

Welcome

To Advance through Presentation
Use Page Up and Page Down Keys



99 | Worldwide
Developers
Conference



99 | Worldwide
Developers
Conference

WebObjects for Mac Web Developers

Tim Joransen

Systems Engineer

Apple Enterprise Software

WebObjects for Mac Web Developers



- WebObjects Overview
- WebObjects Features
- Example
Development



WebObjects...

The flexible, scalable way to
develop and deploy
network applications



WebObjects Overview

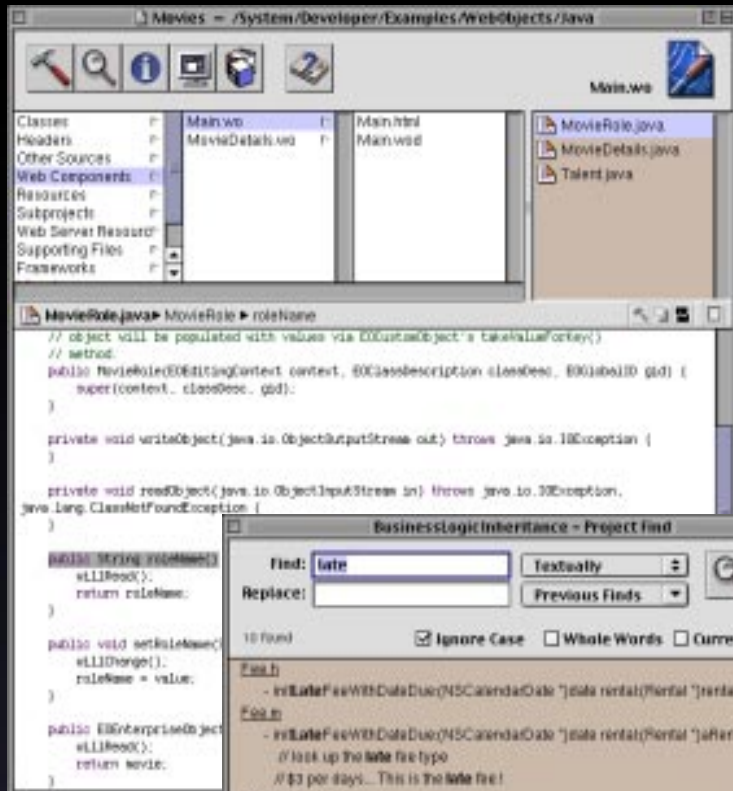
- Application Server
- Full Suite of Graphical Tools
- Cross Platform and Open



