

# A Browser Environment for Unlimited English Business Rules Over SQL

## A User Group Database and Application

*Adrian Walker*

*Reengineering*

Part 2 of 2 of a Presentation to the Albany Enterprise Modeling User Group, March 2nd 2004,  
based on “Designing a User Group Database Using Erwin and Access” by Frank Palmeri



***Please see also the more recent materials:***

<http://www.semantic-conference.com/program/sessions/S2.html>

[http://www.reengineeringllc.com/Internet\\_Business\\_Logic\\_e-Government\\_Presentation.pdf](http://www.reengineeringllc.com/Internet_Business_Logic_e-Government_Presentation.pdf)

[http://www.reengineeringllc.com/Oil\\_Industry\\_Supply\\_Chain\\_by\\_Kowalski\\_and\\_Walker.pdf](http://www.reengineeringllc.com/Oil_Industry_Supply_Chain_by_Kowalski_and_Walker.pdf)

<http://www.w3.org/2004/12/rules-ws/paper/19>

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# Part 2 Outline

## A User Group Database and Application

- English-like headings for Frank Palmeri's schema
- Sample data without SQL
- Application Rules for Using the Data
- Running the Application without SQL
- Loading the Sample Data into SQL
- Running the Application with Automatically Generated SQL
- Modeling Your Applications Using Networked Test Data
- Summary

# English-like headings for Frank Palmeri's schema

Meeting-Presentation

PresentationTitle

MeetingDateTime

-----

PersonID

PresentationComment

on this-date-time a presentation entitled this-title by this-personID is scheduled ( this-comment )

# English-like headings for Frank Palmeri's schema

Meeting-Location

MeetingDate

-----

Company

Location

the presentation on this-date is at this-organization location this-name

# English-like headings for Frank Palmeri's schema

Attendance

PersonID

MeetingDateTime

-----

MeetingRole

on this-date-time this-personID attended (or will attend) a meeting in the role of this-role

# English-like headings for Frank Palmeri's schema

Company-Location

Company Name

Location

-----

Room

Addr1

Addr2

City

State

Zip

Country

this-organization location this-name room this-room is at this-addr1 this-addr2  
in this-city this-state this-area this-country

# English-like headings for Frank Palmeri's schema

Person

PersonID

-----

Salutation

LastName

FirstName

MidInitial

Suffix

Title

LocID

EmailFlag

EmailPrimary

EmailSecondary

PhoneNumber

PhoneExtension

MobileNumber

FaxNumber

DateAdded

Comment

CompanyName

ID this-person-ID is this-salutation this-first-name this-initial this-last-name this-suffix  
who works for this-company

ID this-person-ID details : this-title this-locID this-emailflag this-email1 this-email2  
this-phone this-ext this-mobile this-fax this-date-added this-comment

# Sample data without SQL

on this-date-time a presentation entitled this-title by this-personID is scheduled ( this-comment )

```
=====
20040302-900      An Environment for Business Rules over SQL, Part 1      AW      Introductory
20040302-1000    Designing a User Group Database Using ERWIN              FP      Use case
20040302-1100    An Environment for Business Rules over SQL, Part 2      AW      Use case, continued
```

the presentation on this-date is at this-organization location this-name

```
=====
                20040302      New York State      Dept. of Tax & Finance
```

on this-date-time this-personID attended (or will attend) a meeting in the role of this-role

```
=====
20040302-900      MG      attendee
20040302-1000    MG      attendee
20040302-1100    MG      attendee
```



# Application Rules for Using the Data

on some-date-time a presentation entitled some-title by some-personID is scheduled ( some-comment )  
some-date followed by some-time separated by a symbol - = that-date-time  
the presentation on that-date is at some-organization location some-name  
that-organization location that-name room some-room is at some-addr1 some-addr2 in some-city some-state some-area some-country

---

on that-date a presentation is scheduled

some-date is a possible date for a presentation  
count some-personID : on that-date some-personID attended (or will attend) a meeting = a-number

