Building a Business with Cincom Smalltalk

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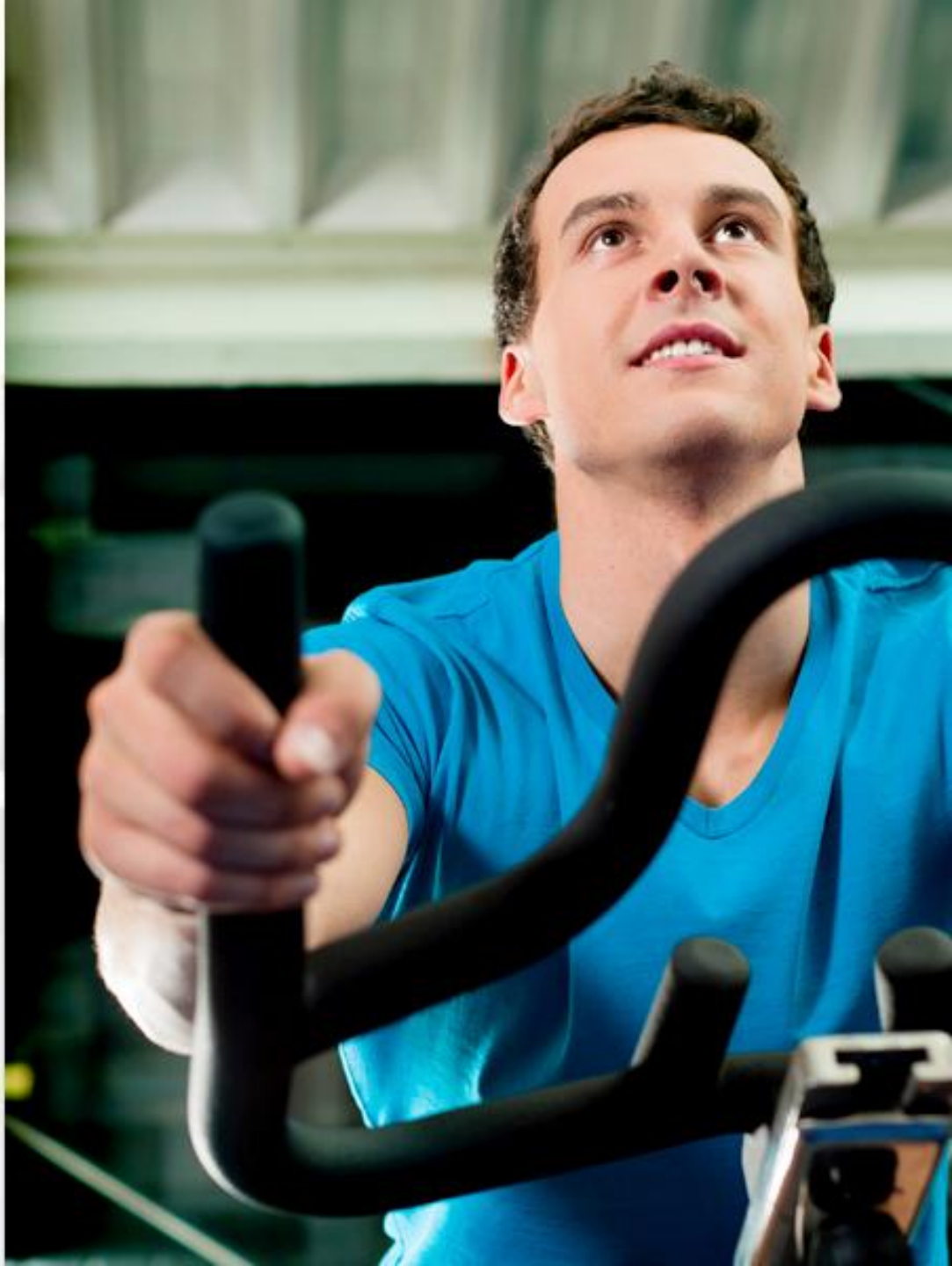


