

Building A Web Application With Flash

Introduction

Overview Of Our Presentation

- ❖ Our presentation is divided into five major parts
 1. Basics of Flash
 2. Developing Flash Application in Flash MX
 3. Animating with Flash
 4. Advanced back-end interfaces with Flash
 5. Using Google in Flash and some flash demos

The Basics Of Flash

What is Flash?

- ❖ Macromedia Flash is a Web technology for creating graphics and animation on Web pages or standalone application.
- ❖ It has quickly become the premier Web software for animated graphic presentations due to its bandwidth-friendly and browser-independent vector-graphic technology.
- ❖ Now with the latest version, Macromedia Flash is also able to communicate back and forth with a database. You can send information from a database to the movie and vice versa.

The Basics Of Flash

The Flash Player

- ❖ Is a standalone program that is separate from the Flash program that is use to create Flash movies.
- ❖ Flash movie files contain the instructions that tell the Flash Player how to reproduce the images, animations, sound effects, and so on.
- ❖ To play back a Flash movie, you need a copy of the Flash Player but virtually all Web browsers already have some version of the Flash Player built in.
- ❖ Both Internet Explorer and Netscape Navigator utilize a specific plug-in made for that particular browser, allowing Flash animations to look the same on any platform.

The Basics Of Flash

Some Advantages Of Using Flash

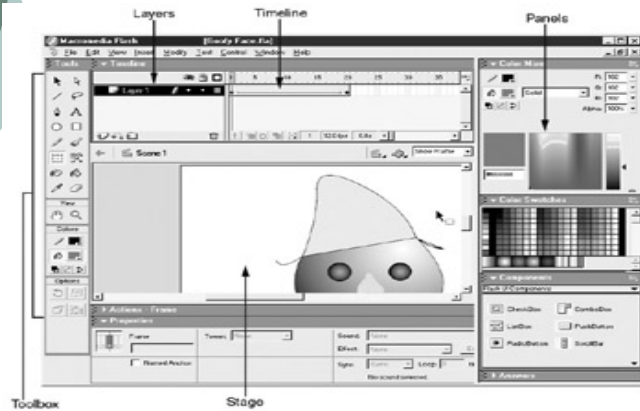
- ❖ One of the great advantages of using Flash is that fact that you can provide engaging content with a minimal wait time. For example the image shown below which is made Flash only takes about 1K of storage.



- ❖ Most multimedia formats can be integrated into Flash. You can use vector formats, such as EPS (*Encapsulated PostScript*), and files from FreeHand and Illustrator. You can even use bitmaps, such as GIF, TIF, JPEG, and PNG. You can also use sound formats, such as WAV, AIF, and MP3, and AVI and MOV movie formats.

The Basics Of Flash

Major Components Of Flash MX



The Basics Of Flash

Major Components Of Flash MX

- ❖ **The Flash Stage:** The *stage* is the area where you add objects that you want to appear in your Flash movies.
- ❖ **The Timeline:** The *timeline* is the controller for all of your Flash movies. The timeline is made up of *frames* that play at a specific time during the movie.
- ❖ **Layers:** *Layers* are simply different areas that are stacked onto the Flash workspace.
- ❖ **The Toolbox:** The *toolbox* contains all the tools you need for drawing objects on the stage.
- ❖ **The Panels:** Flash has several *panels*-which can remain on the screen ready for additional use without requiring you to respond to them.

Developing Flash Application Using Flash MX 2004

Drawing Tools, UI Components, Actionscripts

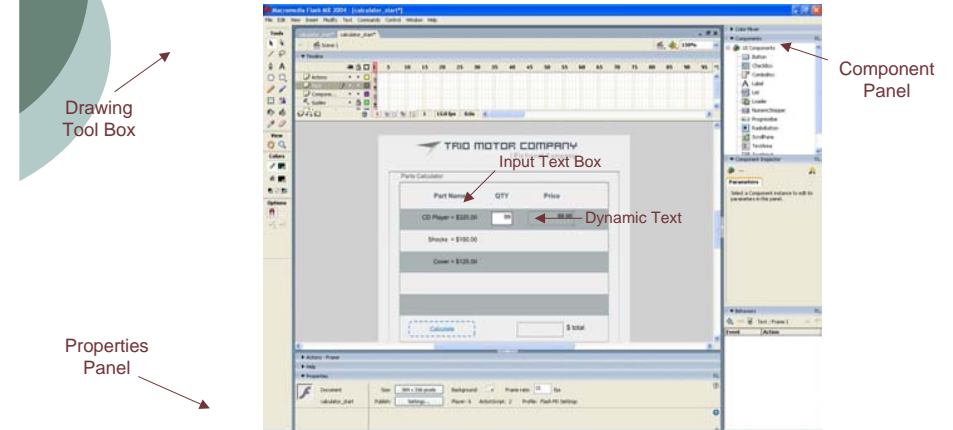
Flash MX 2004

- Flash MX 2004 offers simple drawing tools to design the appearance for any flash application, animation, presentation, etc.
- The component panel allows the user to drag a component (eg. Button) onto the working area.
- Action panel let the user to enter actionscripts for any elements on the screen.

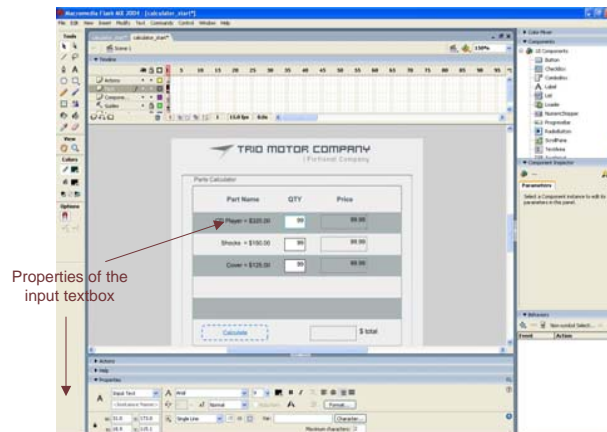
Actionscripts

- Actionscripts are typically used to define actions to an element when an event occur.
- The syntax are very similar to javascripts.
- It has some built-in classes and methods that we can use.
- Can define a new class of objects and methods just like Java.

