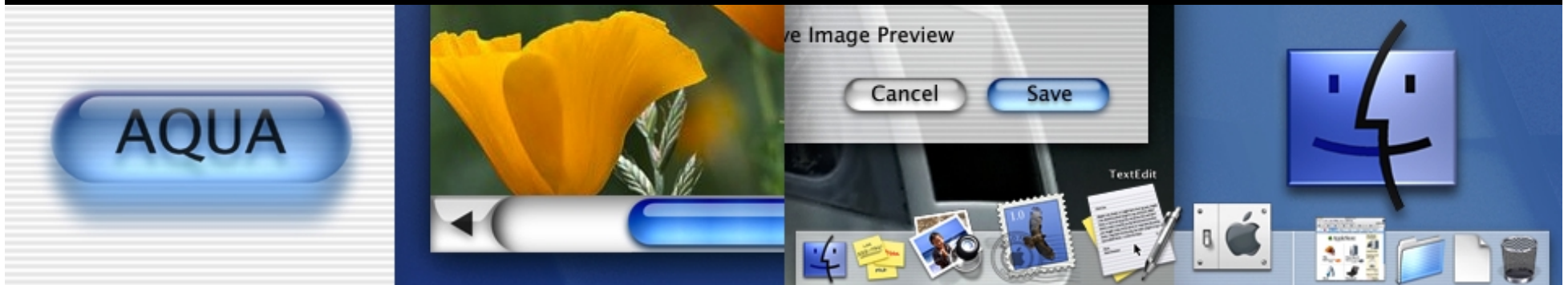




Session 405

WebObjects: Rapid Development Using Direct to Web



Miguel Sanchez

Mike Hoffhines, Senior Developer Trainer, Apple iServices

What Is Direct to Web?

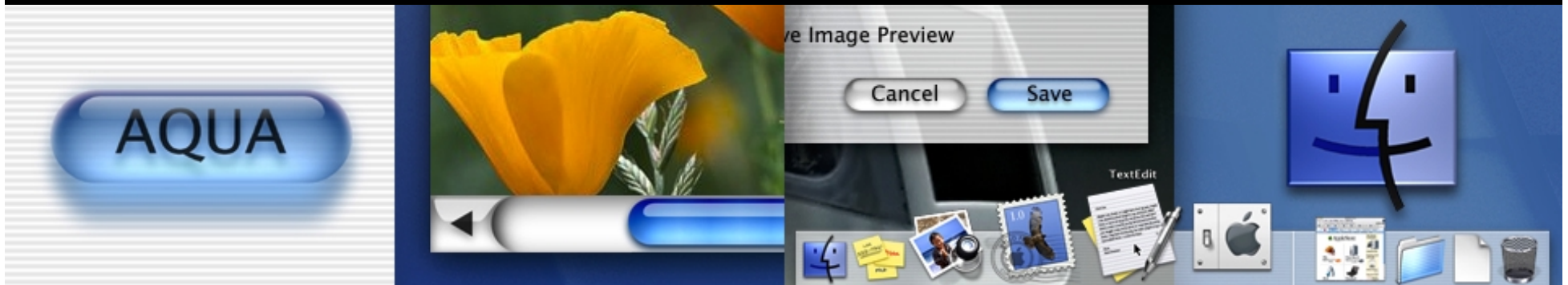
Java-based technology for rapid development of database-driven Web applications

- Java Framework
- Project Builder Wizard
- WebAssistant Applet





Direct to Web Demo 1



**Using an EOModel File and Project Builder,
Build and Exercise the Default D2W App**

Applications

- Data administration
- EOModel and validation testing
- Intranet and workgroup apps
- Iterative application development