---

on that-date that-number person(s) attended (or will attend) a meeting

a person with ID some-person-ID is in the AEMUG database  
some-date is a possible date for a presentation  
some-time is a possible time of day for a presentation  
that-date followed by that-time separated by a symbol - = some-date-time  
add : on that-date-time a presentation entitled some-title by that-person-ID is scheduled ( some-comment )

---

ADD a scheduled presentation entitled that-title by that-person-ID on that-date at that-time with comment that-comment

# Application Rules for Using the Data

```
on some-date-time a presentation entitled some-title by some-personID is scheduled ( some-comment )
some-date followed by some-time separated by a symbol - = that-date-time
the presentation on that-date is at some-organization location some-name
that-organization location that-name room some-room is at some-addr1 some-addr2 in some-city some-state some-area some-country
-----
on that-date a presentation is scheduled
```

```
a person with ID some-person-ID is in the AEMUG database
some-date is a possible date for a presentation
some-time is a possible time of day for a presentation
that-date followed by that-time separated by a symbol - = some-date-time
add : on that-date-time a presentation entitled some-title by that-person-ID is scheduled ( some-comment )
-----
ADD a scheduled presentation entitled that-title by that-person-ID on that-date at that-time with comment that-comment
```

```
on some-date-time some-personID attended (or will attend) a meeting in the role of some-role
some-date followed by some-time separated by a symbol - = that-date-time
-----
on that-date that-personID attended (or will attend) a meeting
```

```
some-date is a possible date for a presentation
count some-personID : on that-date some-personID attended (or will attend) a meeting = a-number
-----
on that-date that-number person(s) attended (or will attend) a meeting
```

# Running the Application without SQL

(User)

*AlbanyGroup1 Question Menu*

Help

Select a Question to Ask ▼

*Type a question here, then press Enter to reorder the menu*

*or select a question from the menu below:*

on some-date a presentation is scheduled

on some-date some-number person(s) attended (or will attend) a meeting

ID some-person-ID name some-first-name some-last-name has some-number some-attribute some-value

ADD a scheduled presentation entitled some-title by some-person-ID on some-date at some-time with comment some-comment

# Running the Application without SQL (Author)

## *AlbanyGroup1 Question Menu*

Help

Select a Question to Ask

*Type a question here, then press Enter to reorder the menu*

*or select a question from the menu below:*

on some-date a presentation is scheduled

on some-date some-number person(s) attended (or will attend) a meeting

ID some-person-ID name some-first-name some-last-name has some-number some-attribute some-value

ADD a scheduled presentation entitled some-title by some-person-ID on some-date at some-time with comment some-comment

a person with ID some-person-ID is in the AEMUG database

on some-date some-personID attended (or will attend) a meeting

on some-date-time some-personID attended (or will attend) a meeting in the role of some-role

the presentation on some-date is at some-organization location some-name

some-organization location some-name room some-room is at some-addr1 some-addr2 in some-city some-state some-area some-country

some-date is a possible date for a presentation

some-time is a possible time of day for a presentation

ID some-person-ID details : some-title some-locID some-emailflag some-email1 some-email2 some-phone some-ext some-mobile some-fax  
some-date-added some-comment

ID some-person-ID is some-salutation some-first-name some-initial some-last-name some-suffix who works for some-company

on some-date-time a presentation entitled some-title by some-personID is scheduled ( some-comment )

# Running the Application without SQL

The screenshot shows a web browser window titled "Question - Mozilla" with a light blue background. The text "on some-date a presentation is scheduled" is entered into a text field, and an "Ask" button is visible to its right. The browser window is overlaid on a larger application window titled "AlbanyGroup1 Question Menu". This application window has a "Help" button and a dropdown menu labeled "Select a Question to Ask". Below the browser window, the text "menu" is displayed in a red, italicized font. At the bottom of the application window, there is a list of questions in blue text, starting with "or select a question from the menu below:".

