

Play Random Music

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This sample application randomly plays music files. You may use it to play background music while you are working with your computer every day.

Performers it uses: File Explorer, Media Control, Math Expression, and Button.

This application works in such a way: you have many music files saved in a folder. You use the File Explorer performer to locate the files. The File Explorer performer numbers the files from 0, 1, 2, ... to file count -1. You use a Math Expression performer to generate a random number between 0 and file count -1. You use a Media Control to play the file indicated by that random number. When the music finishes, another random number is generated and another music file plays, and so on.

Now you have a program to play music randomly so that you will not get bored.

Let's start making it.

Let's create a new application named RandomMusic. Limnor will create a file named RandomMusic.ezp for you. Later, you may run the application by simply double-clicking this file.



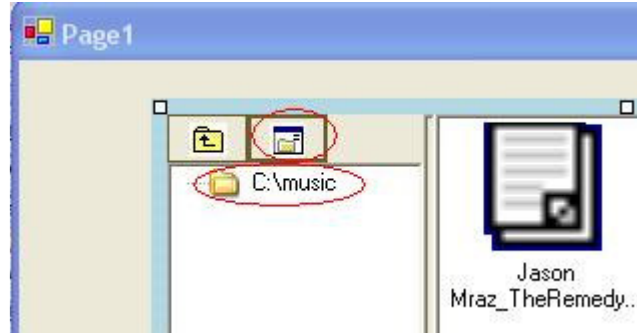
For more information on creating Limnor applications, please refer to Lesson 1 and Lesson 2 of the Limnor Tutorial.

Drop a File Explorer performer to the page:

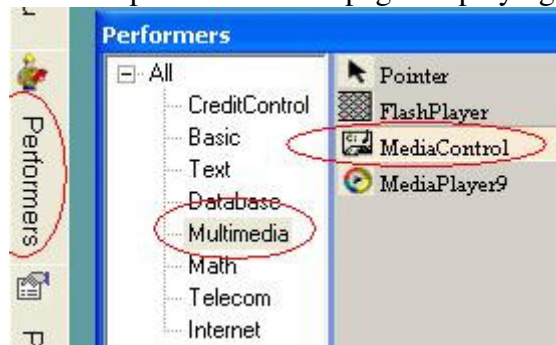


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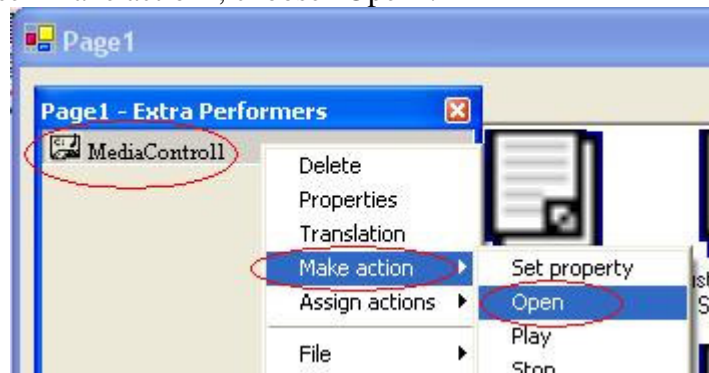
Click the browse button on the File Explorer performer and find the folder where you save the music files:



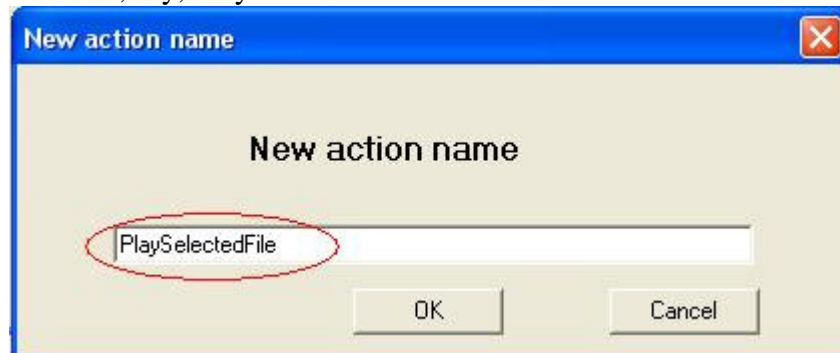
Now let's drop a Media Control performer to the page for playing the music files:



Because the Media Control performer does not have a user interface, it appears in the Extra-performers window at the design time. Right-click on the Media Control performer, choose "Make action", choose "Open":