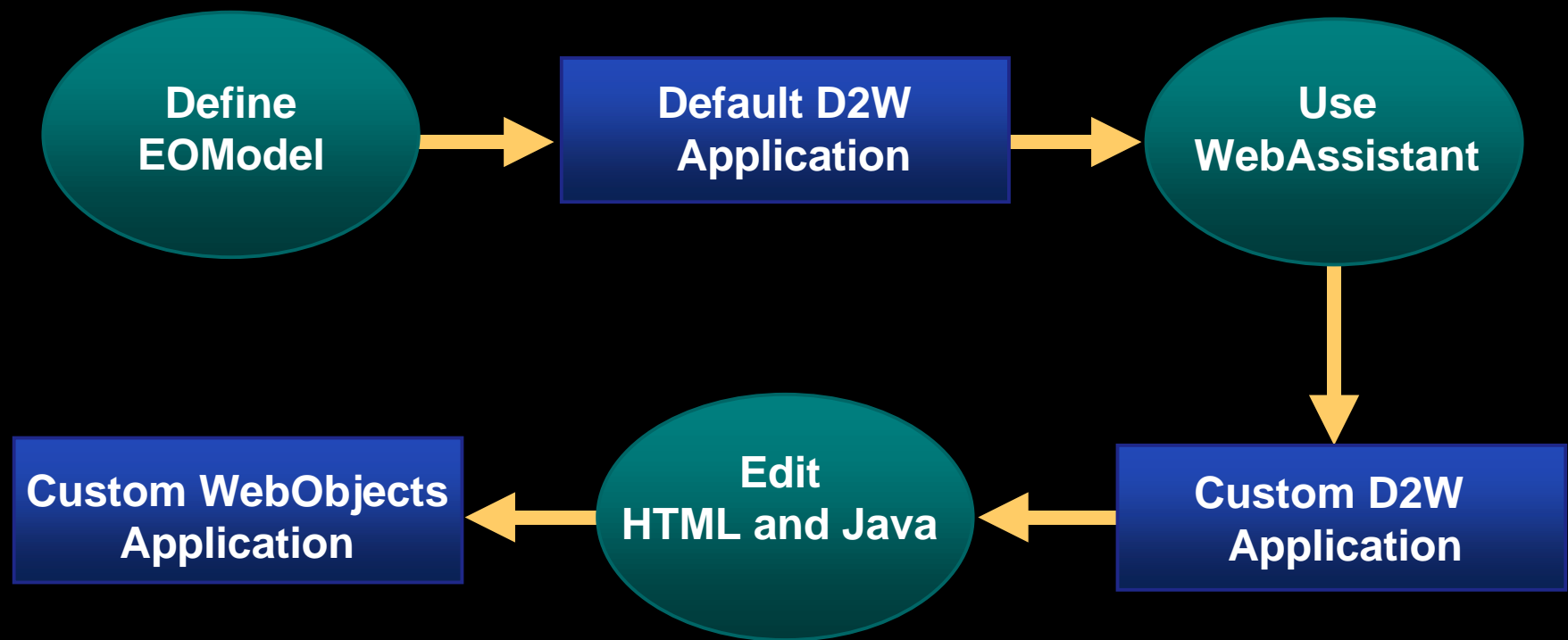


Advantages

- Rich set of default pages and behaviors
- Concentrate on data model and business logic
- 'WYSIWYG' application customization
- Good starting point for learning WebObjects
- Layered approach to application development



Direct to Web Development



Customization Layers

	Benefits	Tools	Files
1	Default Behavior and Layout	EOModeler WebAssistant	EO models D2W models
2	Customized Layout	WebObjects Builder	HTML
3	Customized Behaviors	Project Builder	Java



