Creating Mashups in the 4D Ajax Framework Client

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Abstract

Web 2.0 is making fast advancements in the world of rich Internet applications. Interactive websites are becoming an essential piece of the web experience that users wish to have. The 4D Ajax Framework provides the best platform to build rich Internet applications in 4D. This technical note will focus on creating a rich Internet "mashup" utilizing the 4D Ajax Framework Client.

Installation and Developer Documentation...

This technical note does not cover the installation of the 4D Ajax Framework nor the Developer documentation. If would like to read the Installation or Developer documentation you can download both documents from here:

http://www.4d.com/support/documentation.html

A "Mash" what...

A mashup is a website or application that combines content from more than one source into an integrated experience. Content for mashups is typically sourced through a public interface or API. Many companies are providing APIs so that Internet applications can gain access to their data. Such companies doing this are Google, eBay and Yahoo, just to name a few.

A Google Maps Mashup...

This section explains how to build a simple Google Maps mashup in the 4D Ajax Framework Client from the ground up.

Step 1 – Create a new 4D database

Create a new, blank database.

Step 2 – Create the table structure

Rename the default [Table 1] to [Address Info]

Add 4 fields to [Address Info] as follows:

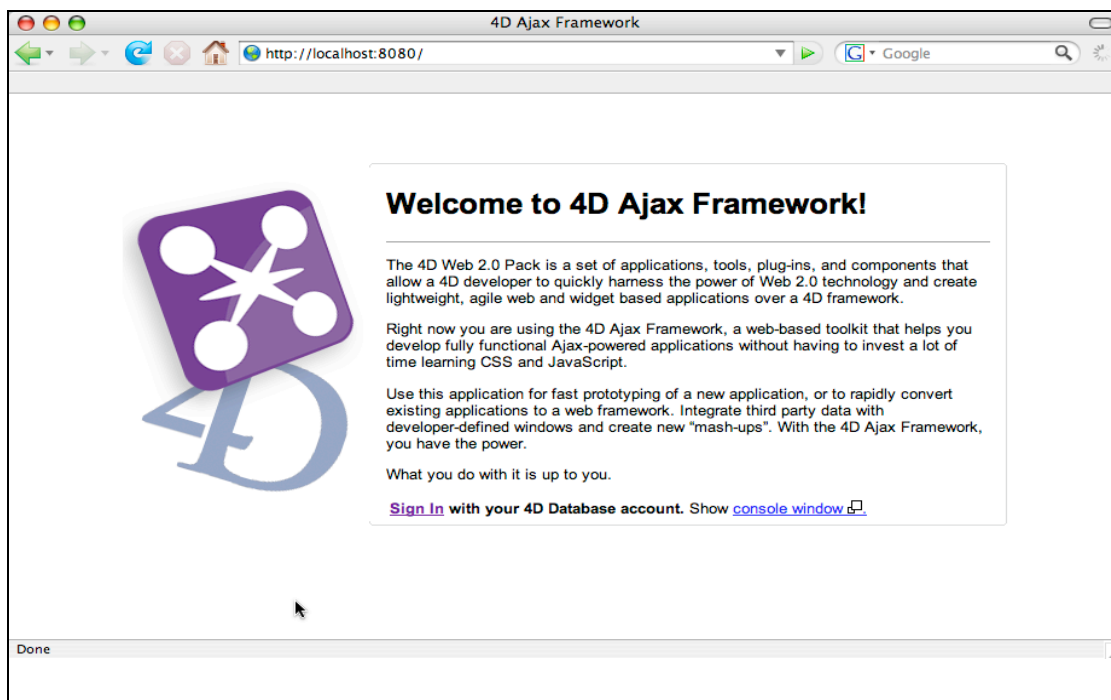| Field Name	Type
Street	Alpha 40
City	Alpha 20
State	Alpha 2
ZipCode	Alpha 5

Step 3 – Generate default forms

Switch to User Mode and allow 4D to create the default forms for the [Address Info] table. Enter a few records so that you have some data to work with. Note: the address information should be valid since it will be used later to get a Google Map for the specified location.