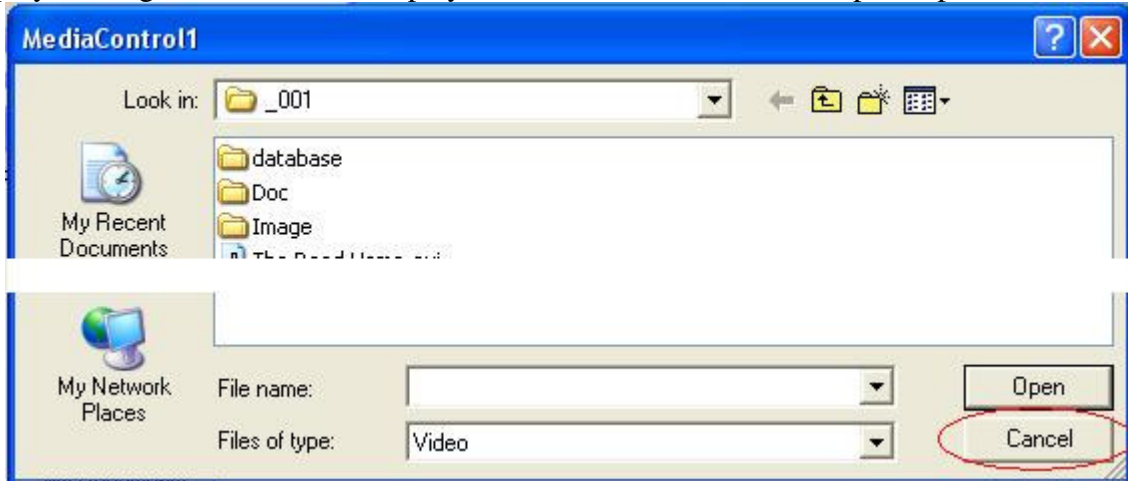


Give an action name, say, PlaySelectedFile:

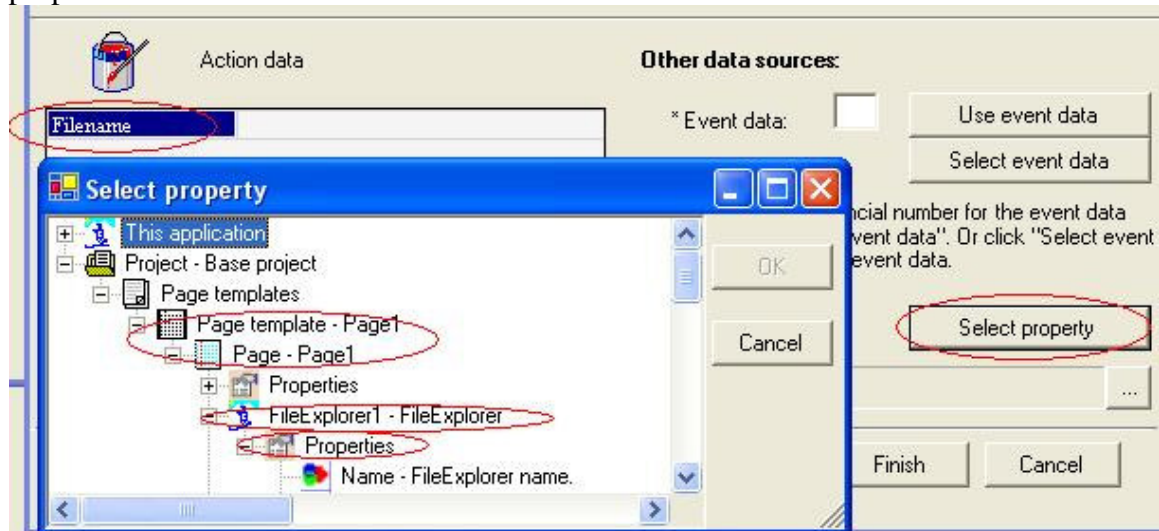


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It will ask you to pick a file to play. Click Cancel button because we do not pick a file to play at design time. We want to play the selected file in the File Explorer performer:

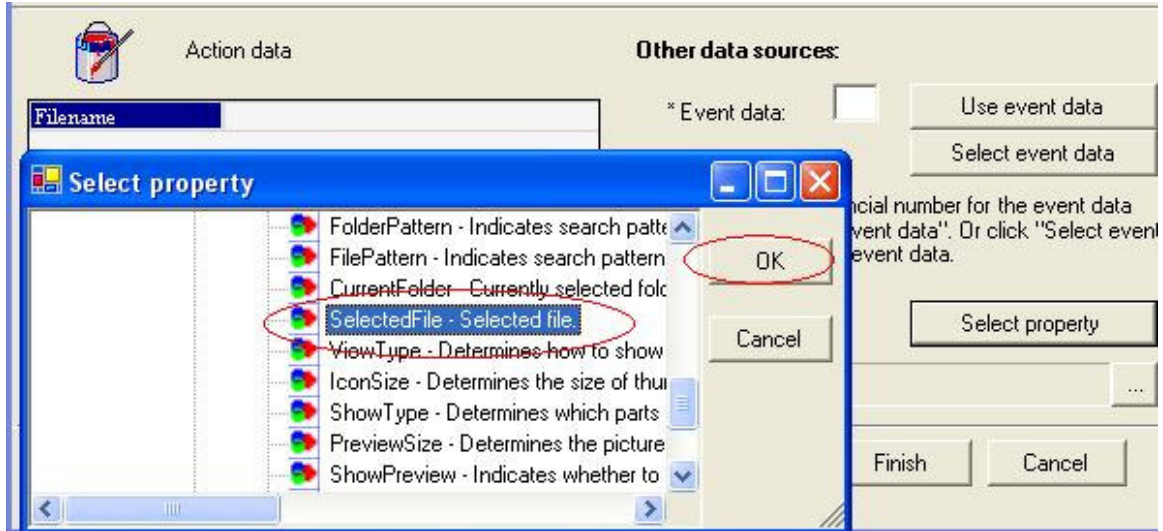


The Action Data dialogue box appears. It asks for the Filename. Click "Select property" button. Select the page containing the File Explorer performer, expand File Explorer's properties:



Scroll down and find the "SelectedFile" property:

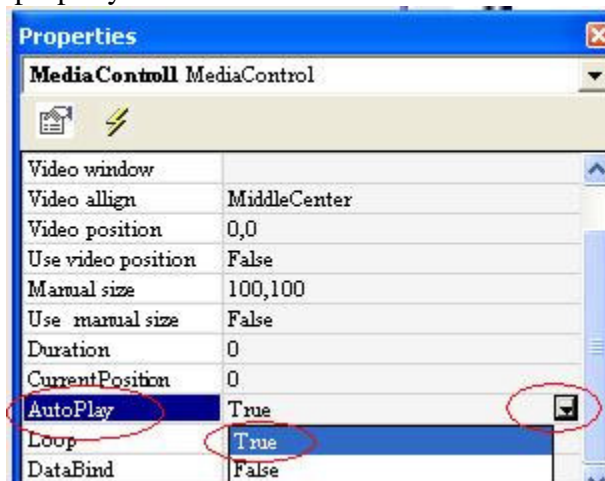
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This action opens the selected file. To let it start playing right way, we may set the “AutoPlay” property to True. Right-click on the Media Control performer, select Properties:

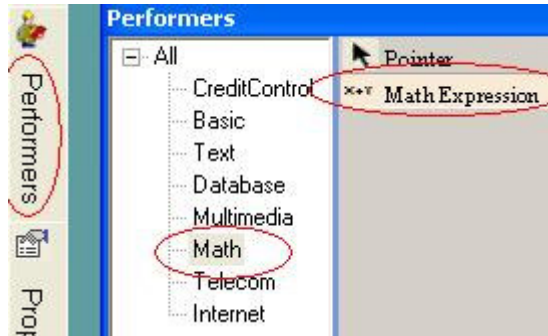


Choose the AutoPlay property and set it to True:

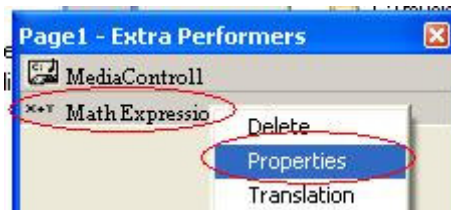


We now have an action to play the selected file. Now we need to randomly select a file. First, we need a Math Expression to generate a random number. Drop a Math Expression performer to the page:

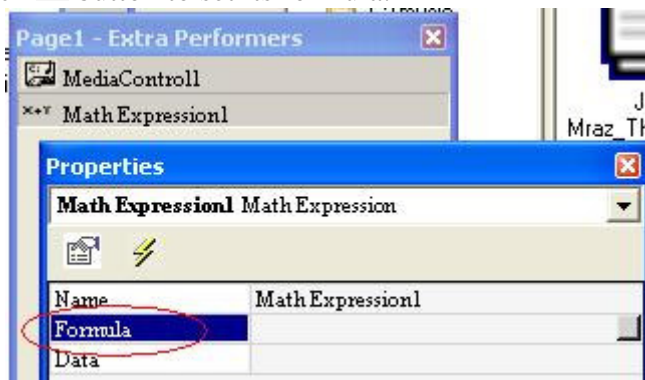
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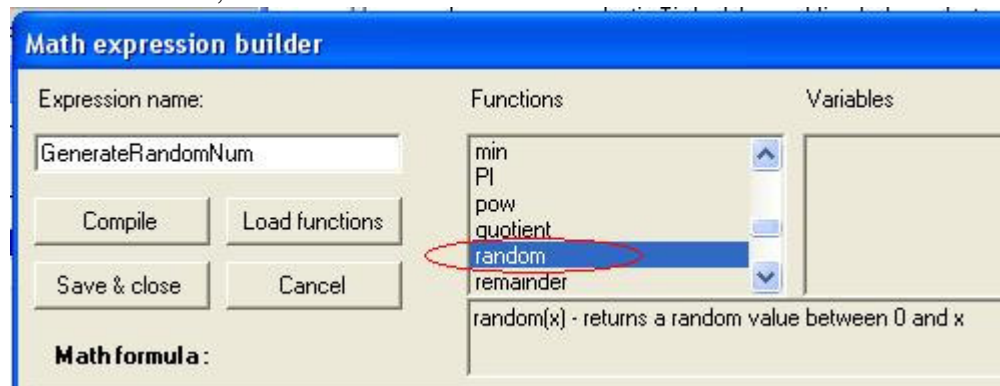
The Math Expression performer does not have a user interface, so it appears in the Extra-performers windows. Let's set its formula property. Right-click on the Math Expression performer, select Properties:



Select Formula, click  button to set its formula:

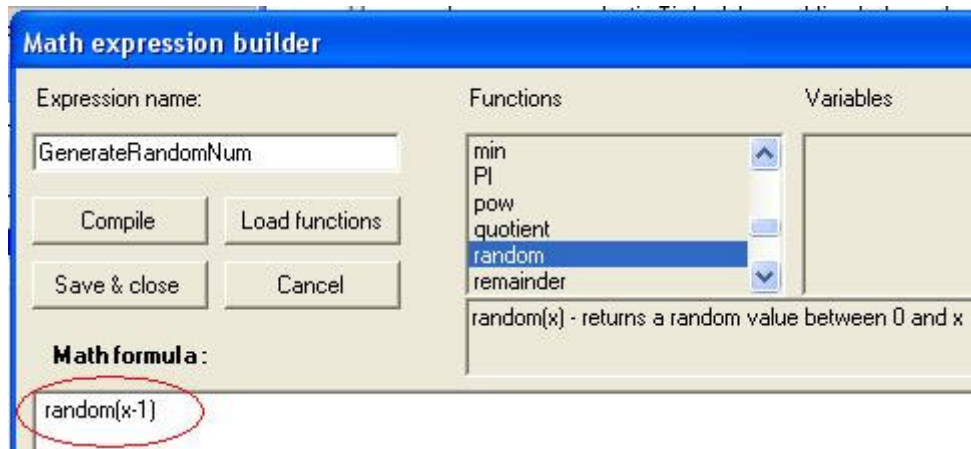


Find random function; double-click it to use this function:




You may select each function to see its description. You can see that random(x) function will return a random number between 0 and x. We want it to return a random number between 0 and File Count -1. So we set the formula to be random(x-1), where x is the file count:

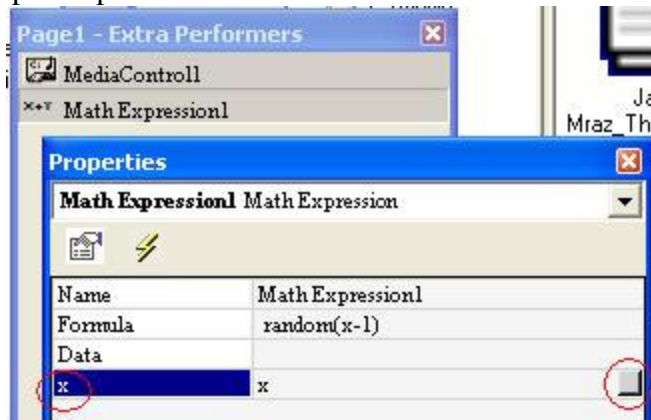
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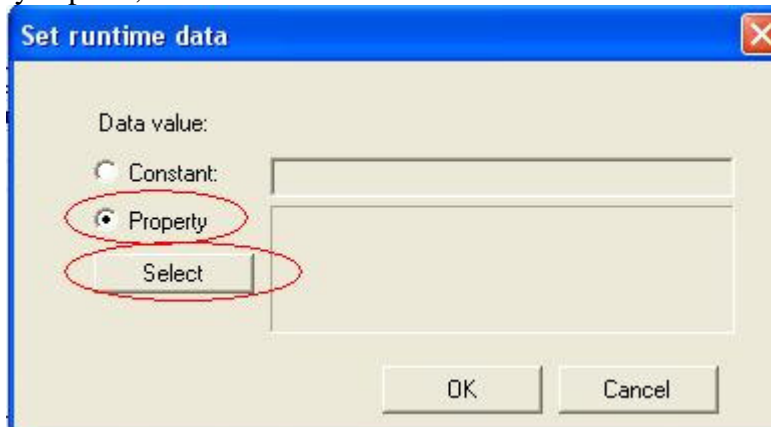
If you are using a complex formula, you may click Compile button to see if you type the formula right.