Customization Layers

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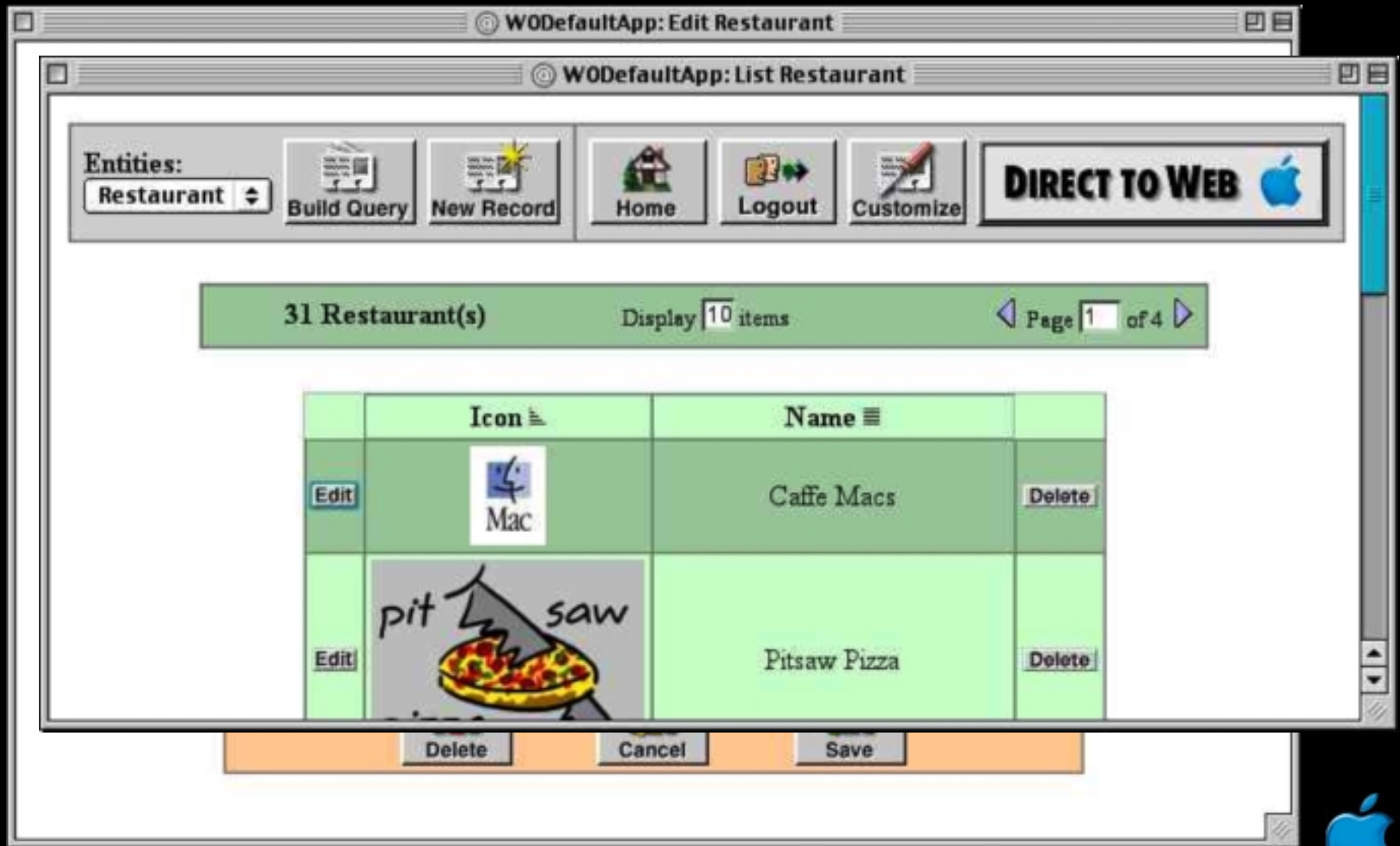
Layer 1—"Zero Lines of Code!"

Bring us your data and a good EOModel and you get...