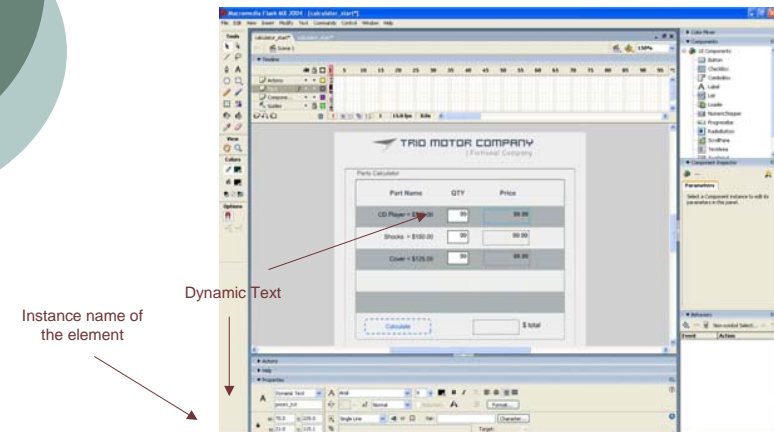
Developing an Application



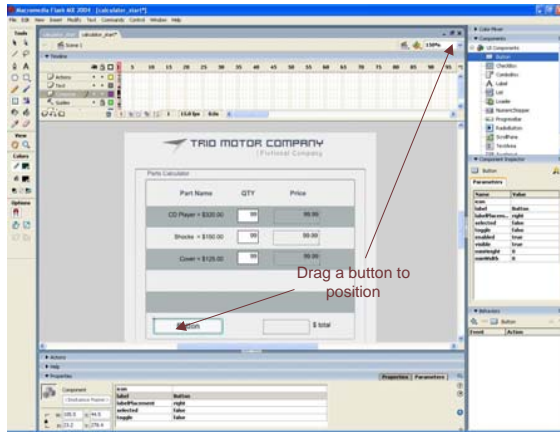
Developing an Application



Developing an Application



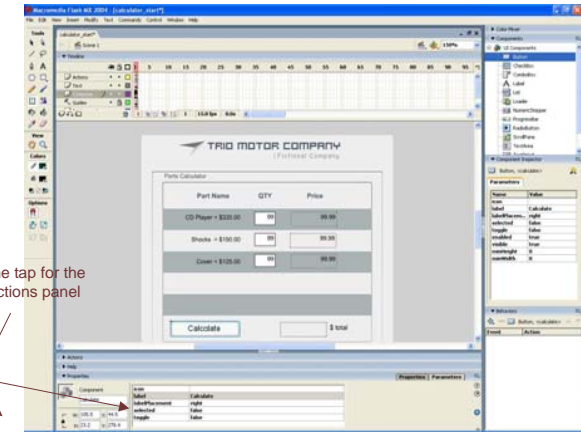
Developing an Application



Properties for the button

Drag a button to position

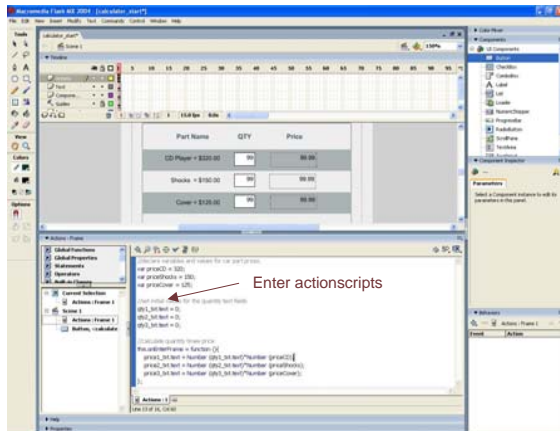
Developing an Application



The tap for the actions panel

Rename the label and the instance name

Developing an Application

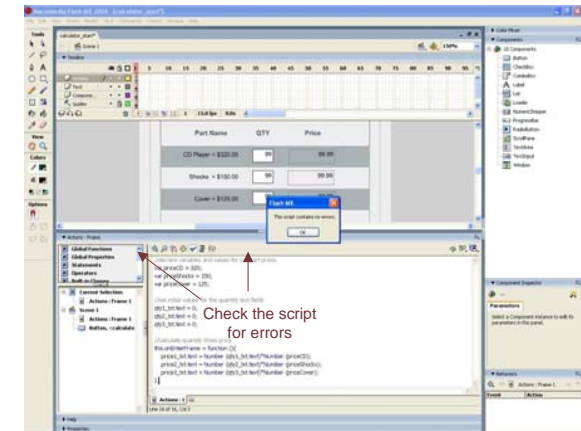


Built-in functions and classes

Enter actionscripts

Existing elements

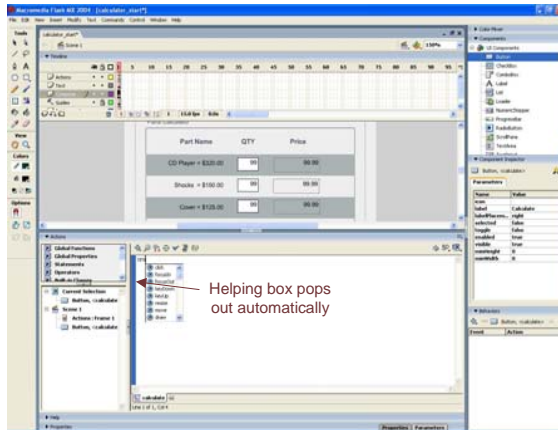