Cincom Talks

- **VisualWorks Memory Management**
  - by Andres Valloud
- **Building a Business with Cincom Smalltalk**
  - by Arden Thomas, Dirk Verleysen
- **Cincom News**
  - by Arden Thomas
- **Gimme Some Skin: A Way Forward for the VisualWorks Widget Set**
  - by Travis Griggs
- **Cincom Security: Reloaded**
  - by Martin Kobetic
- **Using GLORP with New Projects that Need to Access Legacy Data**
  - by Mark Grinnell & Andreas Hiltner

Some Other Talks

- **The Cairo Graphics Kit: Getting Modern Graphics for Familiar Tools**
  - by Chris Thormgrisson
- **Fluid Positioning in VisualWorks**
  - by David Buck
- **The Challenge of Building a Runtime**
  - by James Robertson

Objectives

1) Show you how to build software to support a real business
2) Show you how it is done using tools in ObjectStudio
3) Show you the end result after spending a little more time

- Design & Modeling w/Modeling Tool
- Code generation
- Bi-Directional development
- Object-Relational mapping & Database creation with the Mapping tool
- How to build Client interfaces
- Web Interface capability

The Cincom Smalltalk Arsenal

- **ObjectStudio**
  - *It's all about business!*
- **VisualWorks**
  - *Cross-platform, do everything!*

The Scenario

We have been brought in to solve a failed attempt to build software for a recently started business…

INNOVATION

The Scenario

A Health and Fitness Club!

- Exercise machines in a large open area
- Exercise classrooms for special classes
  - Spinning room
  - General class room with mats
  - Sound systems in each

Health Club
Basic Requirements

Needs a software system to track:

- Membership & member information
- Dues
- Member club attendance
- Guest attendance

Health Club
Basic Requirements

Club promotions:

- Monthly newsletter to members
- Happy birthday emails to members
- Emails and promotions to guests and potential customers

Health Club
Basic Requirements

Web Presence

- Class Schedule online
- Online check-in up to two hours prior to a class (in addition to traditional club check in)
- Basic information
  - Contact information (address, phone numbers, email)
  - Club hours

Health Club
Basic Requirements

Don’t forget!

- Employees must log in to software
- Regular backups
- The back up plan
- The Back up, back up plan!

Health Club – Starting Point

Salvageable:

- Database of current members

The Process – Methodology

ObjectStudio supports Methodologies like:

- Rumbaugh
- Coad/Yourdon
- Jacobson
- Wirfs Brock
- Fusion
- Free form

The Process

- Business Overview
  - 30,000 ft view
  - terminology
- Inventory
- Interview process
  - Understanding the business
  - Checklists and priorities
  - Details make all the difference!
  - Model, verify, rework, repeat

The Process

- Build Use Cases
- Discover
  - Actors
  - Domain Objects

Actors and Use Cases

- Actors
  - A person or thing that interacts with the system, usually external to it
- Use case
  - Describes how a specific actor interacts with the system
- Domain Objects

Actors and Use Cases

Actors

- Member
- Guest
- Employee
  - Front Desk (personnel)
  - Membership coordinator
  - Instructor
  - Trainer

- Use Cases
  - Sign up a new member
  - Sign up a guest
  - Member check-in / out
  - Guest check-in / out

Domain Objects

Domain Objects

- RFID tag
  - (barcode or RFID)
- Credit Card
- Equipment
- ExerciseRoom
- ExerciseClass