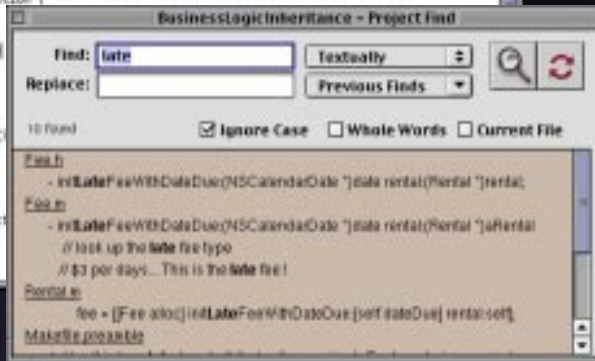
The Big Picture



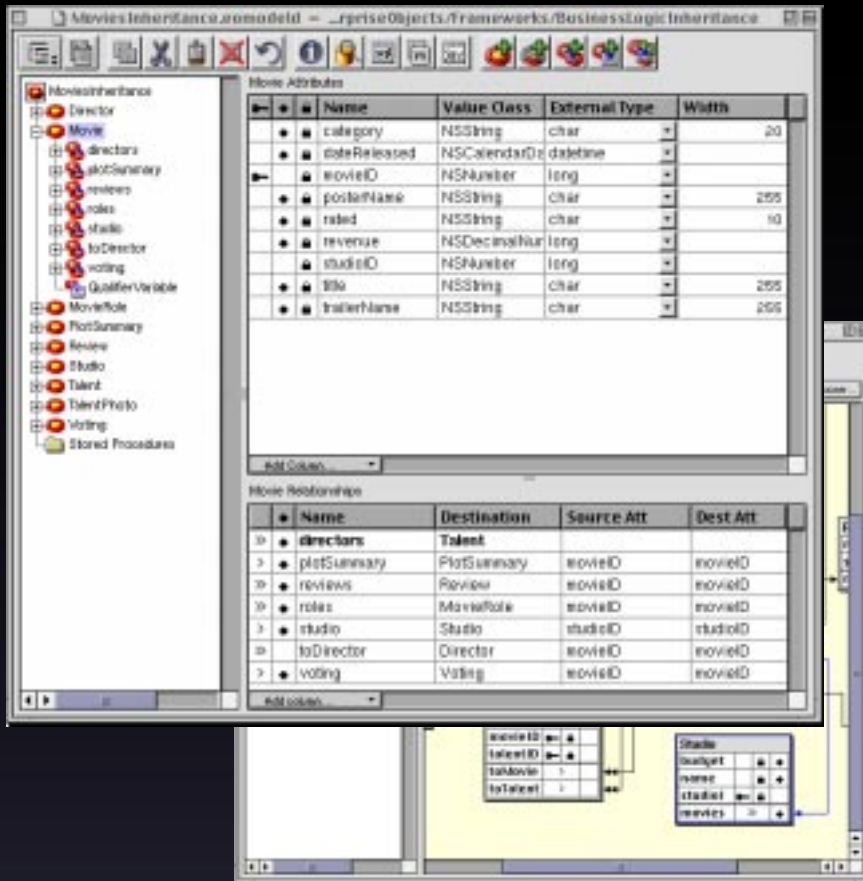
Project Builder



- Manages all files
- Integrated text editor
- Builds the project
- Integrated Java and Objective-C debuggers
- Localization support
- Object browser



EOModeler



- Reads a database schema
- Maps schema to object model
- Converts models to different databases
- Visual query builder
- Shows E-R diagrams