AlbanyGroup1 Question Menu

Help Select a Question to Ask

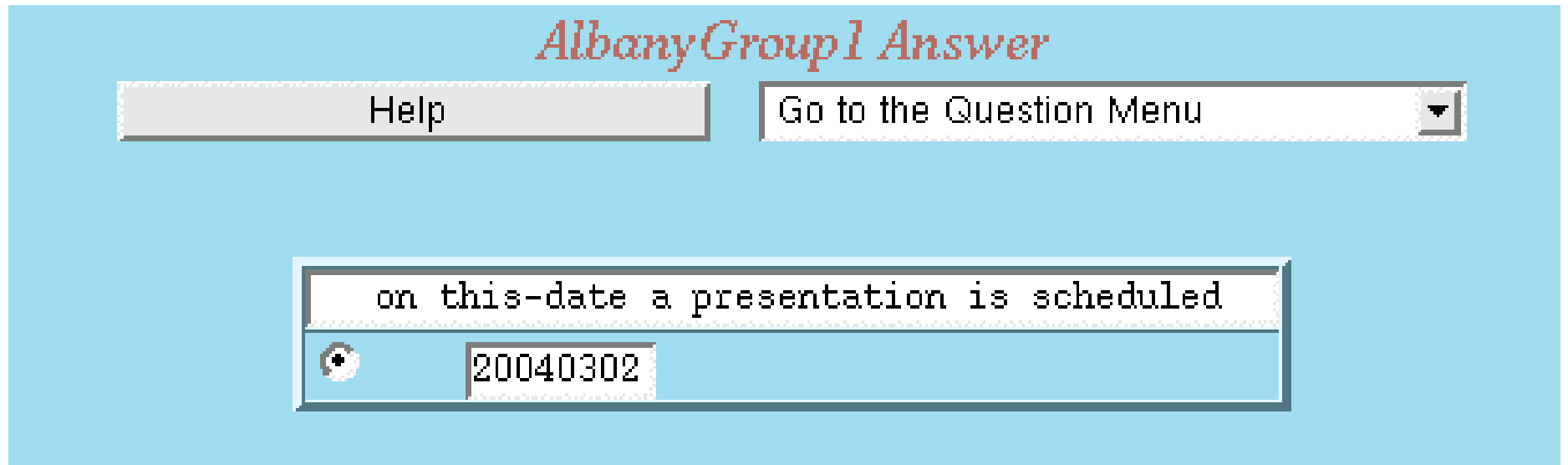
on some-date a presentation is scheduled Ask

menu

or select a question from the menu below:

- on some-date a presentation is scheduled
- on some-date some-number person(s) attended (or will attend) a meeting
- ID some-person-ID name some-first-name some-last-name has some-number some-attribute some-value
- ADD a scheduled presentation entitled some-title by some-person-ID on some-date at some-time with comment some-comment

# Running the Application without SQL



# Running the Application without SQL

## *AlbanyGroup1 Explanation*

Help

Go to the Answer Page

on 20040302-900 a presentation entitled An Environment for Business Rules over SQL, Part 1 by AW is scheduled ( Introductory )  
20040302 followed by 900 separated by a symbol - = 20040302-900  
the presentation on 20040302 is at New York State location Dept. of Tax & Finance  
New York State location Dept. of Tax & Finance room 5 is at 299 Old Niskayuna Road in Latham NY 12110 USA