Step 4 – Install the 4D Ajax Framework
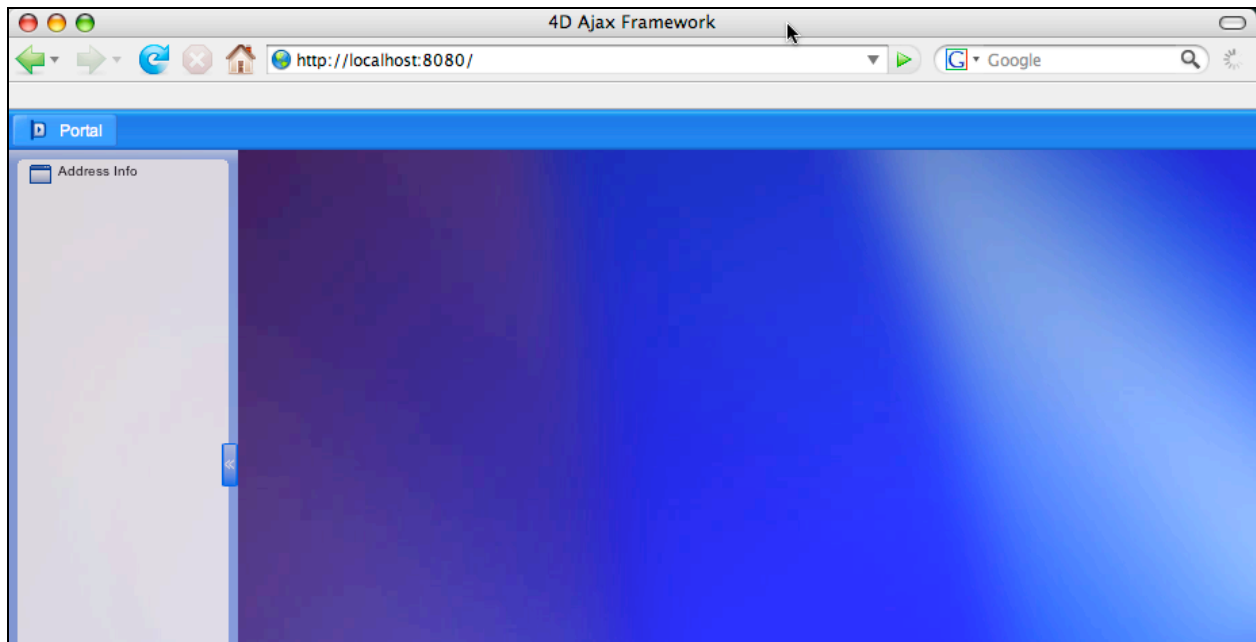
Install the 4D Ajax Framework. Refer to the "4D Ajax Framework Installation Guide" if needed.