99 | Worldwide
Developers
Conference

Demo

Create a Data Model

EOModeler



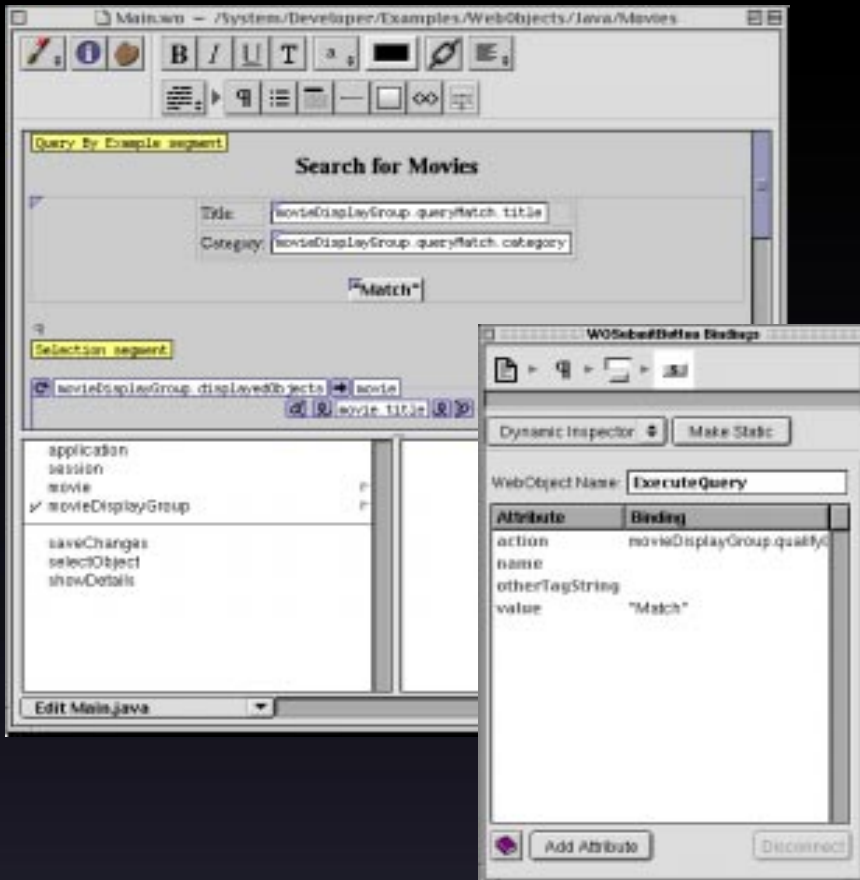
99 | Worldwide
Developers
Conference

Demo

Create an
Administrative Application

Project Builder
Direct to Web

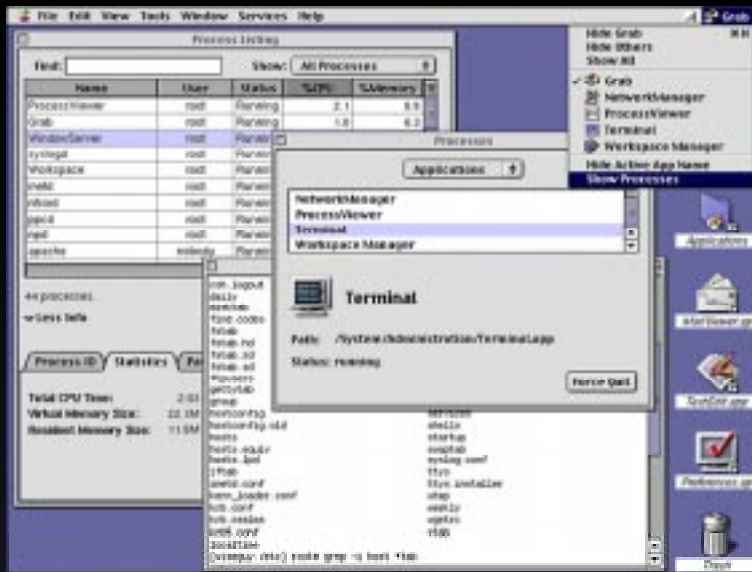
WebObjects Builder



- HTML component editor
- Direct variable bindings
- Raw and WYSIWYG mode
- Support for frames
- Undo/redo
- HTML preservation



Mac OS X Server



- WebObjects apps can be developed and deployed using Apple's new, modern server operating system
- Also, development and deployment on Windows NT, plus deployment on Solaris and HP/UX



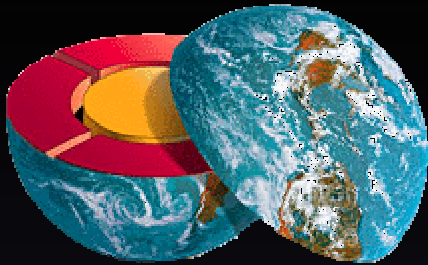
WebObjects Features

- Object Oriented
- Application Oriented
- Unique Data Access Solution
(Persistent Objects)
- Proven Scalability



Fully Object Oriented

- Makes applications...
 - ...more intuitive to design
 - ...faster to develop
 - ...more amenable to modifications
 - ...easier to understand



- WebObjects frameworks facilitate code reuse across applications
- Subclasses, delegates, and categories provide low-level control capability



Application Oriented

- WebObjects is focused on applications

Application

Page

One binary per Application

One “server”

Compiled code

Typically Interpreted

Subcomponents

“Includes”

Powerful Reuse

Limited Reuse

No code in HTML

Code embedded in HTML

Dynamic Applications

Dynamic Pages



Application Variables and Methods

- Declared in the application object
- If public, can be accessed by any session and any component

```
public class Application extends WOApplication {  
    public int totalUsers;  
  
    public Application() {  
        super();  
        System.out.println("Welcome to " + this.name() + " !");  
    }  
}
```



Session Variables and Methods

- Declared in the session object
- If public, can be accessed by any component when handling a request from that session

```
public class Session extends WOSession {  
    protected Customer customer;  
  
    public Customer customer() {  
        return customer;  
    }  
  
    public void setCustomer(Customer newCustomer) {  
        customer = newCustomer;  
    }  
}
```



Session Management

- Sessions are automatically created and identified, using encrypted URLs or cookies
- State can be stored in server RAM (default), in hidden form fields, or externally



Component Variables and Methods

- Declared in the component object
- Variable value persistence is limited to the lifetime of the component instance

```
public class Payments extends WComponent {  
    protected Payment payment;  
  
    boolean hasPayments() {  
        return ((Session)session()).customer().payments().count() > 0;  
    }  
}
```



Unique Data Access

- Persistent Object Services
- Database Vendor Independent
- Database Schema Independent
- Business Logic “Tier”
- Program with Objects not SQL