---

on 20040302 a presentation is scheduled

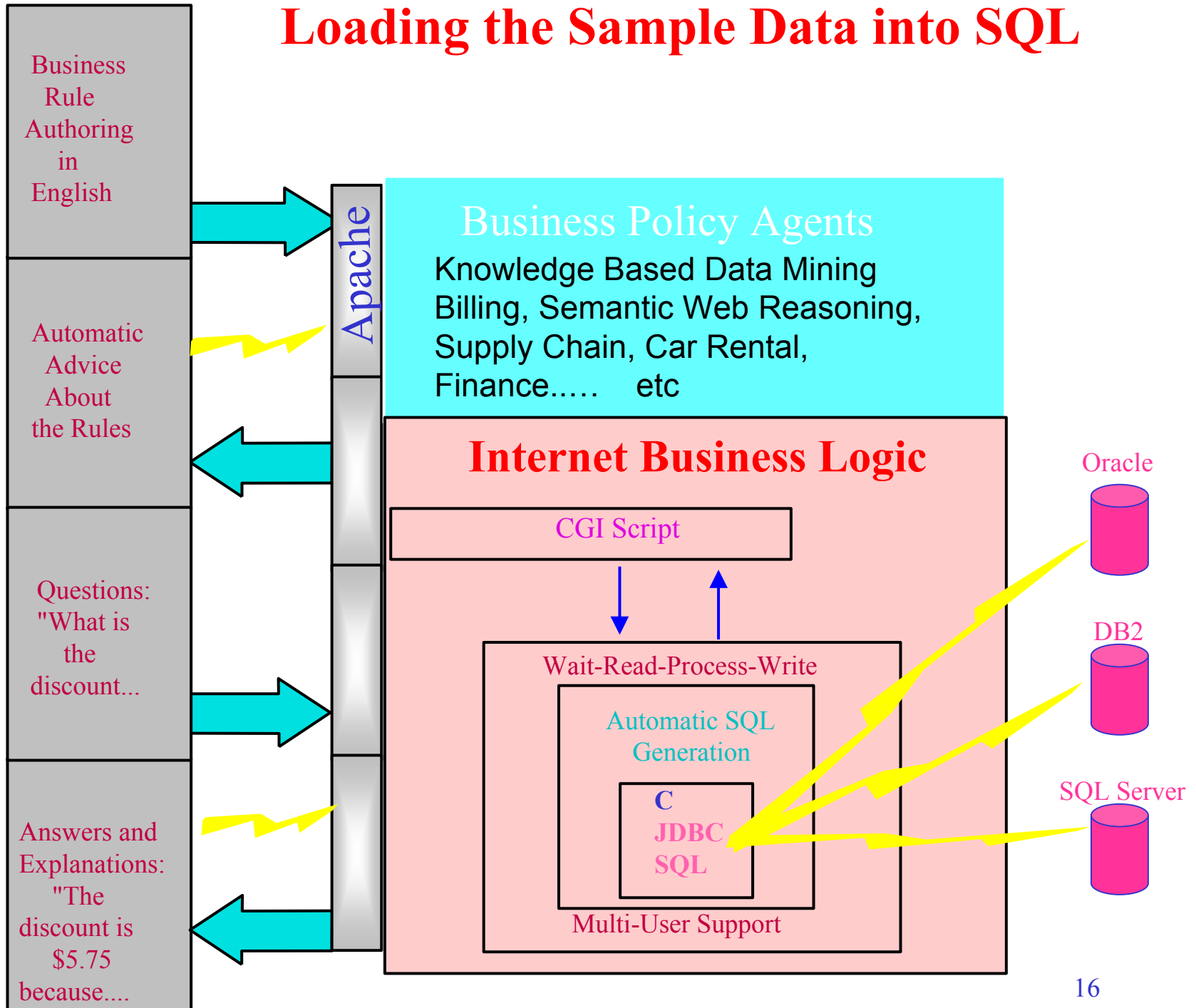
# Loading the Sample Data into SQL



Business Manager  
Has IBL  
*author* permission



Customer  
Has IBL  
*user* permission





# Loading the Sample Data into SQL

Linking rules replace the non-SQL tables:

url:12.345.6.789 dbms:mysql dbname:ibldb tablename:ALBANY1 port:1521 id:anon password:gates

---

on some-date-time a presentation entitled some-title by some-personID is scheduled ( some-comment )

.....

url:12.345.6.789 dbms:mysql dbname:ibldb tablename:ALBANY8 port:1521 id:anon password:gates

