

The background of the image is a collage of various items: a magnifying glass with an Apple logo on its handle, a green pen holder with several pens, a globe, and a wooden desk. The text is overlaid on this background.

Worldwide

Developers

Conference



Web Server Programming

Carl de Cordova

Internet Evangelist
Apple Computer, Inc.

Web Server Programming

- **Greg Hemstreet**
 - Chief Technology Officer,
EveryWare Development Corp.
- **Nathan Nunn**
 - Purity Software, Inc.
- **Terje Norderhaug**
 - Media Design in*Progress





Web Server Programming

Greg Hemstreet

Chief Technology Officer
EveryWare Development Corp.

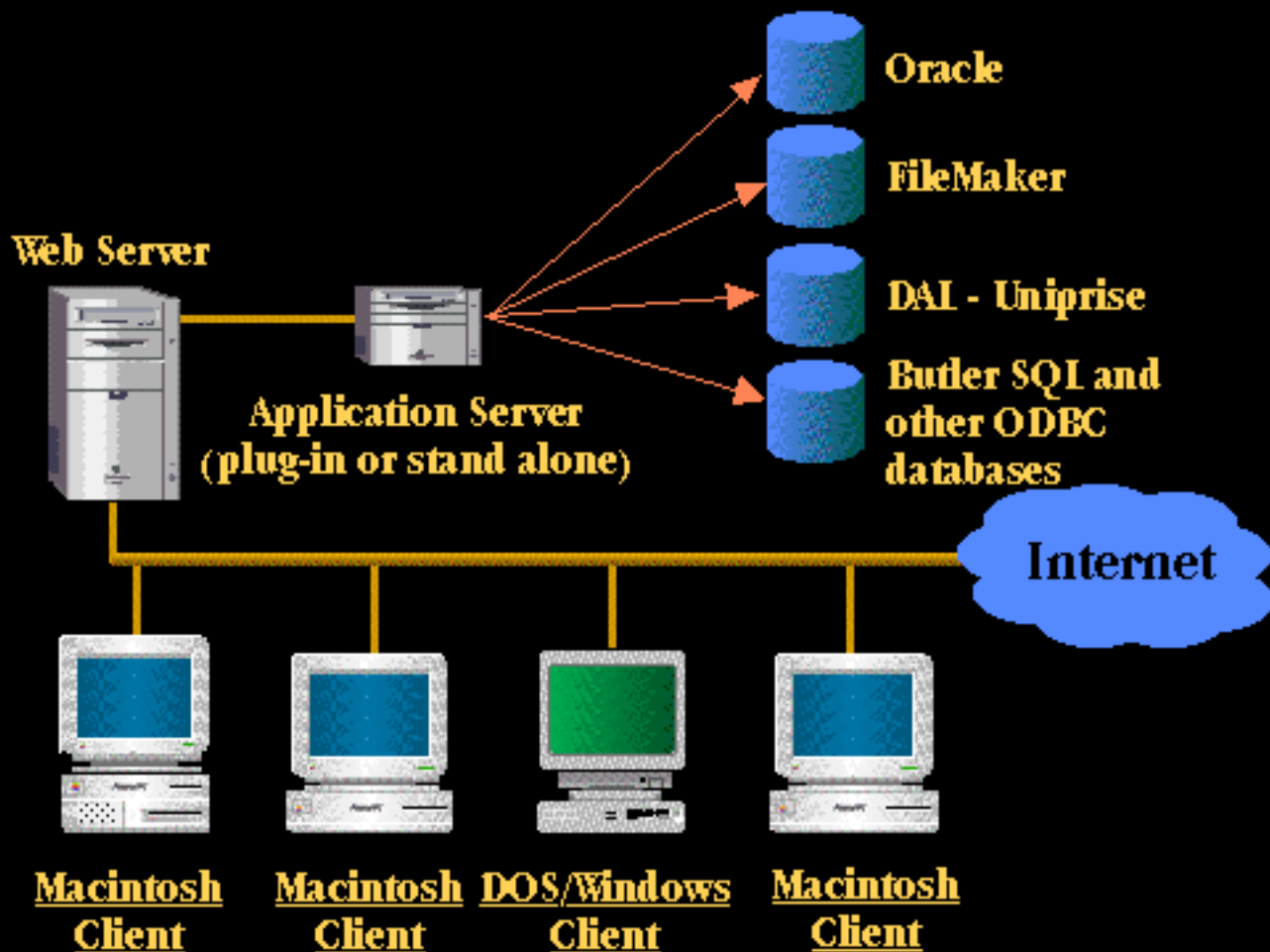
Application Servers

For the Web...

