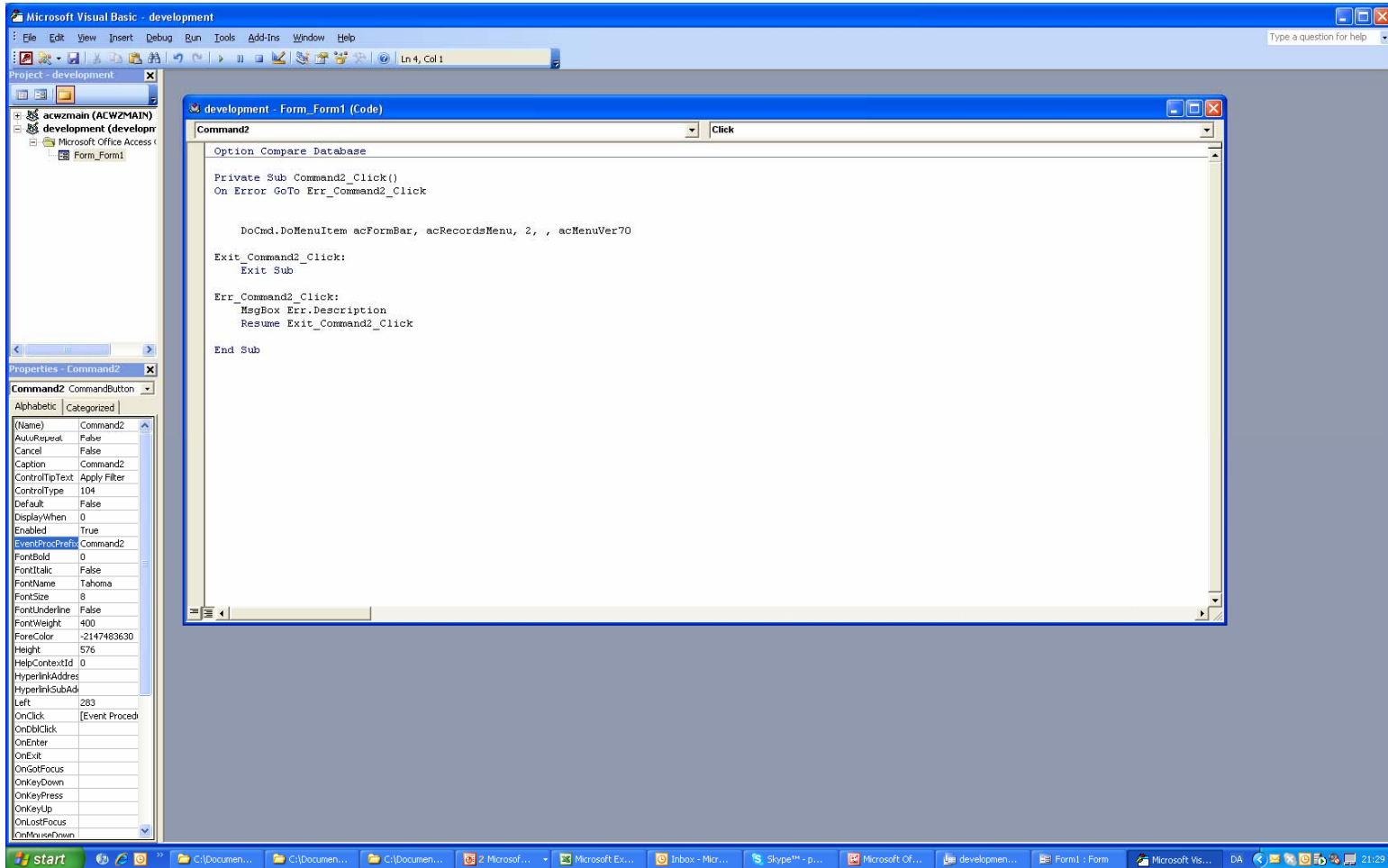
## Client APIs

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

# Forms Development



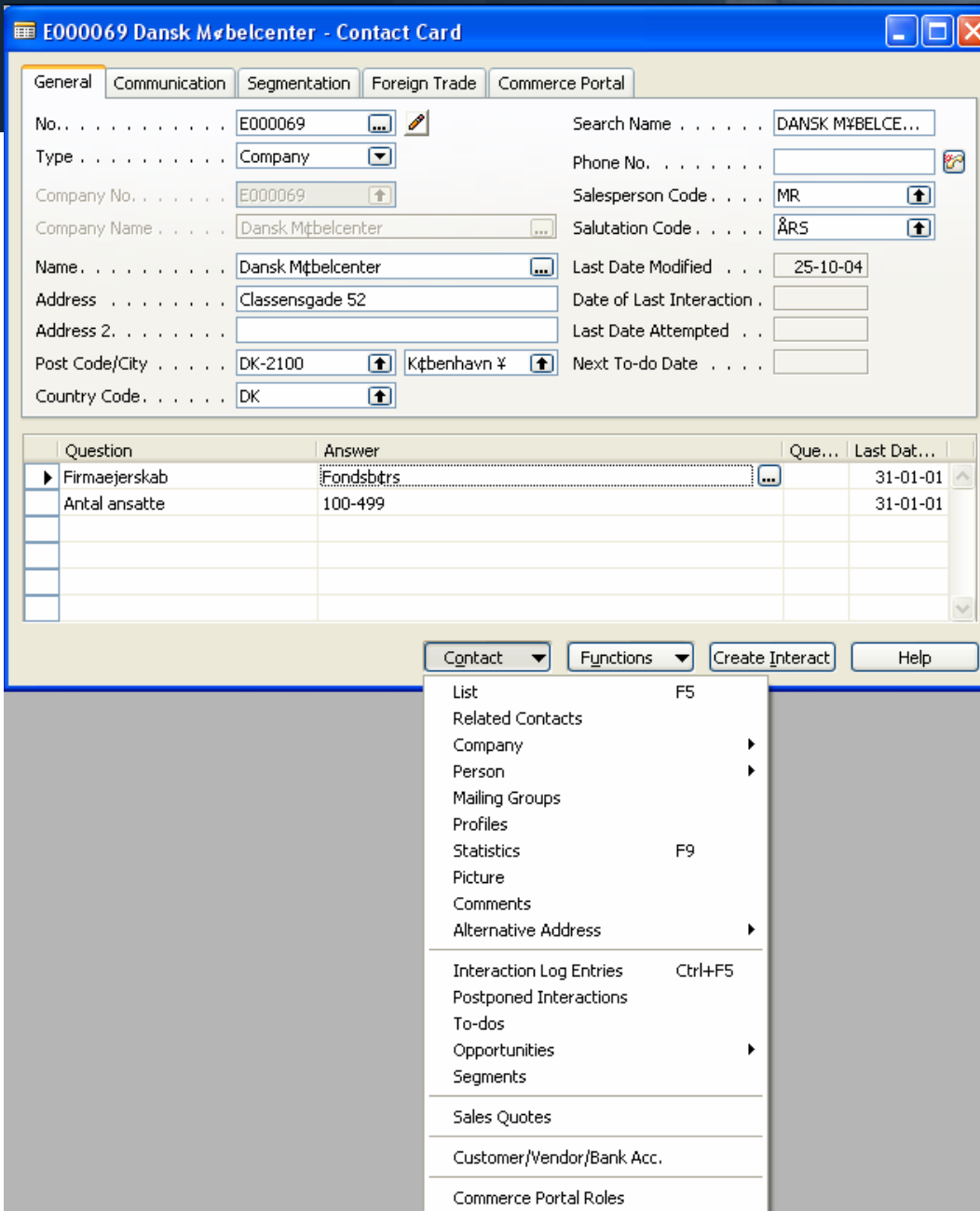
# Visual Basic for Applications





## Message Queues (e.g. Navision)

```
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 navigation 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