Step 5 – Test the 4D Ajax Framework installation

When you have the 4D Ajax Framework installed, test the installation by choosing **Test Web Server** from the **Run** menu in Design Mode. A successful test should yield a page that looks like this:
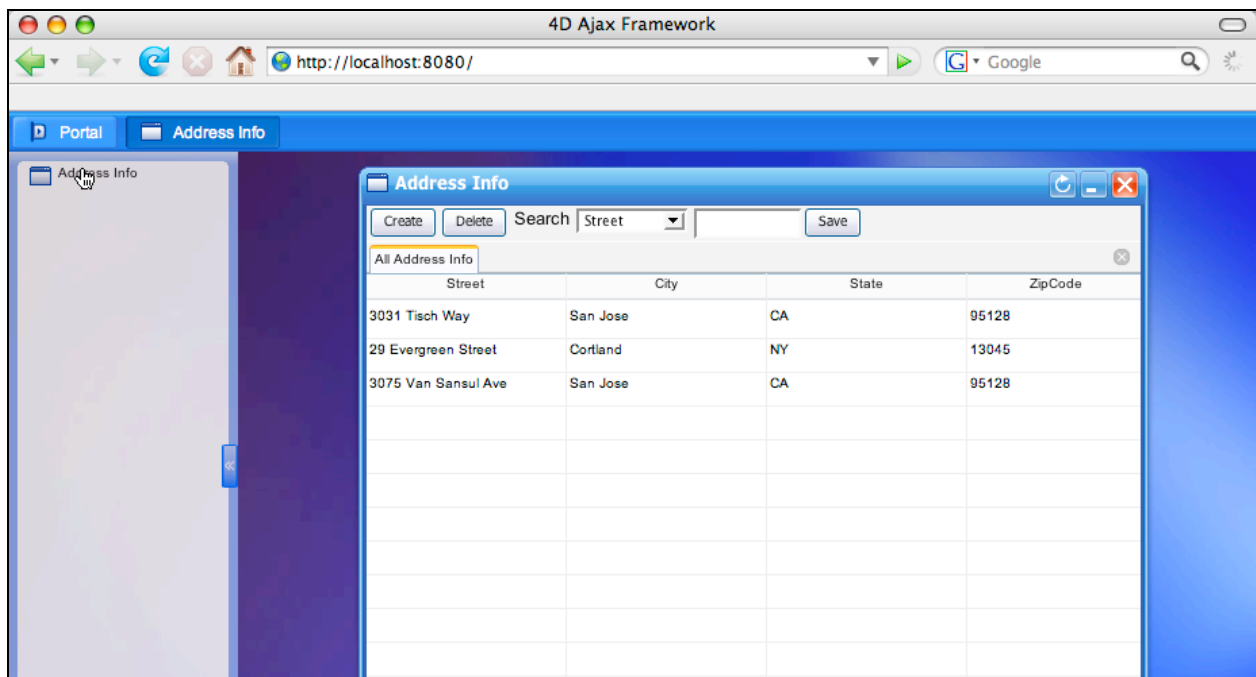
Next log into the 4D Ajax Framework Client as 'Administrator'. Upon logging in you should see a page that looks like:
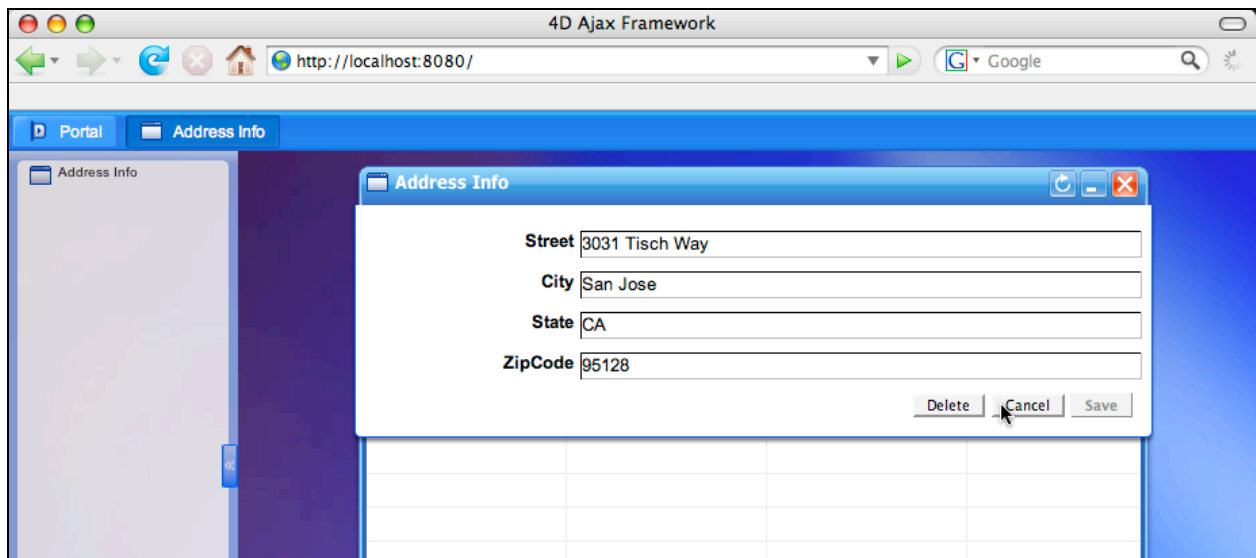

With this screen present, we are ready to move on to creating the Google Maps mashup.