- Use Cases
  - Send monthly newsletter email

Domain Objects

Domain Objects

- MemberShip
- MemberShipPeriod
- MemberShipHold

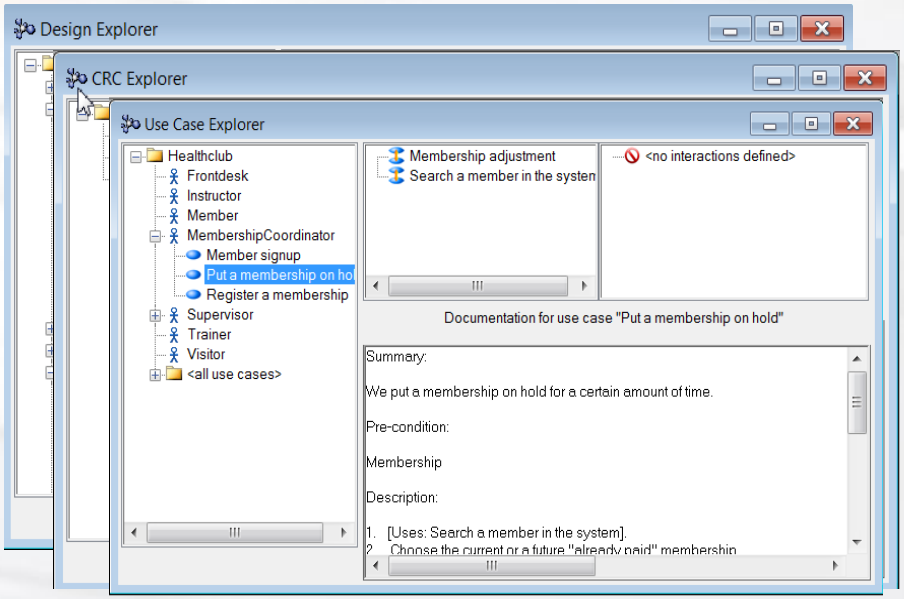
ObjectStudio

The "Business Analyst's Thinking Tool"

- Allows Analysts & Developers to work together
- Windows-centric, Windows 7 certified
- Powerful Object Modeling and Mapping
- Business architects use powerful bi-directional modeling tool to "blueprint" their systems design
- Code and Framework Generation, white box
- Round-Trip Engineering
- Developers use simple but powerful OR mapping tools integrate databases into applications
- Many Database and Communication Protocols supported
- Built on the Cincom Smalltalk foundation

ObjectStudio

- Explorers
  - Use Case Explorer
  - Design Explorer
  - CRC Explorer



Building the Business: Modeling

- Building out the Business Domain
  - with the Modeling tool
- Code Generation
  - Extending behavior
  - Bidirectional example

Mapping the Way

Three Scenarios for Object-Relational mapping:

1) Typical
   - Model
   - create Domain models
   - create tables
2) Automatic
   - Model
   - create Domain models
   - Map existing tables to Domain
3) Atypical
   - Create Domain from existing tables

Mapping the Way

Mapping Tool

Atlas Class Mapping

Atlas: SkipFit

Available Databases:

Schema:

Classes

- ObjectStudio.Keycard
- ObjectStudio.Member
  - id
  - username
  - timestamp
  - firstname
  - lastname
  - dateOfBirth
  - contactInfo
  - address
  - newsletter
  - membership
  - membershipStart
  - organizedHealthClass
  - memberId
  - status
  - memberAlert

Tables

- PRODUCTTYPE
- ALERTMESSAGE
- CREDITCARD
- PRODUCT
- EMPLOYEE
- DAYCHARGE
- MEMBERSHIPHOLD
- ADDRESS
- CLASSPARTICIPATION
- TRANSACTION
- EXERCISEROOM
- PERIOD
- MEMBERKEYCARD
- KEYCARD
- MEMBER
- TIMESTAMPPERIOD
- MEMBERSHIPPERIOD

Referenced Classes

Class
ObjectStudio.Address
ObjectStudio.CheckInOut
ObjectStudio.OrganizedHealthClass
ObjectStudio.Guest
ObjectStudio.MemberAlert
ObjectStudio.DayCharge
ObjectStudio.ContactInfo
ObjectStudio.MemberKeycard
ObjectStudio.CreditCard
ObjectStudio.Membership