Developing an Application



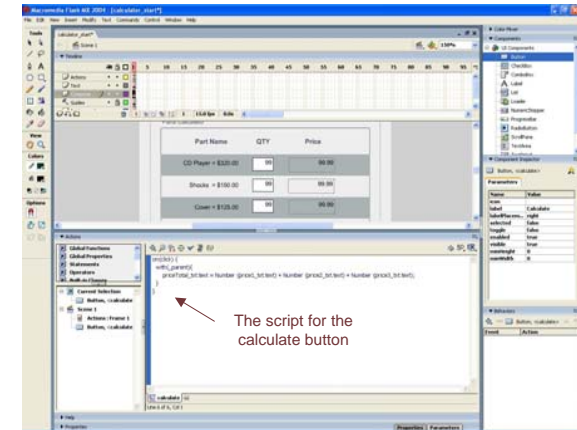
Check the script for errors

The add contains an error

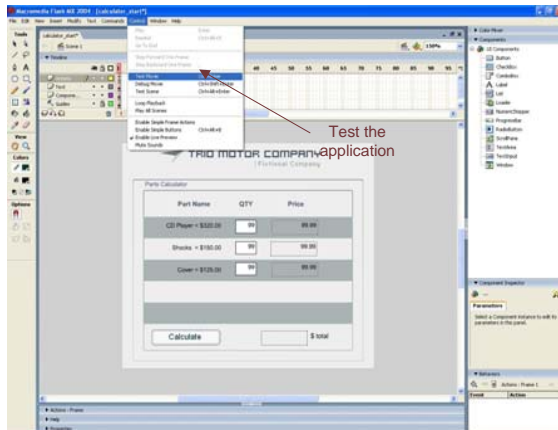
Developing an Application



Developing an Application



Developing an Application



Animating with Flash

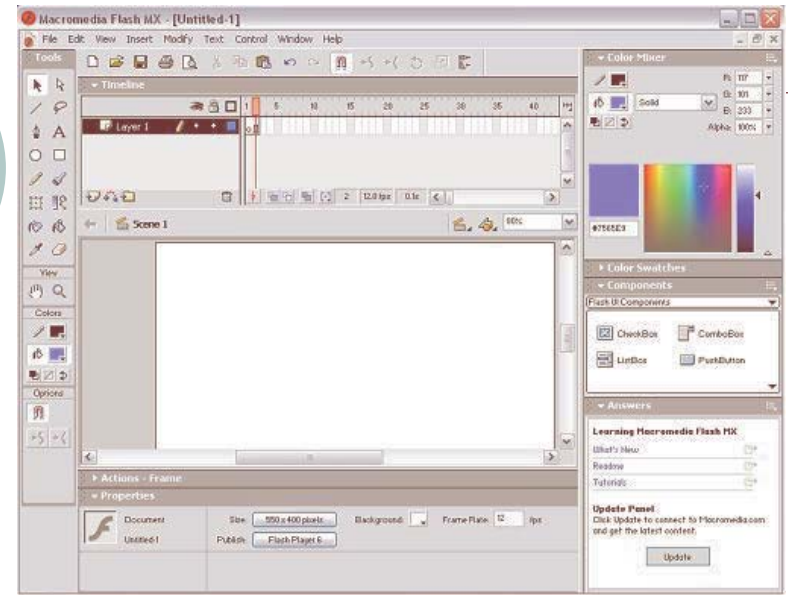
- ❖ Why people use animation on web.
- ❖ Flash today is the most popular eye candy maker .
- ❖ Easy to use application + Vector graphics

Vector Based Graphics:

- ❖ What is Vector Based Graphics.
- ❖ Flexibility + size advantage over bitmap.

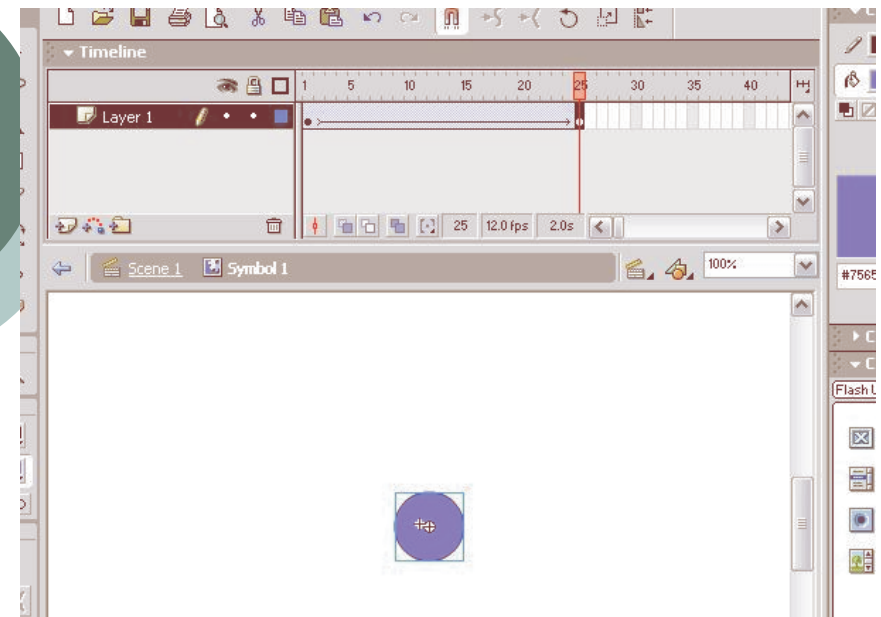
Making animation:

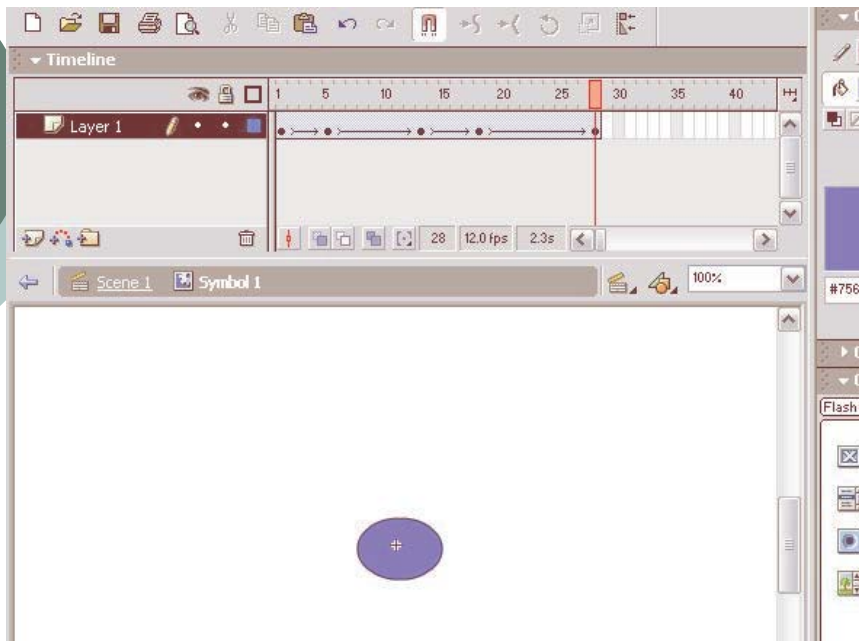
- ❖ What is a key frame and layers ?
- ❖ How is the movie constructed?



Motion Tween

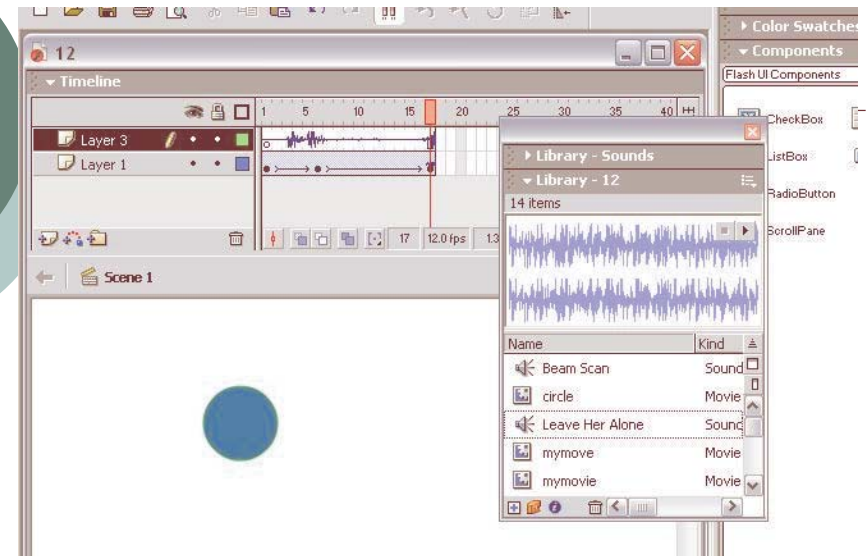
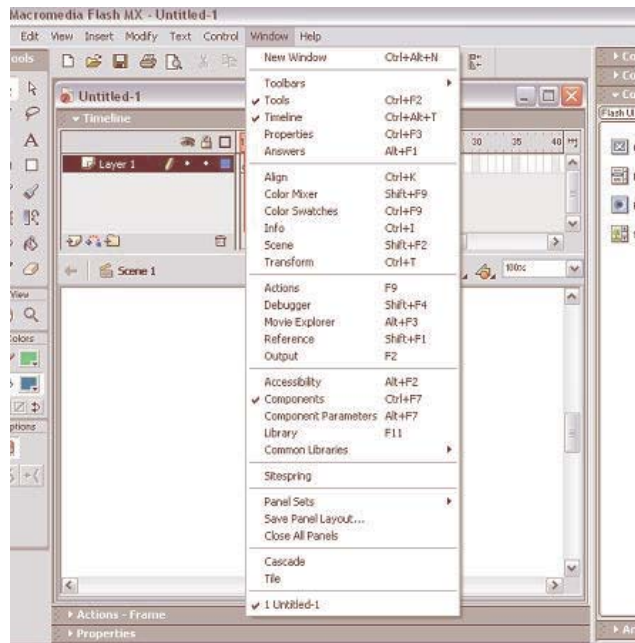
- ❖ What is motion tween
<http://www.ualberta.ca/~syeh/test.html>
- ❖ Auto generated frames
- ❖ 'Insert > Create Motion Tween' + F6
- ❖ Enter to run the movie





Animation with Sounds

- ❖ Play sound at at the right moment
- ❖ Standard sound library
- ❖ Self imported sound files, mp3, midi etc.