- Choice of looks
- Nine different task pages
- WebAssistant for customization



The Basic Look



The Neutral Look



The WebObjects Look



The Task Pages

Task pages present entity data using the chosen look and default behaviors

- Query
- List and select
- Edit and inspect
- Edit relationships



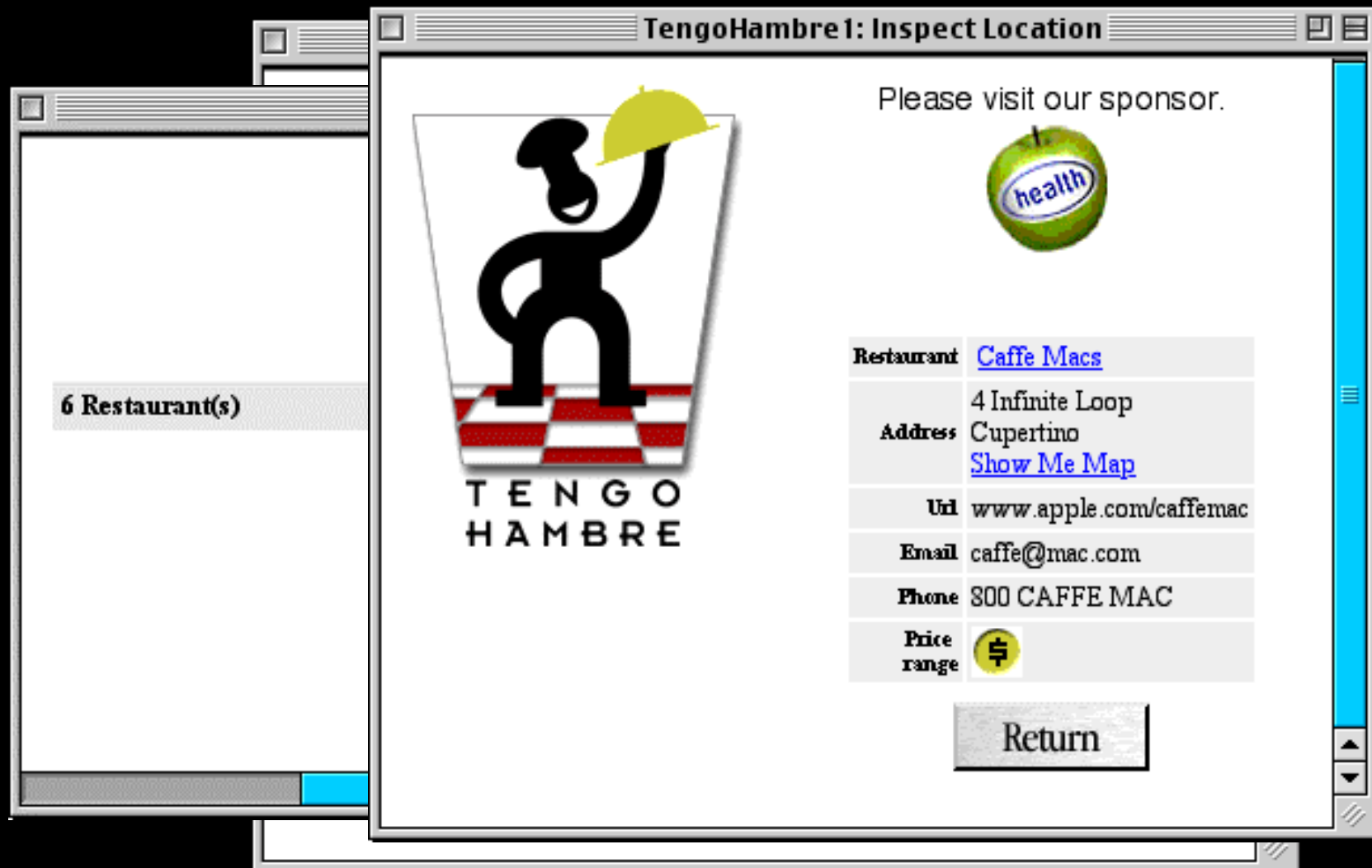
The WebAssistant

Java Applet for runtime customization

- Entity access permissions
- Property-level display attributes
- Page layout
- HTML and Java code generation (page 'freezing')