Click “Save & close” button to finish creating the formula.

You see now that the variable x becomes a property. Click  button to set it to the file count of the File Explorer performer:

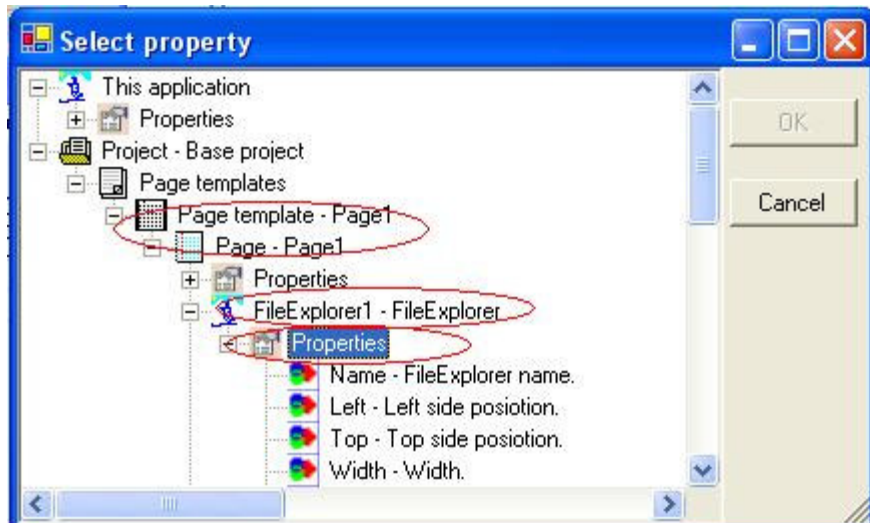


Select “Property” option, click Select button:

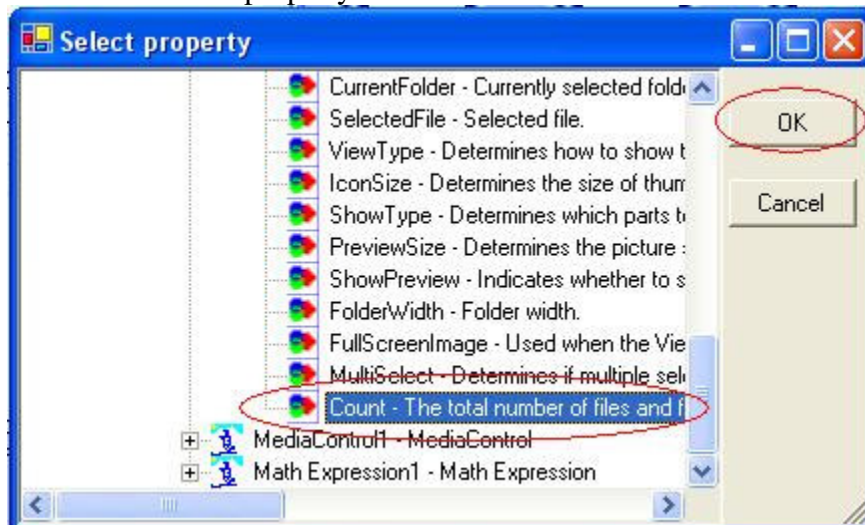


Find the page containing the File Explorer performer, expand its properties node:

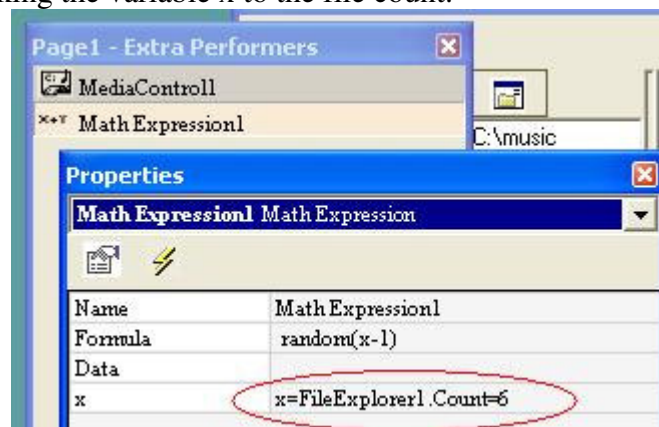
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Scroll down to find its Count property:

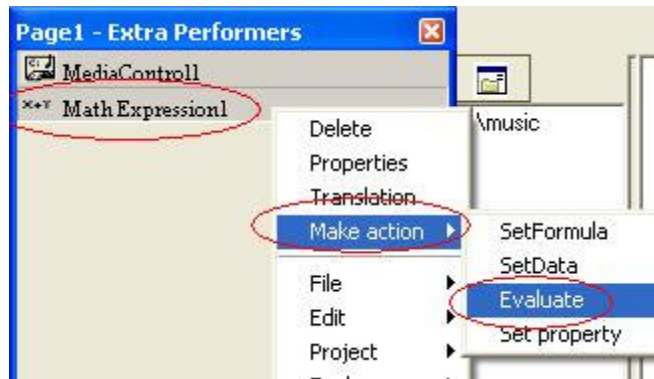


Now we finish linking the variable x to the file count.



We have the formula, now we need to make an action to get its value. Right-click on the Math Expression performer, choose "Make action", choose "Evaluate":

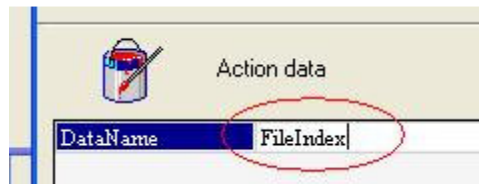
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Give an action name, say, GenerateFileIndex:

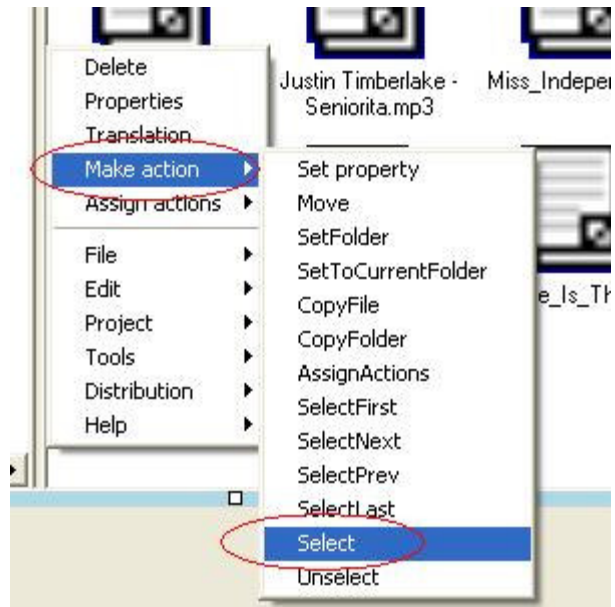


The Action Data dialogue box appears. It asks for a DataName. This is a variable name the Math Expression uses to save the calculation result. We may give it any name. Here let's call it FileIndex:



Now we have a value named FileIndex in the Math Expression. We will use this value to select the file in the File Explorer performer. Right-click on the File Explorer performer, choose "Make action", choose "Select":

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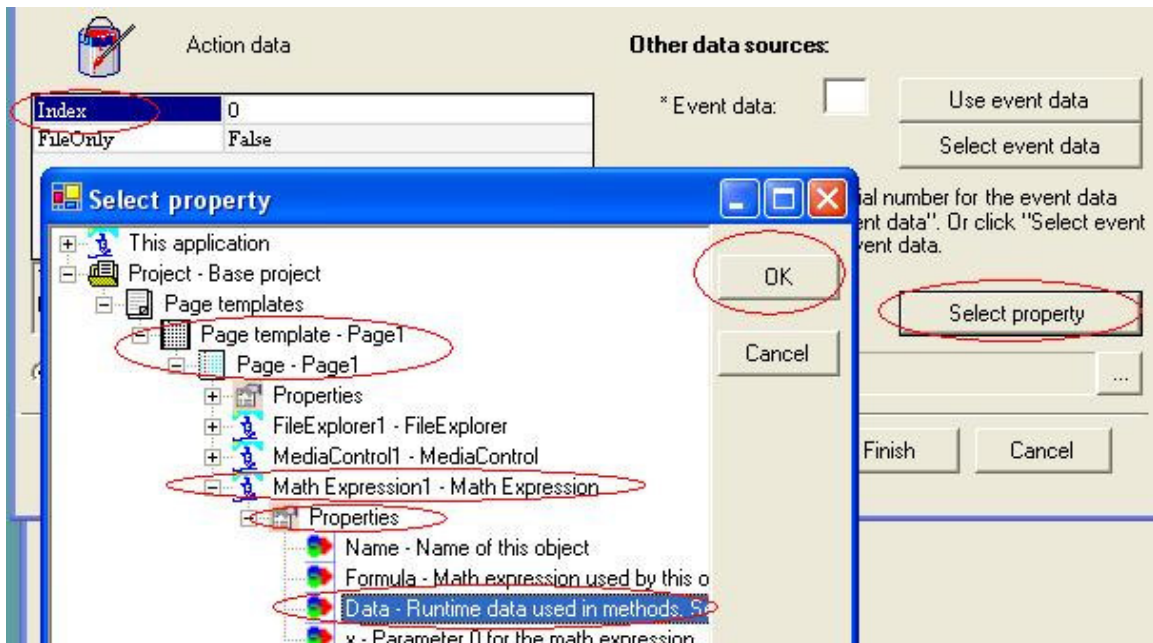