Note: If you click on the "Address Info" Portlet in the Portal, notice that you can view your data in the Selection Window that opens, as shown below:

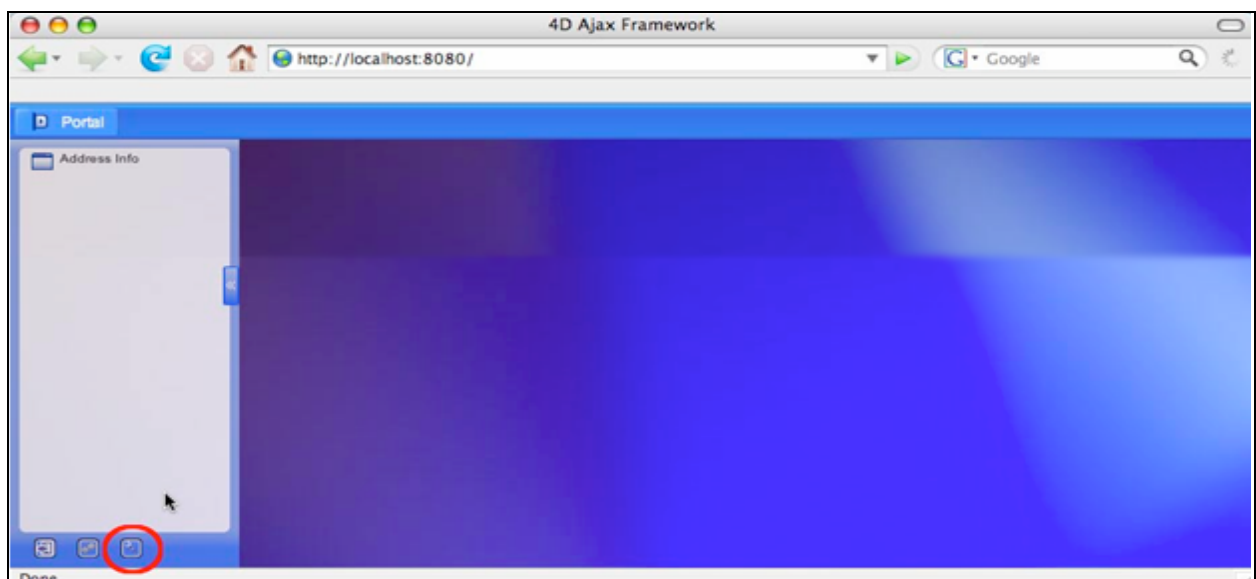If you then double-click a record you can edit it:

All of this functionality is enabled without writing a single line of 4D code!

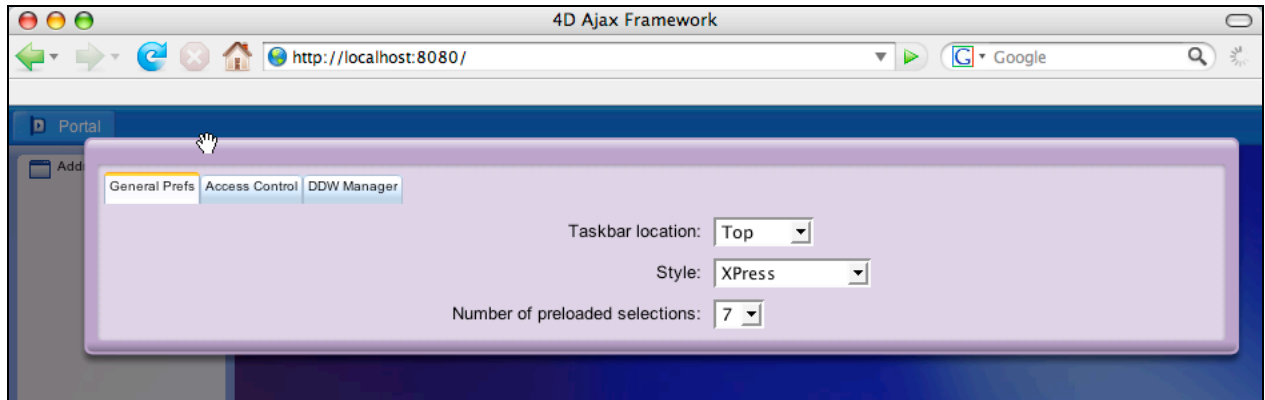## Step 6 – Create a Developer Defined Window

The next step is to create a "Developer Defined Window" or DDW for short. Developer Defined Windows give developers the ability to add a window with any HTML content they want on the front-end. The developer can have the window display an HTML blob or content from any valid URL. A DDW can display anything that can be displayed in a web browser.