Tengo Hambre—The App



Tengo Hambre—The Entities

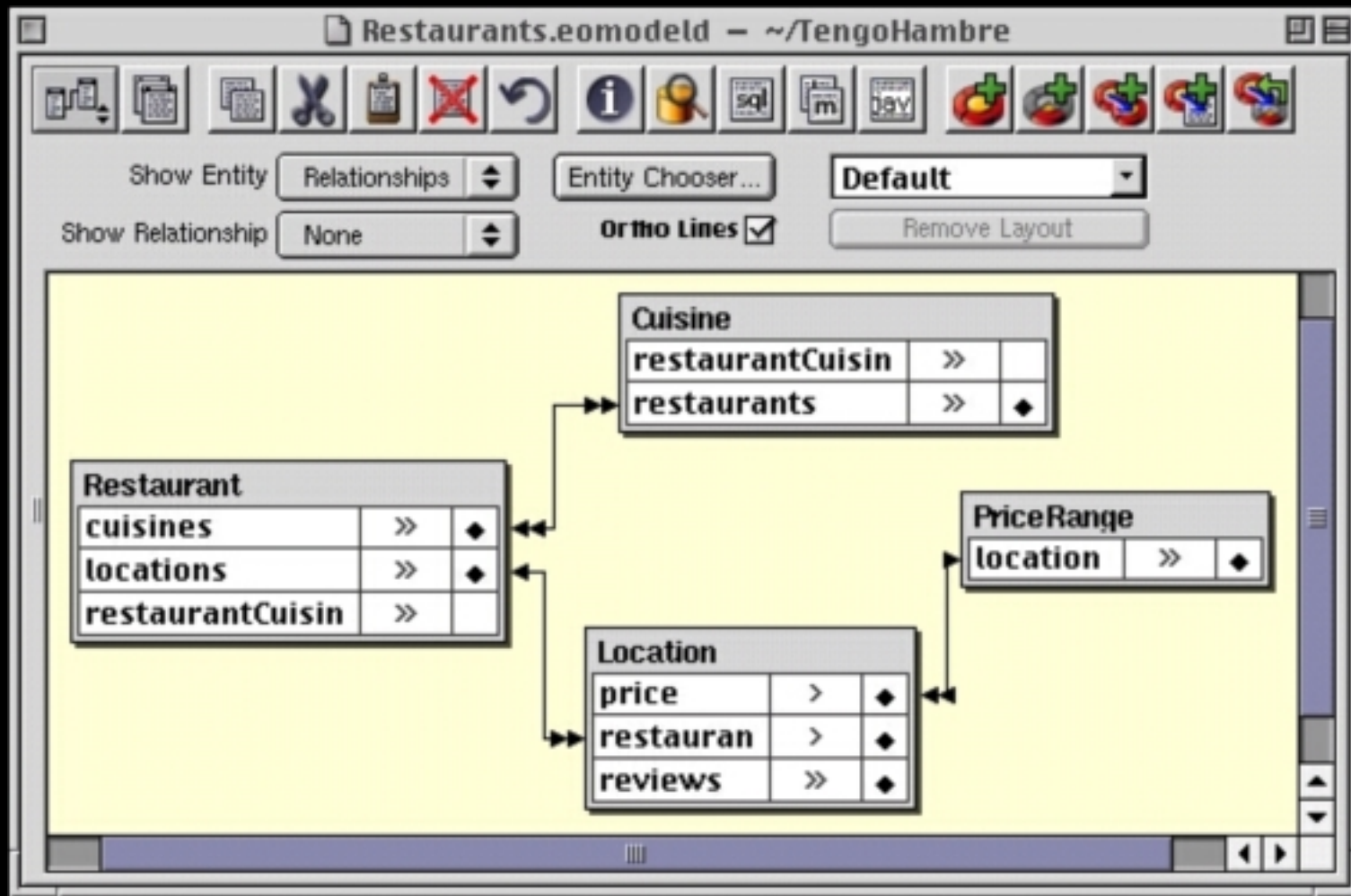
Restaurants.eomodeld - ~/TengoHambre

Name	Table	Class Name
Cuisine	CUISINE	Cuisine
Location	LOCATION	Location
PriceRange	PRICE_RANGE	PriceRange
Restaurant	RESTAURANT	Restaurant
RestaurantCuisine	RESTAURANT_CL	RestaurantCuisine
Review	REVIEW	Review

Add Column...