- **Multi-tier environment**
 - Transition from client/server
- **Separate**
 - Client display
 - Application logic
 - Database access
- **Integrate one or more databases**
- **Integrate non-structured data too**



Multi-Tier Applications



Model for Server Processing

A

Client calls application server



B

Client receives form and submits query

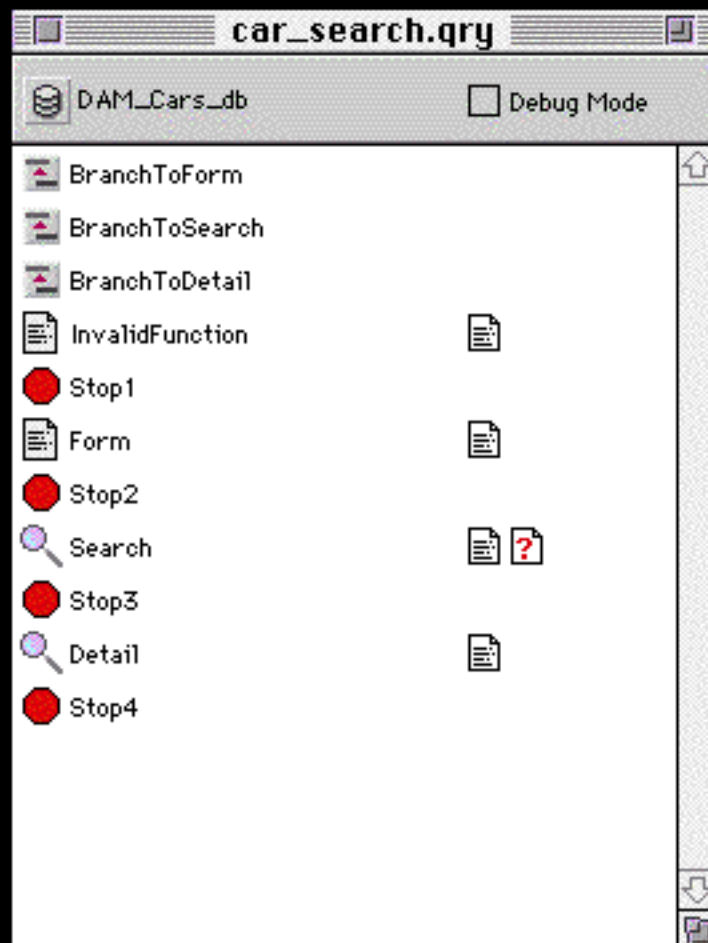


C

Client receives back results of query



Application Server Logic



Action metaphor

- **Conditional branching**
- **HTML action**
- **Database actions**
 - Search
 - Insert
 - Update
 - Delete
- **External actions**
- **Stop (return to browser)**



Database Abstraction Layer

car_search.qry: Search

Select Criteria Results

Search Type: Normal

Select Columns:

- maintable.manufacturer
- maintable.name
- maintable.price

Order By Columns:

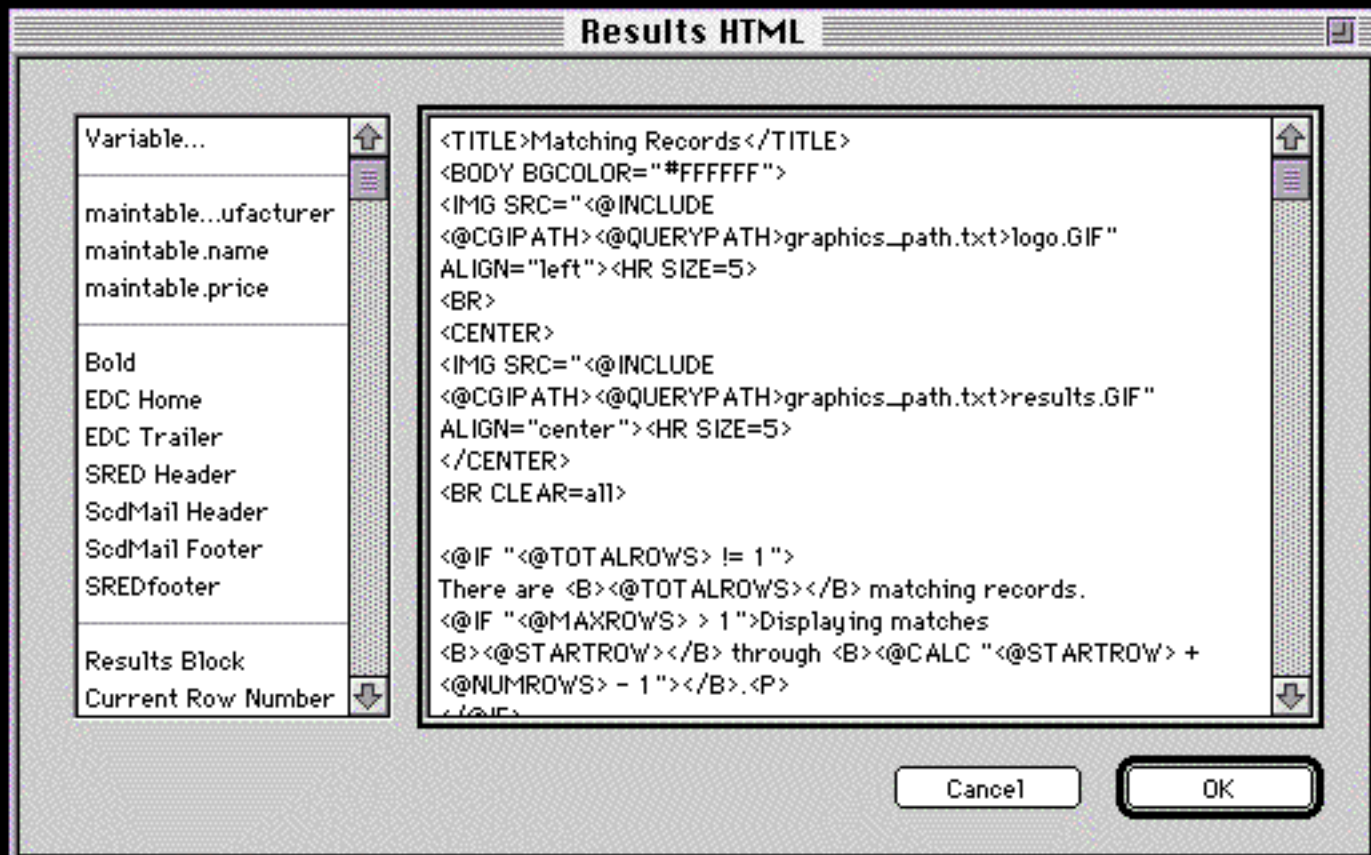


Database to HTML Translation

Database results are composed into HTML using a template of HTML with “meta tags” acting as placeholders



Client Display Layer



The screenshot shows a window titled "Results HTML" with a list of variables on the left and a text area containing HTML code on the right. The variables list includes "maintable...ufacturer", "maintable.name", "maintable.price", "Bold", "EDC Home", "EDC Trailer", "SRED Header", "SodMail Header", "SodMail Footer", "SREDfooter", "Results Block", and "Current Row Number". The HTML code defines the structure of the results page, including titles, image inclusions for a logo and results, and conditional logic for displaying a list of records.

Variable...

- maintable...ufacturer
- maintable.name
- maintable.price

Bold

- EDC Home
- EDC Trailer
- SRED Header
- SodMail Header
- SodMail Footer
- SREDfooter

Results Block

Current Row Number

```
<TITLE>Matching Records</TITLE>
<BODY BGCOLOR="#FFFFFF">
<IMG SRC="<@INCLUDE
<@CGIPATH><@QUERYPATH>graphics_path.txt>logo.GIF"
ALIGN="left"><HR SIZE=5>
<BR>
<CENTER>
<IMG SRC="<@INCLUDE
<@CGIPATH><@QUERYPATH>graphics_path.txt>results.GIF"
ALIGN="center"><HR SIZE=5>
</CENTER>
<BR CLEAR=all>

<@IF "<@TOTALROWS> != 1">
There are <B><@TOTALROWS></B> matching records.
<@IF "<@MAXROWS> > 1">Displaying matches
<B><@STARTROW></B> through <B><@CALC "<@STARTROW> +
<@NUMROWS> - 1"></B>.<P>
</IF>
```