We first must define our DDW inside of the 4D Ajax Framework Settings. The Settings button is at the bottom right hand side of the Portal panel, circled below:
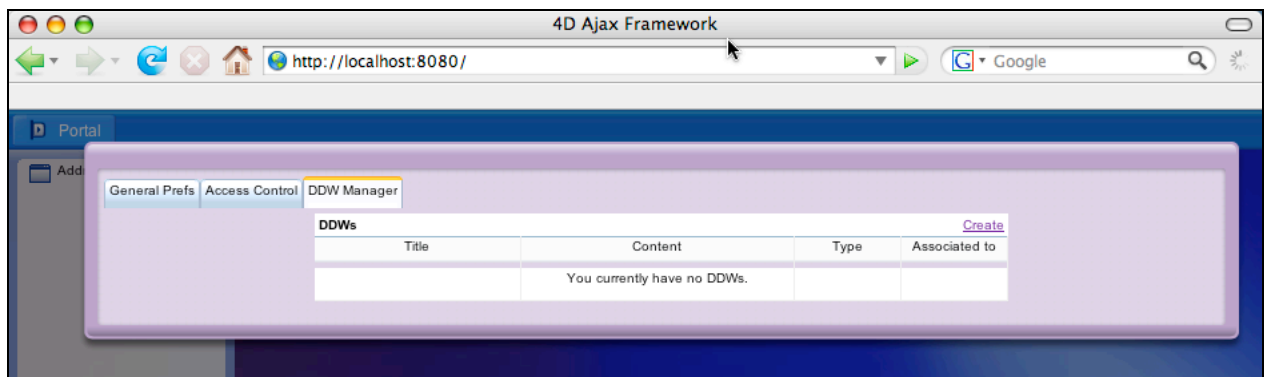
Note that you must be logged in to the 4D Ajax Framework Client as "Administrator" in order to see this button.
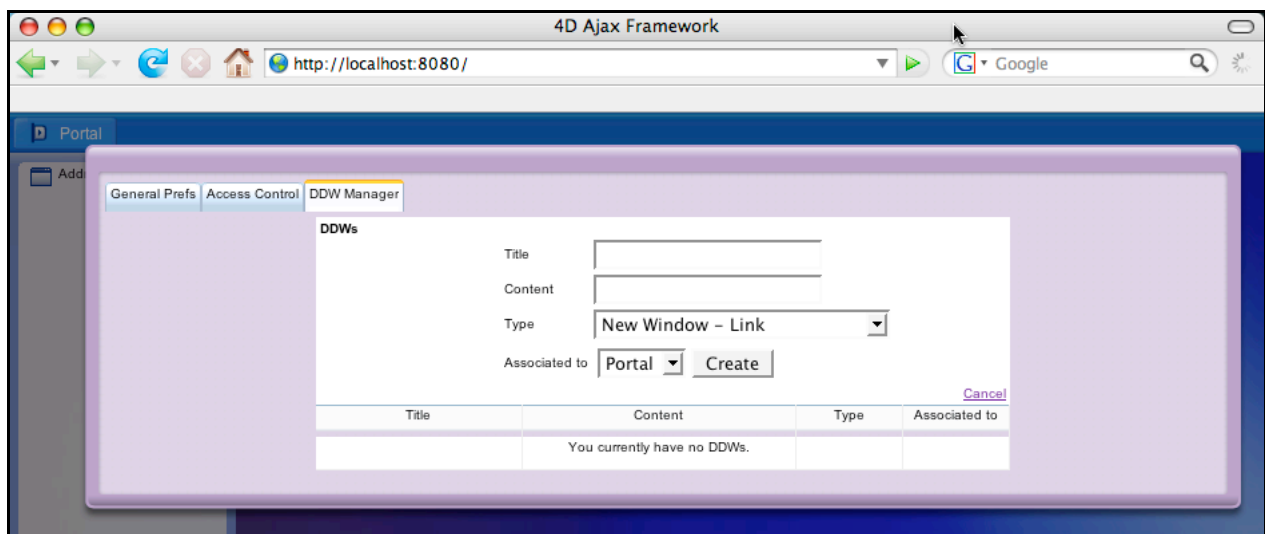
Clicking this button will display the Settings dialog:

Click on the **DDW Manager** tab in order to create a new DDW:

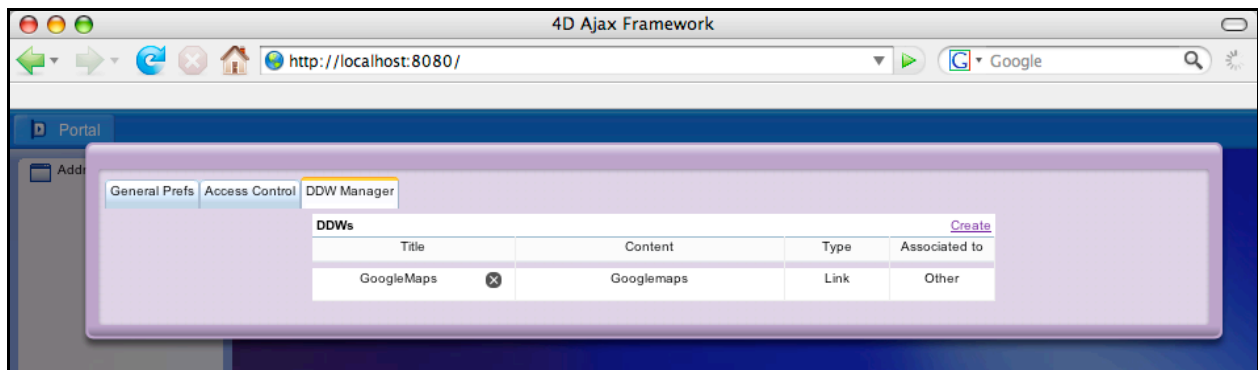Click the 'Create' link in the upper right corner to create a new DDW:
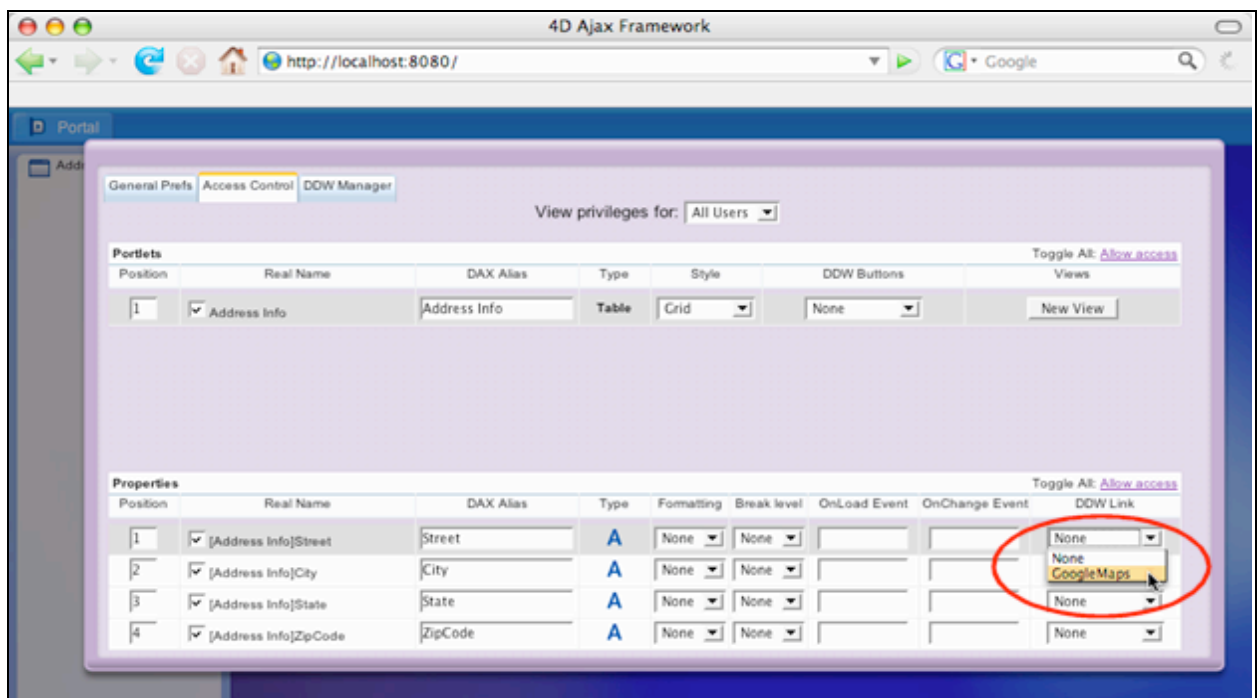
Use the following information to create the DDW:

Title	GoogleMaps
Content	GoogleMaps
Type	New Window – Link
Associated to	Other

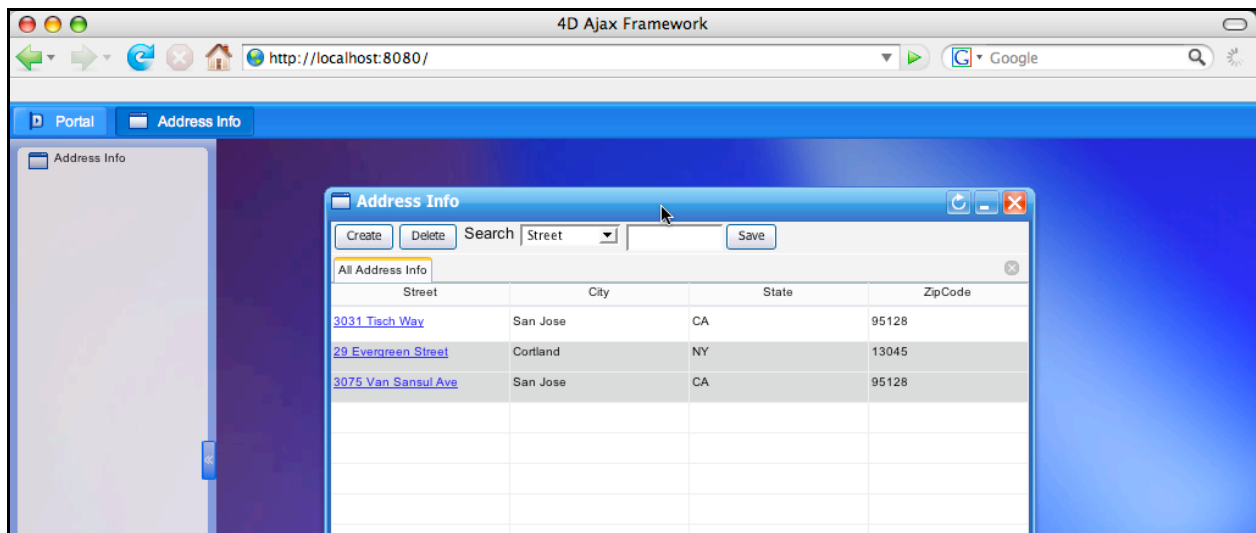Then click the 'Create' button to create the DDW.

You should end up with:

After creating the DDW, click on the **Access Control** tab in the Settings dialog. This is where you will set the usage of your newly created DDW. You can set it to encompass the any or all of the fields on the Address Info View. For the purposes of this mashup assign the GoogleMaps DDW to the [Address Info]Street field:

Once we assign it we can exit the Settings dialog. If you open the Address Info Selection Window, you can see that the "Street" field now acts as a hyperlink:

Step 7 – Add code to power the DDW

We need to write the code to power the GoogleMaps DDW that we created. Let's go into 4D and do this. Create a new Database Method called 'GoogleMaps'. Edit this method and paste in the following code:

```
ARRAY LONGINT($Recordnumber_al;0)
C_POINTER($TablePointer_p)

$TablePointer_p:=DAX_Dev_DDW_GetAttributes("TablePointer")
DAX_Dev_DDW_GetAttributes("RecordNumbers";->$Recordnumber_al)

If (SIZE OF ARRAY($Recordnumber_al)>0)
        GOTO RECORD($TablePointer_p->;$Recordnumber_al{1})

        If (RECORDS IN SELECTION($TablePointer_p->)>0)

                $URL:="http://maps.google.com/maps?f=q&"
                $URL:=$URL+"hl=en&"

                $address:=[Address Info]Street+",+"+[Address Info]City+",+"

                If ([Address Info]State#"")
                        $address:=$address+[Address Info]State
                End if

                $address:=$address+",+"+[Address Info]ZipCode
                $address:=REPLACE STRING($address;" ";"+")

                $URL:=$URL+"q="+$address+"&ie=UTF8&z="
                $URL:=$URL+"&iwloc=addr"
```
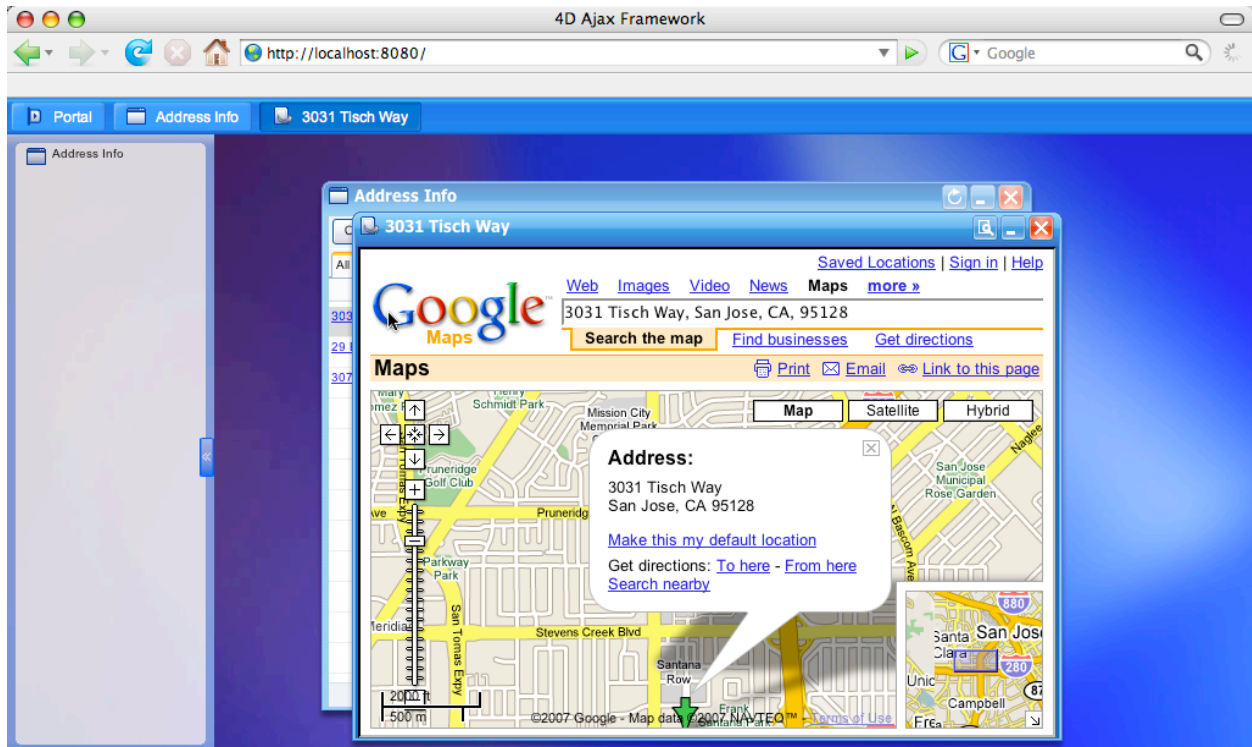
```
                    $0:=$URL
            End if
    End if
```

This method takes advantage of the Google Maps API to get a map that corresponds to the selected address.

Close the method editor, go back to your Web browser window, and try clicking on a Street link. You should see something like the following:

That's it! We have now built a Google Maps mashup.

Conclusion

With 4D Web 2.0 Pack we have the power to build rich internet applications combined with the ease of working with 4D. As you can see in this Tech Note building a Web 2.0 mashup with the 4D Ajax Framework Client is quite easy. The 4D Ajax Framework is a powerful addition to any 4D project.

Related Resources

4D Ajax Framework Installation Guide and Developer Guide:
http://www.4d.com/support/documentation.html

4D Web 2.0 Pack Wiki:
http://daxipedia.4d.com