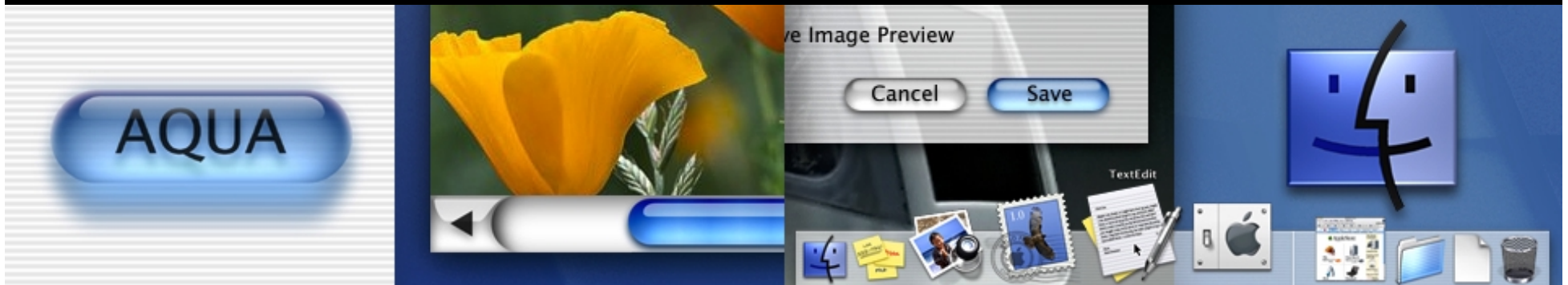


Tengo Hambre—The Relationships





Direct to Web Demo 2



**Customize the Default Application
Using the WebAssistant**

Customization Layers

	Benefits	Tools	Files
1	Default Behavior and Layout	EOModeler WebAssistant	EO models D2W models
2	Customized Layout	WebObjects Builder	HTML
3	Customized Behaviors	Project Builder	Java