---

some-date is a possible date for a presentation

# Loading the Sample Data into SQL

The linking rules can be used in generating “CREATE TABLE” statements:

on this-date-time a presentation entitled this-title by this-personID is scheduled ( this-comment )

```
CREATE TABLE ALBANY1 ( DATETIME VARCHAR(14), TITLE VARCHAR(256), PERSID  
VARCHAR(10), ACOMMENT VARCHAR(512) );
```

.....

this-date is a possible date for a presentation

```
CREATE TABLE ALBANY8 ( ADATE SMALLINT );
```

# Loading the Sample Data into SQL

*AlbanyGroupSql1 Answer* (3 rows found)

Help

Make these Changes to the Agent Data ▾

LOAD : on this-date-time a presentation entitled this-title by this-personID is scheduled ( this-comment )					
<input checked="" type="radio"/>	20040302-1000		Designing a User Group Database Using ERWIN	FP	Use case
<input type="radio"/>	20040302-1100		An Environment for Business Rules over SQL, Part 2	AW	Use case, continued
<input type="radio"/>	20040302-900		An Environment for Business Rules over SQL, Part 1	AW	Introductory

*AlbanyGroupSql1 Answer*

Help

Make these Changes to the Agent Data ▾

LOAD the presentation on this-date is at this-organization location this-name					
<input checked="" type="radio"/>	20040302		New York State		Dept. of Tax & Finance

# Running the Application with Automatically Generated SQL

The screenshot shows a web application titled "AlbanyGroup1 Question Menu". At the top, there is a "Help" button and a dropdown menu labeled "Select a Question to Ask". Below this is a light blue text input field containing the text "on some-date a presentation is scheduled" and an "Ask" button. A horizontal line labeled "menu" separates the input area from a list of pre-generated questions. The list includes:

- on some-date a presentation is scheduled
- on some-date some-number person(s) attended (or will attend) a meeting
- ID some-person-ID name some-first-name some-last-name has some-number some-attribute some-value
- ADD a scheduled presentation entitled some-title by some-person-ID on some-date at some-time with comment some-comment

# Running the Application with Automatically Generated SQL

on some-date-time a presentation entitled some-title by some-personID is scheduled ( some-comment )

some-date followed by some-time separated by a symbol - = that-date-time

the presentation on that-date is at some-organization location some-name

that-organization location that-name room some-room is at some-addr1 some-addr2 in some-city some-state some-area some-country