Import Flash in to your html

- ❖ To Export your movie, so you can use it on your web page:
- ❖ Go to 'File> Export Movie' and save your movie as what you want. Flash movies usually are saved as .swf format.



```
<html>
<head>
</head>
<body>
<EMBED SRC="movie.swf"
QUALITY="high"
PLUGINSOURCE="http://www.macromedia.com/shockwave/download/index.cgi?P1_Prod_Version=ShockwaveFlash" TYPE="application/x-shockwave-flash" WIDTH="400" HEIGHT="120">
</body>
</html>
```



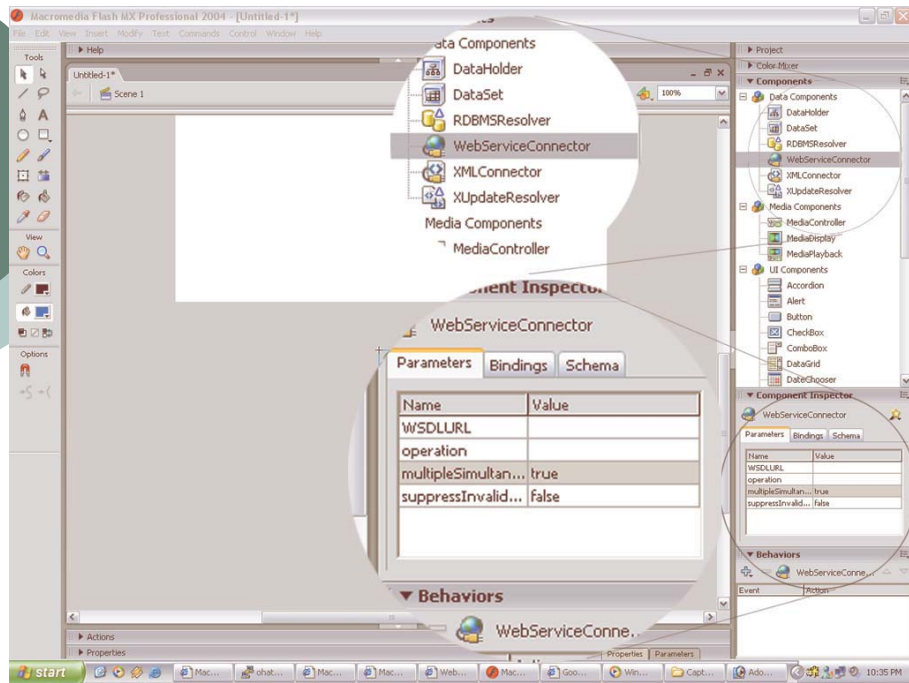
Integrating External Data Sources in Flash

- ❖ **Connecting external data sources for use in flash applications**
 - ❖ E.g. database
- ❖ **Implemented in four layers:**
 - ❖ Data Connectivity
 - ❖ Data Management
 - ❖ Data Resolution
 - ❖ Data Binding



The Data Connectivity Layer

- ❖ **Data transport layer provided through :**
 - ❖ **Flash components**
 - ❖ **Actionscript**
 - ❖ **Supported methods:**
 - ❖ **Web Services**
 - ❖ **Pure XML via HTTP**
 - ❖ **Flash Remoting binary protocol (developed exclusively for Flash)**

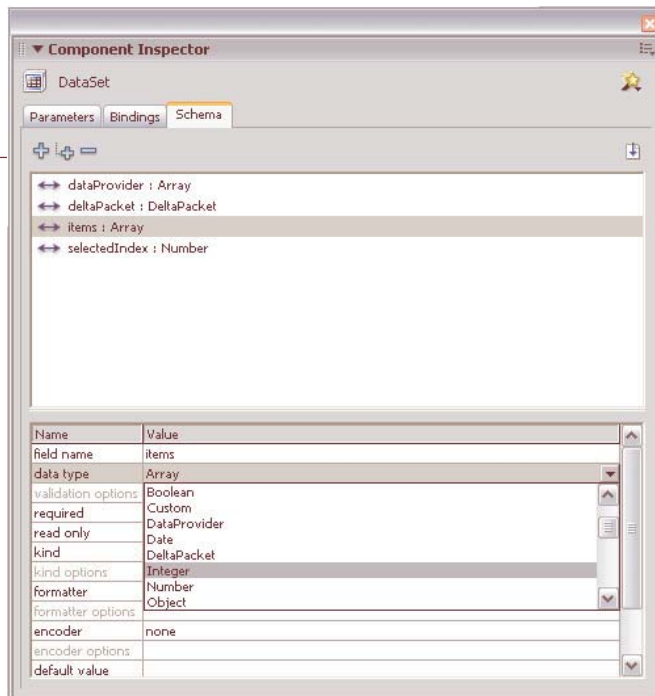


The Data Management Layer

- ❖ manage data on the client via the **DataSet** component

- ❖ **DataSet:**

- ❖ Flash object
- ❖ A miniature database (really an array)
- ❖ Data within the DataSet can be sorted, filtered, searched, etc. via provided methods



The Data Resolution Layer

- ❖ **DeltaPacket**

- ❖ Flash object
- ❖ constructed from locally changed data
- ❖ use **RDBMSResolver** component to create packages that can be decomposed to SQL statements
- ❖ use **XUpdate** component to create XUpdate XML packet (XML standard)

The Data Binding Layer

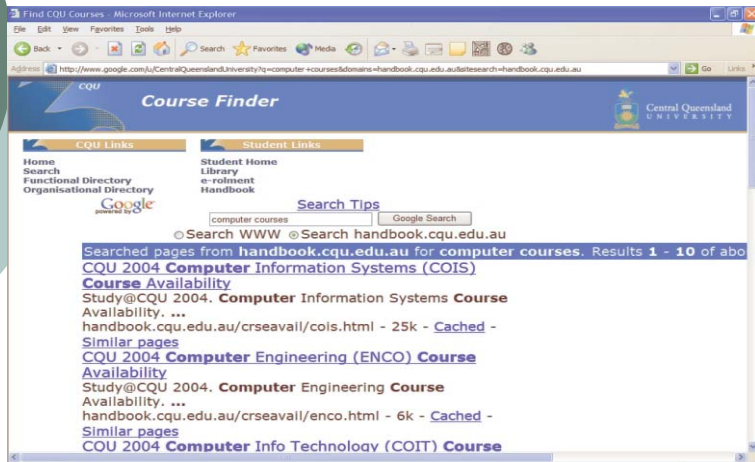
- ❖ binds one component with another component.
- ❖ changes in one component will be reflected in the other.
- ❖ The link between the Flash application's interface and its DataSets

Building a Google Search Application with Macromedia Flash MX Professional

❖ Goal

Create a simple web search application that queries the Google web API using SOAP web services.