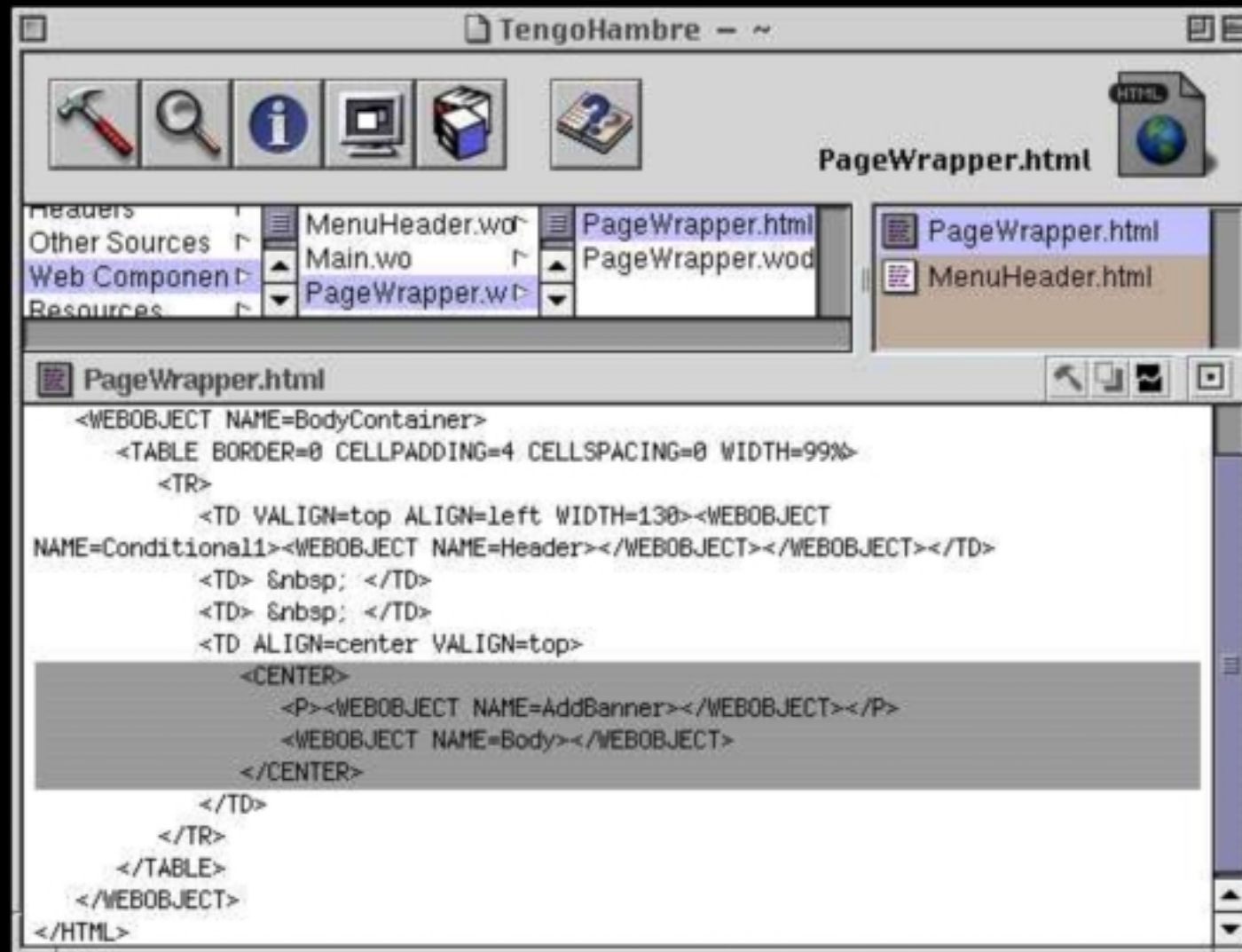
Layer 2—Edit Layout

Modify the layout of your application

- Application-wide layout defined in PageWrapper and Menu components
- Task-specific layout defined in D2W Templates



PageWrapper and MenuHeader



D2W Templates

The “plumbing” behind Direct to Web

- Highly-dynamic and configurable components
- No references to a specific model or entity
- Some serve multiple tasks



Rule System

The “plumber” behind Direct to Web

- Rules stored in d2wmodel file

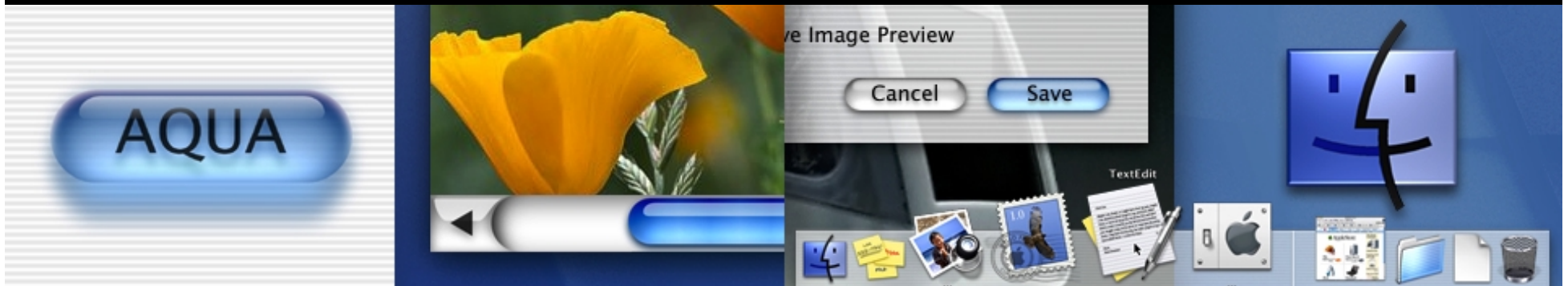
**((task = 'list') and
(entity.name = "Restaurant") and
(propertyKey = "locations")) ⇒
 componentName = D2WDisplayToManyTable**

- Rule system resolves values given current state
- D2WContext maintains application state





Direct to Web Demo 3



**Customize the PageWrapper
and generate template code**

Customization Layers

	Benefits	Tools	Files
1	Default Behavior and Layout	EOModeler WebAssistant	EO models D2W models
2	Customized Layout	WebObjects Builder	HTML
3	Customized Behaviors	Project Builder	Java



Layer 3—Edit Java Code

Modify the behavior of your application

- D2WCustomComponent
- Reusable components
- D2W API
- Code generation



D2WCustomComponent

Plug in your property-level components

- Create your reusable WebObjects component
- Implement two bindings: object and key
- Use WebAssistant to configure a property to use your component



Reusable Components

WebObjects Builder maintains a palette of D2W components for use in your applications

```
List1 : D2WList {  
    list = restaurants;  
    entityName = "Restaurant";  
}
```



Direct to Web API

**Jump into the dynamic world
of D2W from your code**

```
import com.apple.yellow.directtowe.*;  
  
public WOComponent showListPage(WOSession s) {  
    ListPageInterface page =  
        D2W.factory().listPageForEntityNamed("MyEntity",s);  
  
    page.setDataSource(myDisplayGroup.dataSource());  
    page.setNextPage(this);  
  
    return (WOComponent) page;  
}
```