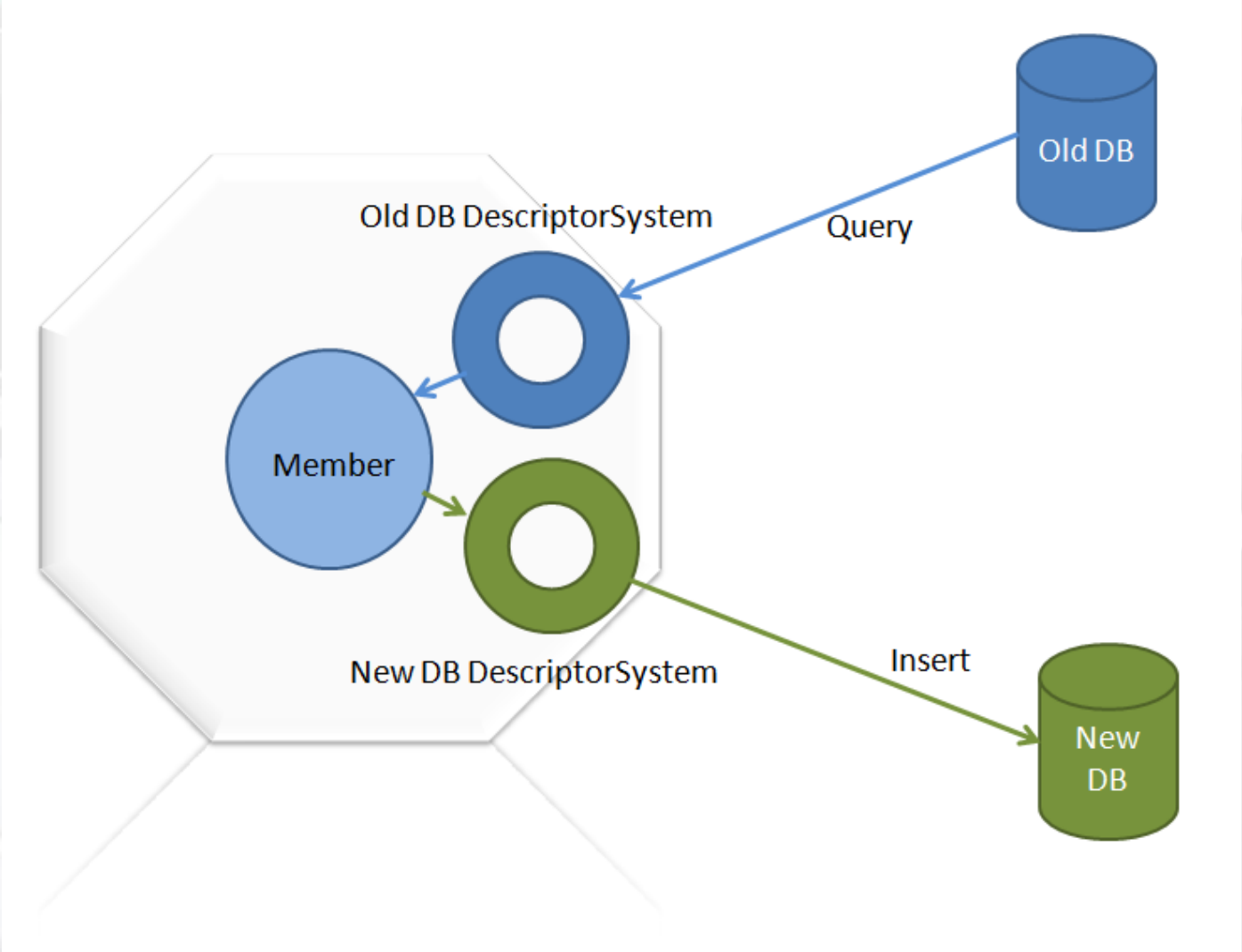
Mapping Info for ObjectStudio.Member

Attribute	Field
id	MEMBER.ID
username	MEMBER.USERNAME
timestamp	MEMBER.TIMESTAMP
firstname	MEMBER.FIRSTNAME
lastname	MEMBER.LASTNAME
dateOfBirth	MEMBER.DATEOFBIRTH
newsletter	MEMBER.NEWSLETTER
membershipStart	MEMBER.MEMBERSHIPSTART
memberId	MEMBER.MEMBERID
status	MEMBER.STATUS
membership	(MEMBER.ID = MEMBERSHIP.MEMBER)

Referenced Tables

Name	Fields
PRODUCT_PR_TO_PROD...	PRODUCTTYPE->PRC
PRODUCT_EX_TO_EXER...	EXERCISEROOM->EXE

Mapping the Way



Interfaces

Lots of options!

Three we will use in the club …

- Client Interface
- Web Browser Interface
- RFID Interface

Interfaces: Clients

Client Interface

- How do you build them?
- Demonstrate Client interfaces for the club

Interfaces: Web

Web Browser Interface

- Web Browser options?
- Web Browser interfaces we built for the club

Cincom Smalltalk™

Thank You!

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