Cancel OK



Closer Look at HTML Templates

```
<TABLE BORDER=1 CELSPACING=2 CELLPADDING=2>
<TR VALIGN=TOP ALIGN=LEFT>
<TH>Vehicle Name</TH>
<TH>Manufacturer</TH>
<TH>MSR Price</TH>
</TR>
```

```
<@ROWS>
```

```
<TR VALIGN=TOP>
<TD><A HREF =
"<@CGI><@QUERYDOC>?function=detail&maintable_uid1=<@COLUMN
"maintable.manufacturer" URL">"><@COLUMN
"maintable.name"></A></TD>
```

```
<TD><@COLUMN "maintable.manufacturer"></TD>
<TD><@COLUMN "maintable.price"></TD>
</TR>
```

```
</@ROWS>
```

```
</TABLE>
```



Tango and Java

- **Tango Java classes—TODAY**
 - www.everyware.com
 - URL derived class functionality
 - Database connectivity to Oracle, Sybase, etc.
- **Tango API Services**
- **Java Actions within Application Server**
- **JavaBeans integration with Editor**





Demo



Q&A



Programming Web Servers

Nathan Nunn

Purity Software, Inc.
nnunn@purity.com

WebSiphon

Rapid Web-Application Development

- **HTML embedded scripting architecture**
- **SiphonScript is a compiled language**
- **Supports heavy load sites**
 - Fully multi-threaded
 - PowerPC native
- **Rich built-in function libraries**
- **Verona provides database storage**