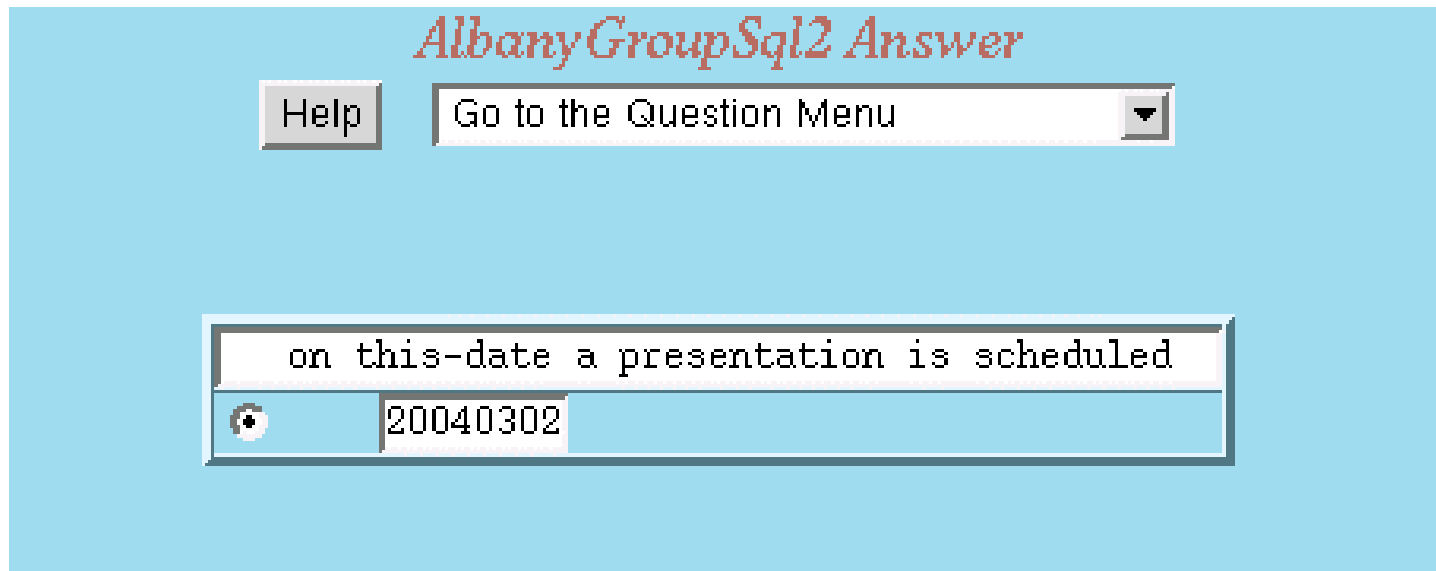
---

on that-date a presentation is scheduled

```
SELECT ALBANY1.DATETIME from ALBANY1
        order by ALBANY1.DATETIME ;
```

```
SELECT ALBANY2.ADATE from ALBANY2,ALBANY4
where ALBANY2.ORG=ALBANY4.ORG
and ALBANY2.LOC=ALBANY4.LOC
and ALBANY2.ADATE=20040302
        order by ALBANY2.ADATE
```

# Running the Application with Automatically Generated SQL



# We Are Interested in Modeling Your Applications Using Your Networked Data

- The model is self-documenting, including English explanations
- The model can be run as a reference implementation
- We can export generated SQL statements from the model
- We can model applications in your organization, such as...
  - **Data cleaning** -- Please see the DataAssurance1 demo
  - **Knowledge based data mining** -- MedMine demo
  - **Flexible report generation** -- TestMachineRequirements demo
  - **Ontology and Semantic Web reasoning** -- SemanticResolution1 demo
  - **Database security with rapid key changes** -- SemanticEncoding1 demo

# We Are Interested in Modeling Your Applications Using Your Networked Data

- Small samples of data are fine for modeling functionality
- Data should be nonconfidential and/or sanitized
- Access through firewall or data download.
  - We have a Thawte certificate
- DBMS permissions ideally allow transactions, but could be query-only
- Oracle listener or similar running on your server
- Internet Business Logic uses JDBC to drive the listener

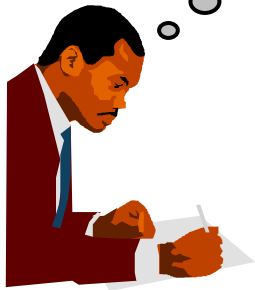


# Summary: How things (sort of) work now

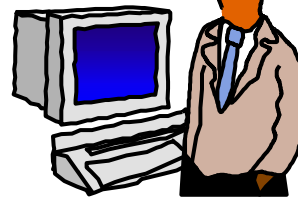
I require A1, B1 and C1...  
(Profit margin, accounts receivable, liquidity, hedge)

OK, he needs A2, B2 and C2.  
(Enterprise model, cgi script, java bean, middleware, SAP)

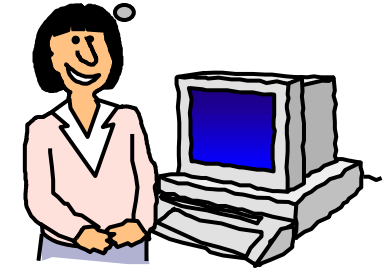
Aha, he needs A3, B3 and C3..  
(Perl, C++, Java, XML, HTML, SQL, Unix, X-Windows)



Business Manager



Architect

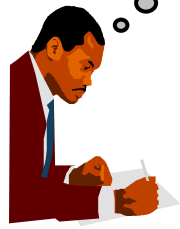


Programmer

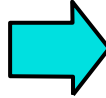
Here are some things the software can do.  
Maybe they are related to A1, B1, and C1 ?