Building a Google Search Application with Macromedia Flash MX Professional



Building a Google Search Application with Macromedia Flash MX Professional

❖ Four main steps :

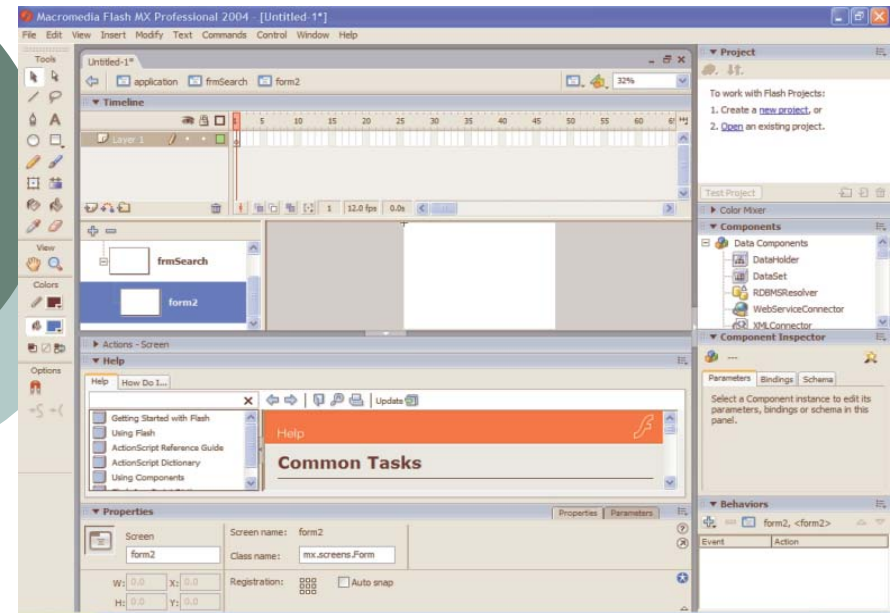
- A) Create the framework for the Flash form application
- B) Connect to Data Sources with Components
- C) Attach Script Actions
- D) Publish the Application

Building a Google Search Application with Macromedia Flash MX Professional

A) Create the framework for the Flash form application:

- ❖ Choose File > New and select Flash Form Application. This creates a default application with two nested form screens.
- ❖ In the Property inspector of form1, change the instance name to **frmSearch**. This form will contain the main search interface.
- ❖ Right-click frmSearch and choose Insert Nested Screen. This creates a new form screen called form2 underneath frmSearch. Change the instance name of the new form screen to **frmLoading**.

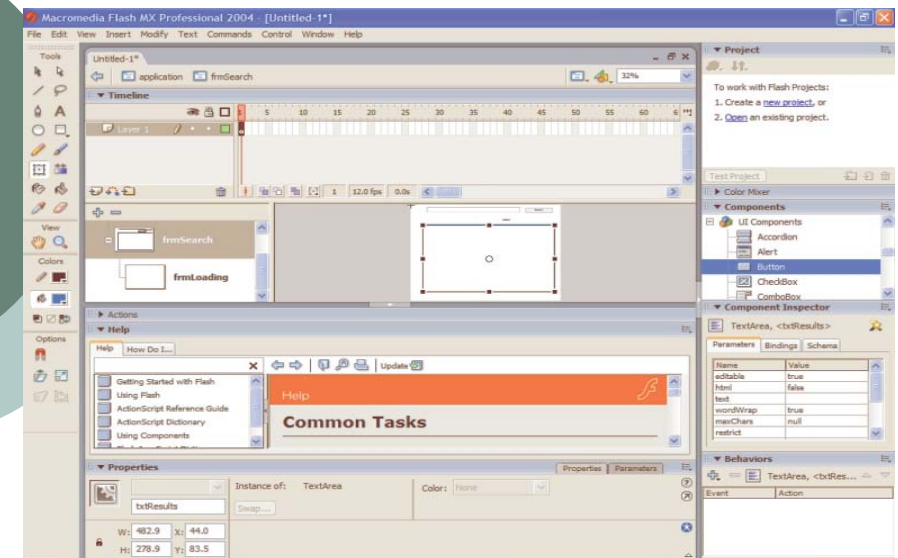
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Building a Google Search Application with Macromedia Flash MX Professional

- ❖ Now you can add UI components to the forms. In the Components panel, drag a Label, Button TextInput, and TextArea component onto the stage.
- ❖ Using the Property inspector, give the components the following instance names—Label: **lblSearchTime**; Button: **btnSearch**; TextInput: **txtQuery**; and TextArea: **txtResults**.

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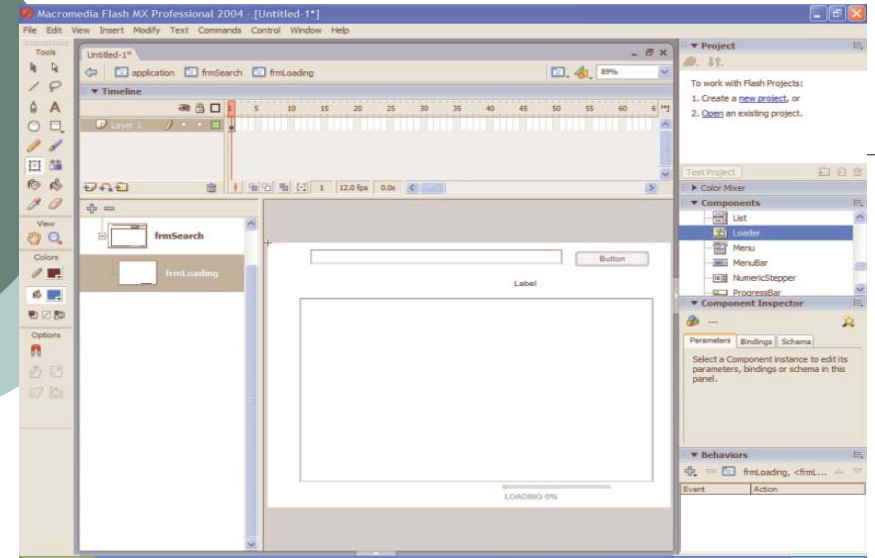