Code Generation

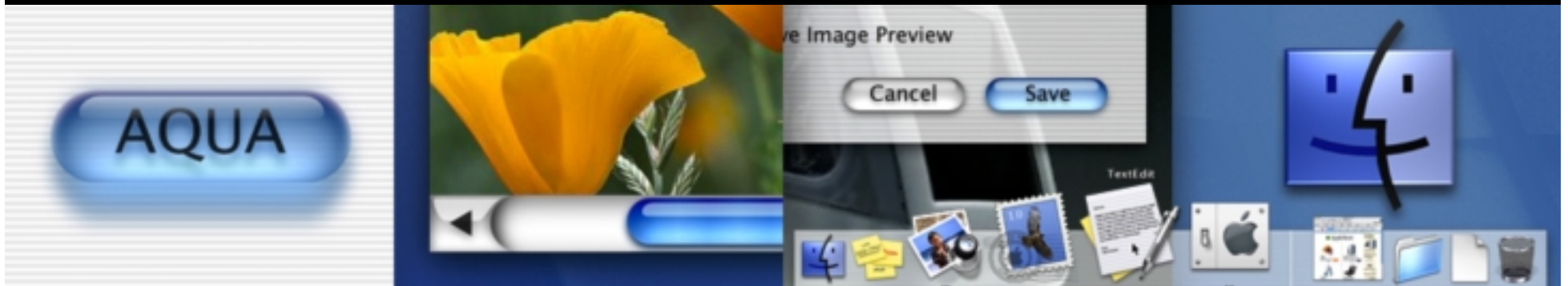
Freeze individual pages for further customizations

- Gain full access to HTML and Java
- Loose runtime configuration





Direct to Web Demo 4



Add a Custom Component to Tengo Hambre

Customization Layers

	Benefits	Tools	Files
1	Default Behavior and Layout	EOModeler WebAssistant	EO models D2W models
2	Customized Layout	WebObjects Builder	HTML
3	Customized Behaviors	Project Builder	Java



Summary

Java-based technology for rapid development of database-driven Web applications

- WebAssistant
- D2W Templates
- D2WCustomComponent
- Code generation



Where to Go From Here

- WOInfoCenter
 - WebObjects Tools and Techniques
 - Developing WebObjects Applications with Direct to Web
 - Direct to Web Framework Reference
- Experiment using the Movies model



For More Information

<http://www.apple.com/webobjects>

Visit the WebObjects lab downstairs!
Everyday from 11:00 a.m.–2:00 p.m.

Try out your WebObjects 4.5 Evaluation CD!

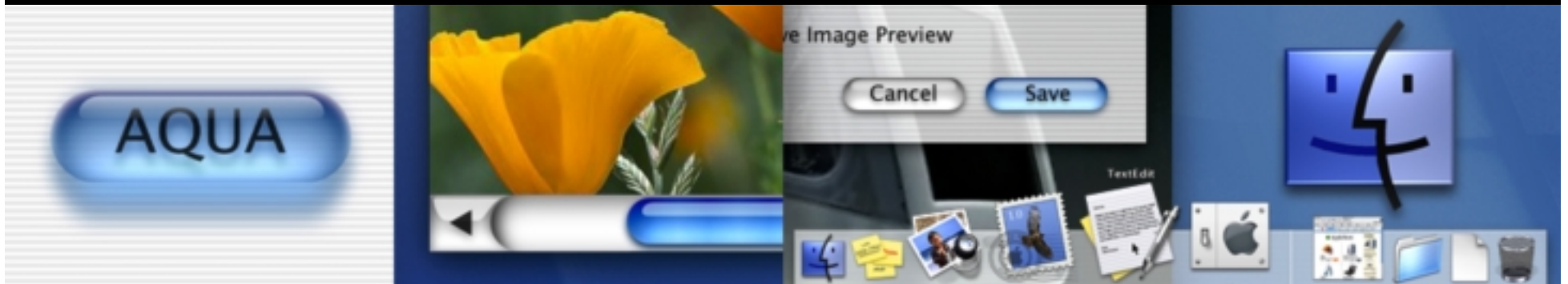
WebObjects Community BOF
Wed., 6:30 p.m.–8:00 p.m.





Session 405

Q&A



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WWDC

Worldwide Developers Conference 2000



Think different.