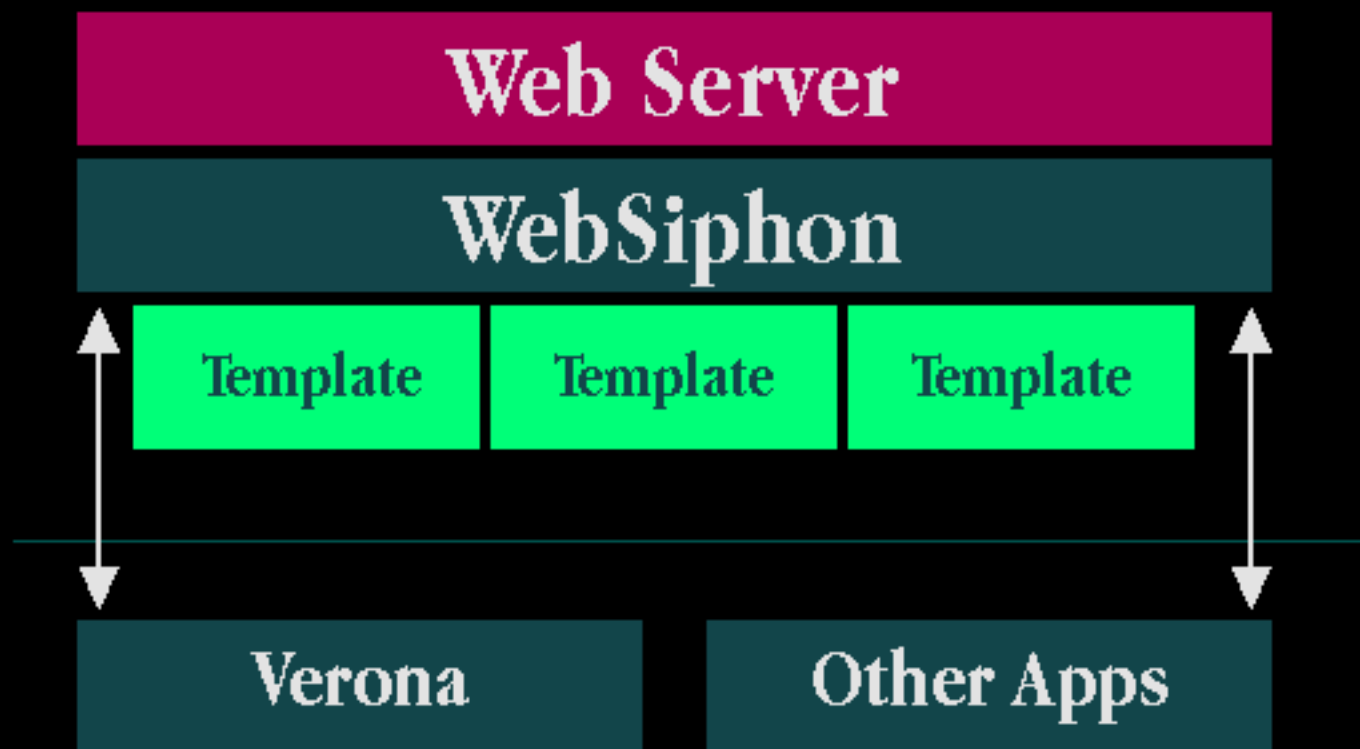
Verona

Flat-file Database Server for Web Sites

- **Efficient, threaded**
- **Small footprint**
- **Multiple tables**
- **Always available**



WebSiphon Model



Guestbook—Sample Code

```
«
  // Guestbook CGI Demo
  // Orig Author : nunn

  // Complete Guestbook SiphonScript CGI
  // ~50 lines total script/html
»
<html>
<head>

<title>WebSiphon Guestbook</title>

</head>
<body>
<h1>WebSiphon Guestbook</h1>
<p>
```



Guestbook—Sample Code

```
<!-- Build HTML Submission Form -->
<form action="guestbook.t" method="POST">
Name:<br>
<input name="name" type="text" size="40">
E-Mail:<br>
<input name="email" type="text" size="40">
Message:<br>
<textarea name="message" rows="4" cols="40">
</textarea>
<p>
<input name="add" type="submit" value="Add to
Guestbook">
</form>

<p>
```



Guestbook—Sample Code

```
«
  if defined(add) then

    // add the record to the database
    vAddRecord("guestbook",
               [{"who" name] [{"mail" email]
               [{"mesg" message]
               [{"date" currentDate()}
               [{"time" currentTime()}
               ]]);

  end if;
```



Guestbook—Sample Code

```
// List all the guestbook entries
entries = vRetrieve("guestbook", "date",
"all", "", ["who" "mail" "date" "time"
"mesg"]);

if sizeof(entries) = 0 then

    // no entries in the guestbook
    «<b>There are currently no entries in this
guestbook.</b><p>»

else

    // display guestbook entries...
```



Guestbook—Sample Code

```
«<b>There are currently {sizeof(entries)}  
entries in this guestbook.</b><p>»
```

```
repeat with the_entry in entries
```

```
«
```

```
From: {the_entry'1} <br>
```

```
« if the_entry'2 != "" then »
```

```
E-Mail: {the_entry'2} <br>
```

```
« end if; »
```

```
When: {the_entry'3} {the_entry'4}<p>
```

```
Message: <pre>{the_entry'5}</pre>
```

```
»
```

```
end repeat;
```

```
end if;
```

```
»
```

```
</body>
```

```
</html>
```





Demo



Q&A



Interaction's Component Architecture

Terje Norderhaug

*Media Design
in*Progress*

Overview

- **What Is Interaction?**
- **Dynamic Objects**
- **Developing Components**
- **Programming Reference**



What Is Interaction?

- **Powerful Mac Web server companion**
- **Dynamic, adaptable social websites**
- **Light-weight SGML publishing**
- **On the fly HTML**
- **Persistent state**



Many Plug-In Components

- **Forums and chat**
- **Cascading style sheets and stylizer**
- **Virtual hosting**
- **Shopping cart**
- **Markup editor**
- **Access restrictions**
- **Form-to-email**



Extended with Dynamic Objects

- **ANSI Standard Common LISP**
- **Powerful, mature language**
- **Extensively object oriented**
- **Dynamic linked**
- **Develop directly in application**
- **Native Compiler available**



Developing and Distributing Components

- **Well documented—no API needed!**
- **Access to all internals**
- **Dynamic programming—modify anything**
- **Plug-ins: interpreted or compiled**
- **Compact code—small footprint**
- **Examples: tools, entities, editors, libraries, and more**



Programming Reference

- **Define command**
- **Define entity**
- **Define restriction**
- **Define persistent**
- **Getting arguments from forms**
- **Containment in HTML**





Demo



Q&A

The background of the image is a collage of various items: a magnifying glass with an Apple logo on its handle, a green pen holder with several pens, a globe, and some papers. The text is overlaid on this background.

Worldwide

Developers

Conference