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Add an animated "loading" element that lets the user know the search is executing:

- ❖ Select the frmLoading form screen.
- ❖ Add a text tool element (that says "Loading..."), then add a Timeline Effect. To do this, right click the text tool element you created and choose > Timeline Effects > Effects and then your selected effect to create an animation without any authoring at all.
- ❖ To prevent the loading widget from appearing, select frmLoading and change the visible property in the Parameters inspector to false. Later we'll make this screen visible with ActionScript while the search is executing.

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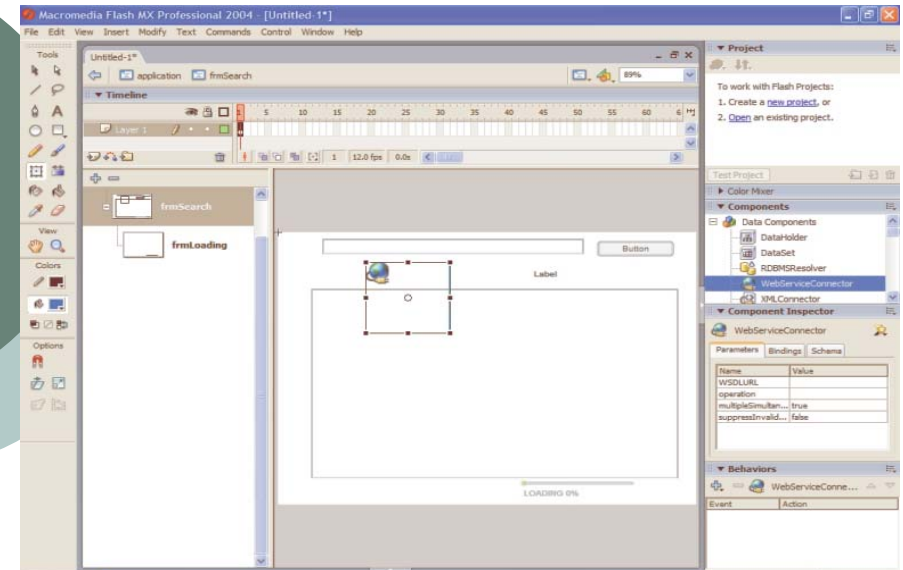


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B) Connecting to Data Sources with Components

- ❖ To connect your application to the Google search service:
Drag a WebServiceConnector component from the Components panel to the form screen. It doesn't matter where you put it - the component won't be visible in the published application. Give the component an instance name of **GoogleSearch**.

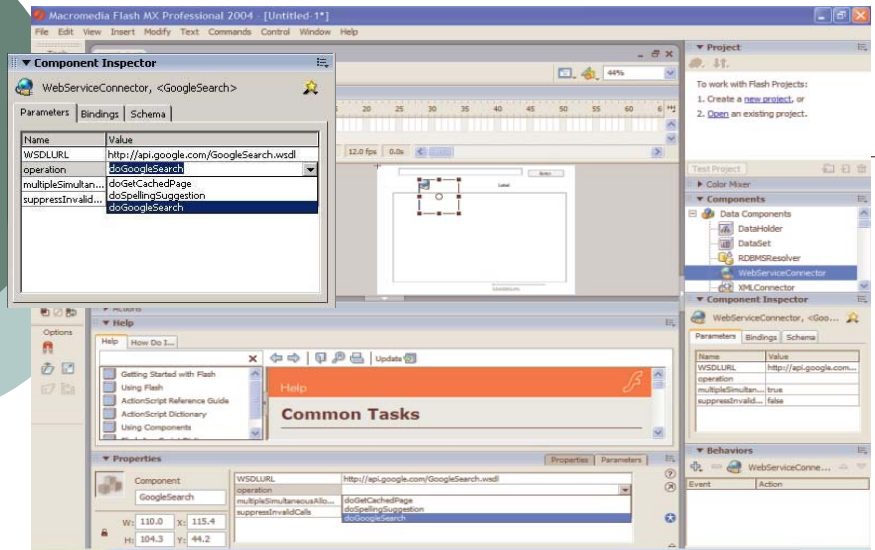
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- Select the GoogleSearch component and open the Component inspector. This is where you establish the web service settings. Select the Parameters tab and set the WSDLURL parameter to Google's WSDL URI (<http://api.google.com/GoogleSearch.wsdl>). Flash automatically queries the service and retrieves its available operations.
- From the operations pop-up menu, select doGoogleSearch.