# Summary: How things can work better

I require A1, B1 and C1...  
(Profit margin, accounts..)



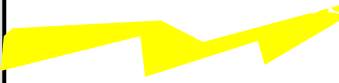
Business Manager



Writes Business Rules in English Directly into the Browser

Runs the Rules Using the Browser

Sees English explanations of the Results



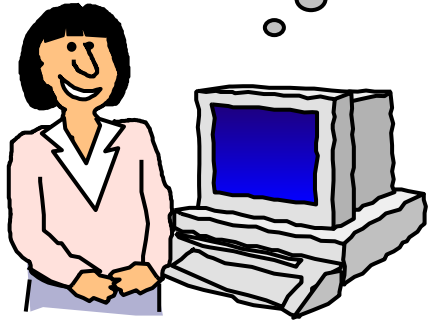
Internet Business Logic

Application Independent

*Application independent results are built into Internet Business Logic*



Theory of Declarative Knowledge



Programmer

# Summary -- Part 1

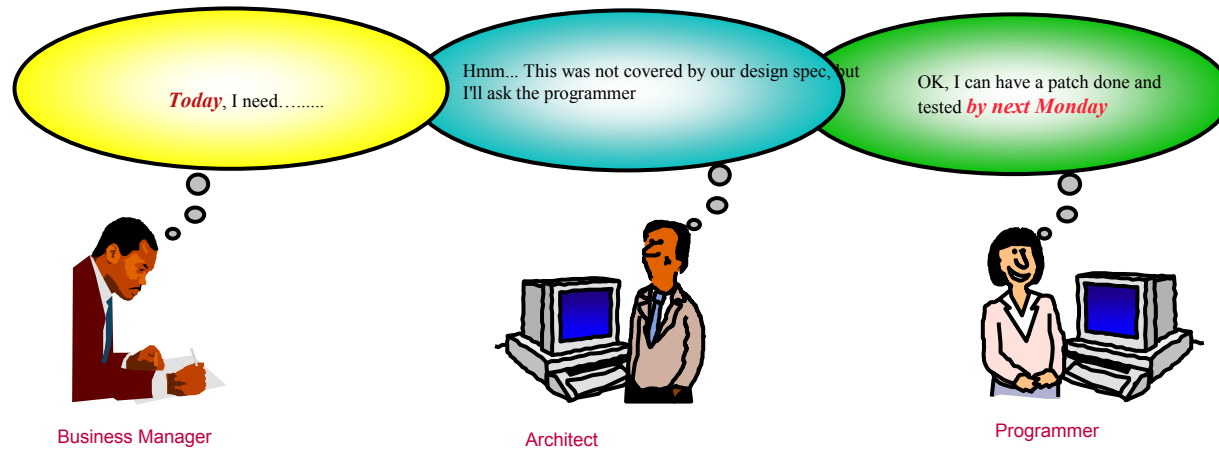
- The Problem: software late & over budget
  - Requirements change fast
  - Knowledge is locked up in software
  - Integrating diverse applications and organizations
- Towards a Solution -- What not How
  - Write business rules in English, directly into a browser
  - Run the rules using the browser
  - Get English explanations of the results
- Underlying Theory
  - Theory of declarative knowledge
  - Highly declarative interpretation, proven correct
  - Direct English specification
- The Internet Business Logic System
  - online at [www.reengineeringllc.com](http://www.reengineeringllc.com)

# Summary -- Part 2

- English-like headings for Frank Palmeri's schema
- Sample data without SQL
- Application Rules for Using the Data
- Running the Application without SQL
- Loading the Sample Data into SQL
- Running the Application with Automatically Generated SQL

# Summary

Figure out *How*



Internet Business Logic is online at [www.reengineeringllc.com](http://www.reengineeringllc.com)

Specify *What*