Enterprise Objects

- An Enterprise Object (EO) has both data and business logic
- The Enterprise Objects Framework (EOF) is a collection of classes and tools that allow you to get your EO's into and out of a relational database



Fetching Enterprise Objects

- To fetch objects from the database, use “Fetch Specifications” creating them programmatically, or visually in EOModeler

```
// assume a dictionary of query parameters (bindings)  
NSArray matchingEmployees;
```

```
matchingEmployees =  
    EOUtilities.objectsWithFetchSpecificationandBindings(  
        session().defaultEditingContext(),  
        “ManagerQuery”, “Employee”,  
        dictionaryOfBindings);
```



Saving Enterprise Objects

- The EOEditingContext class manages fetching, modifying, and saving Enterprise Objects

```
session().defaultEditingContext().deleteObject(payment);  
session().defaultEditingContext().saveChanges();
```

- The editing context supports transactions, allowing unsaved changes to be rolled back


```
session().defaultEditingContext().deleteObject(payment);  
session().defaultEditingContext().revert();
```



Traversing Relationships

- Relationships between entities in the database are mapped as methods on the EO's (which return other EO's)

In WebObjects Builder:



WebObject Name: **Repetition1**

Attribute	Binding
count	
identifier	
index	
item	payment
list	session.customer.payments

In code:

```
if (!customer.payments().containsObject(payment))  
    customer.addObjectToBothSidesOfRelationshipWithKey(  
        payment, "payments");
```





99 | Worldwide
Developers
Conference

Demo

Build an Application,
Adding a Prewritten
“Framework” of Components

Project Builder



99 | Worldwide
Developers
Conference

Demo

Build a Registration Page

WebObjects Builder

Proven Scalability

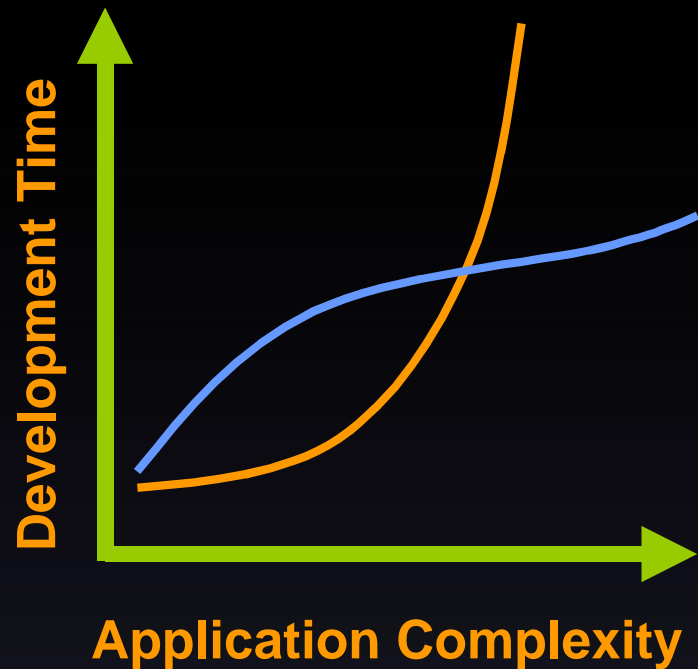
- Load-balancing and multithreading capabilities
- Add servers, processors, application instances, and more threads without requiring developers to change their code
- “Monitor” management application
- Drives small and large sites TODAY!



Summary

- If your application is complex, needs flexibility to adapt as business requirements evolve, or scalability to grow with your business and site...

**Develop with
WebObjects**



WebObjects ———

Other tools ———



Roadmap

Learning EOModeler:

Want to be an EOModeler/
EOF Master?

Room B
Wed., 9:00am

Using SQL/Relational Databases:

Want to be an EOModeler/
EOF Master?

Room B
Tues., 1:00pm

Deploying WebObjects Applications:

Deploying large (and fast) sites

Room B
Thur., 10:15am



Roadmap

Fine-Tuning the Performance of WebObjects Apps:

Deploying large (and fast) sites

Room B
Wed., 4:00pm

WebObjects: Java Client Introduction:

Need Java applications, not just
HTML?

Room B
Tues., 2:30pm







Think different.TM



Welcome

To Advance through Presentation
Use Page Up and Page Down Keys



99 | Worldwide
Developers
Conference