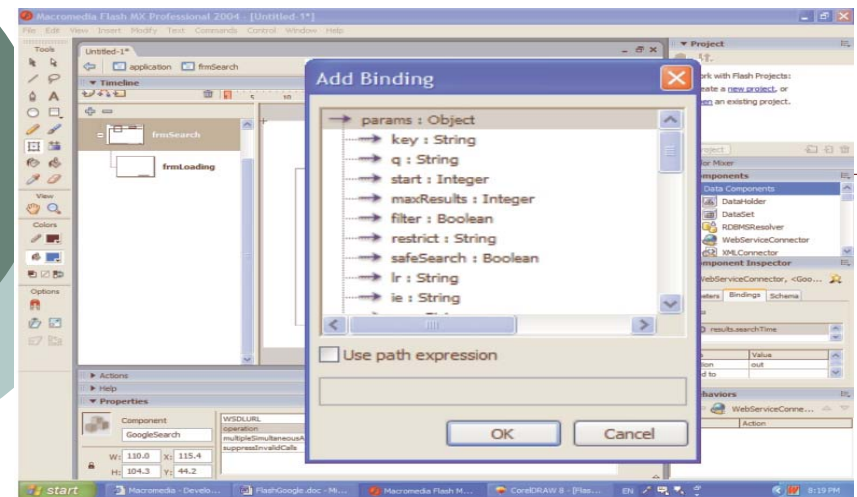
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Building a Google Search Application with Macromedia Flash MX Professional

- The Bindings tab in the Component inspector allows you to bind the web service inputs and outputs directly to a UI component in the application.
- Click the + icon to choose which parameters to bind. Input parameters are indicated by a right arrow and output parameters by a left arrow. The Google interface requires all these input parameters. We are also binding one output parameter, results.searchTime.

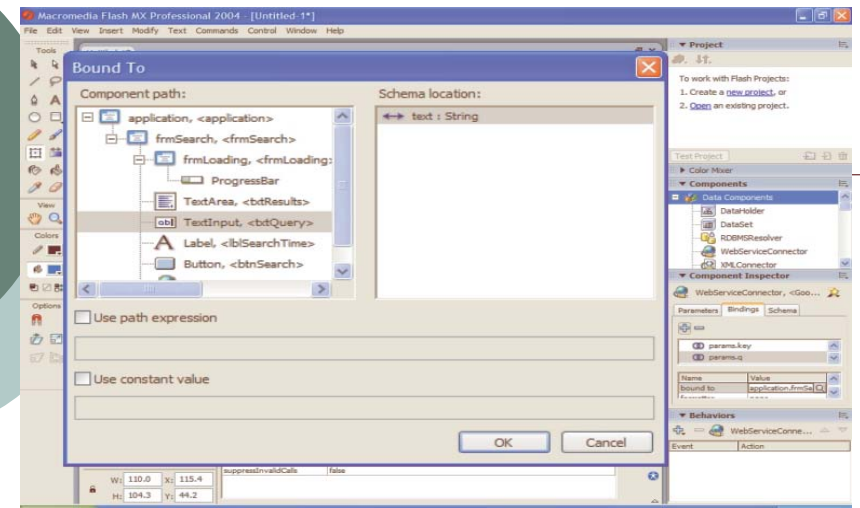
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- ❖ For each binding in the list, you need to set a UI component, a variable reference, or a literal value to pass to or from the web service.
- ❖ For instance, to bind params.q (the search query string to pass to the Google service) to the TextInput component on the frmSearch form, select params.q from the binding list and click the "find" icon in the Bound To row .
- ❖ In Bound To dialog box, which displays a hierarchical list of components in your application, select txtQuery component instance.

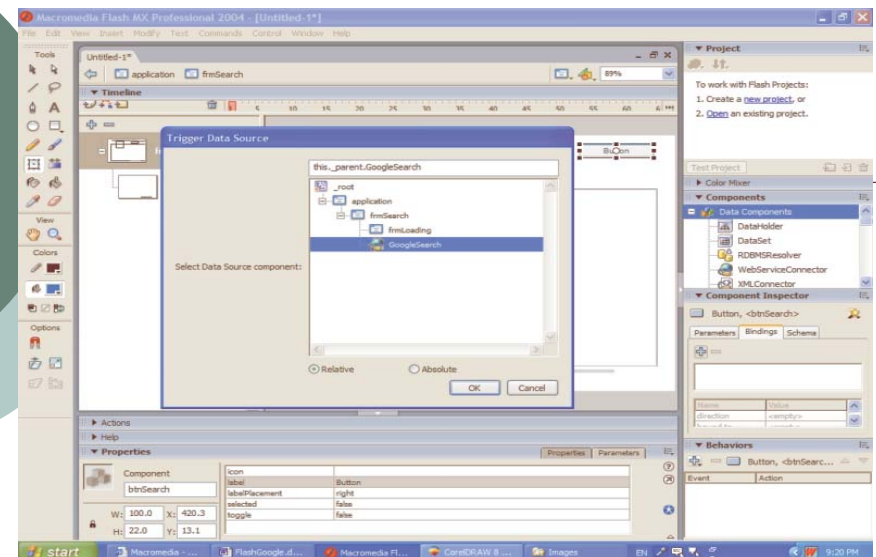
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- ❖ Similarly, we fill in the rest of the input parameters for the Google service.
- C) Attaching Script Actions**
- ❖ ActionScript 2 is used to associate behaviour with components.
 - ❖ To trigger the web service and display its results:
 - ❖ Click the btnSearch button on frmSearch.
 - ❖ In the Behaviors panel, click the + icon and choose Data > Trigger Data Source. - In the resulting dialog box, select GoogleSearch WebServiceConnector

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Building a Google Search Application with Macromedia Flash MX Professional

- ❖ Now when the user clicks the Search button the web service is triggered.
- ❖ Web service output which we can't bind in the Component inspector must be handled with code.
- ❖ For instance, add event listeners which allow us to intercept the web service's *send* and *result* events and perform additional operations with ActionScript.
- ❖ Add the ActionScript functions that handle these events.
- ❖ In particular, enable/disable components while the search is in progress
- ❖ iterates through the results returned from Google, format them using HTML, and display them in the txtResults TextArea .



Building a Google Search Application with Macromedia Flash MX Professional

D) Publishing the Application

File > Publish



Some Flash Links

www.2advanced.com

www.eye4u.com