Give an action name, say, SelectRandomFile:

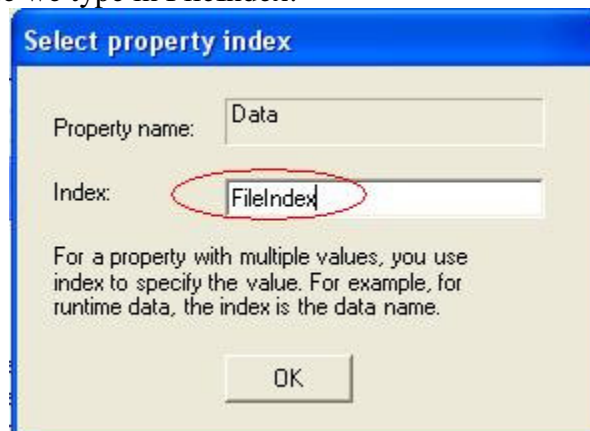


The Action data dialogue box appears. Index is the file index to be selected. We need to use FileIndex value in the Math Expression performer. Click “Select property” button, find the page containing the Math Expression performer, expand its properties node, select its Data property:

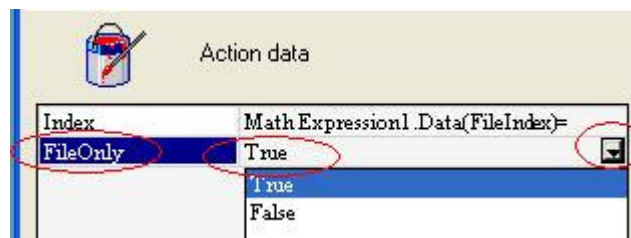
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It asks for Index. Here we type in FileIndex:



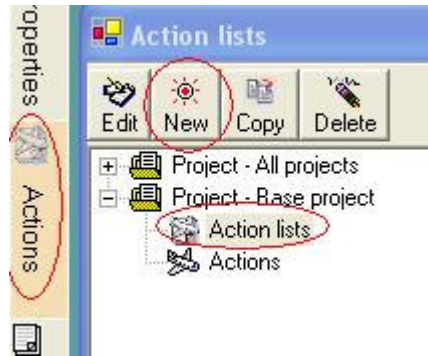
For FileOnly, we set it to True so that if the file index points to a folder, it will move to the next item.



Now we have all the actions we want: GenerateFileIndex will generate a random file index, SelectRandomFile will use the file index to select the file, PlaySelectedFile will play the selected file.

We need to make an action list to include the above three files. Click Actions button to bring up "Action lists" window, select Action lists and click New button:

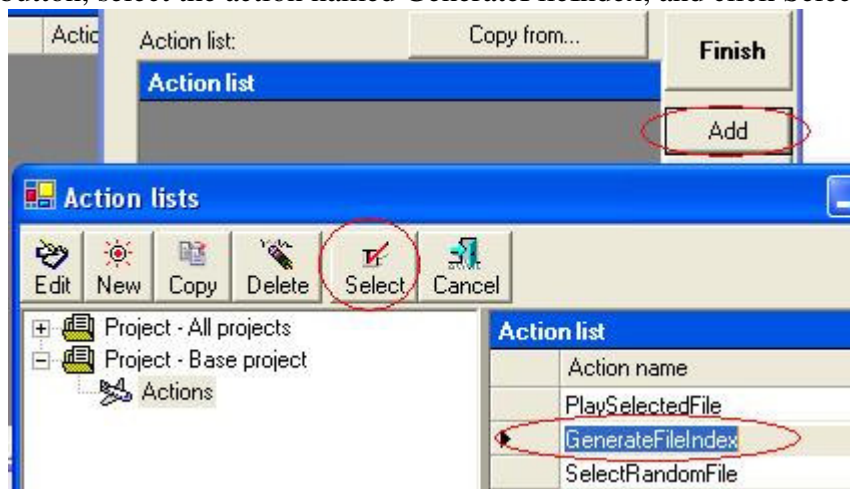
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Give an action list name, say, PlayRandomMusic:



Click Add button, select the action named GenerateFileIndex, and click Select button:



This action is added to the action list:

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In the same way, click Add button again to add action SelectRandomFile and PlaySelectedFile to the action list:

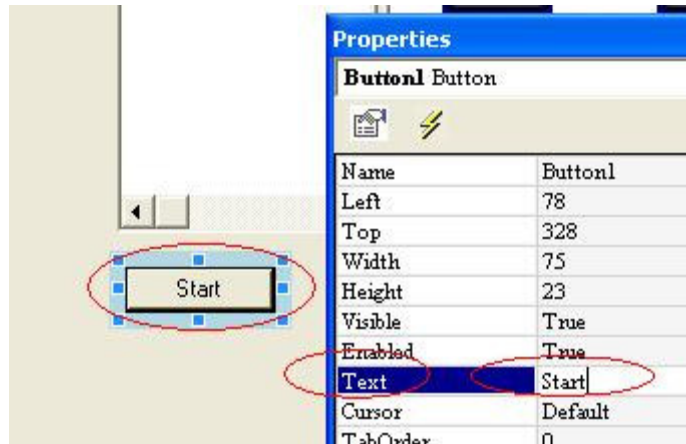


Note that the order of the actions in the action list is important.

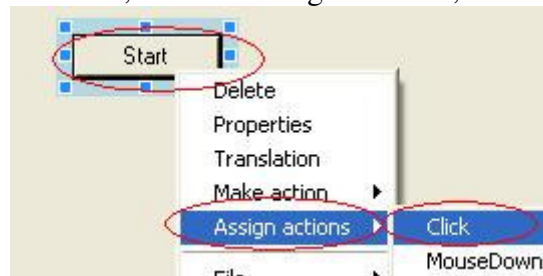
Every time this action list is performed, a music file is randomly selected and played. We will add a button to the page so that we may perform the above action list when the user clicks on the button. We will also program it so that when it finishes playing a music file, another music file is randomly selected and played so that you have endless random music.

Drop a button performer to the page, set its Text property to “Start”:

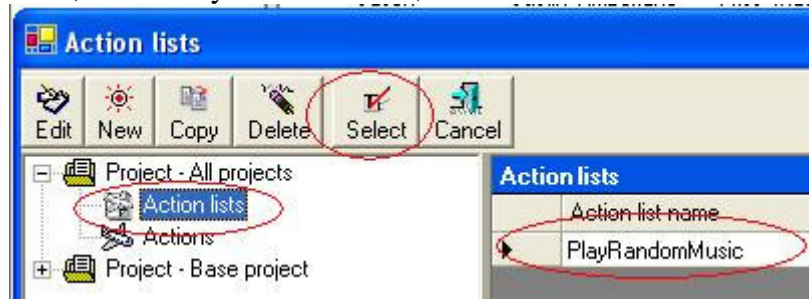
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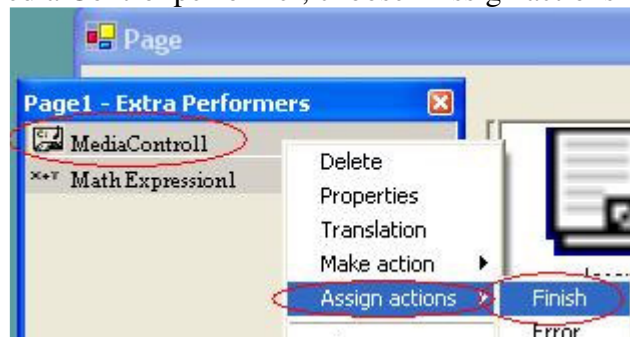
Right-click on the “Start” button, choose “Assign actions”, choose “Click”:



Select Action lists, select PlayRandomMusic, click Select button:

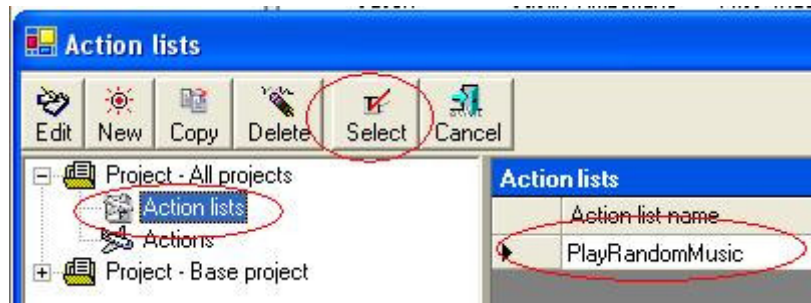


Now, when the user clicks the button, a music file will be randomly selected and played. To make it automatically play another random music file when one music file finishes, right-click on the Media Control performer, choose “Assign actions”, choose “Finish”:



Select Action lists, select PlayRandomMusic, click Select button:

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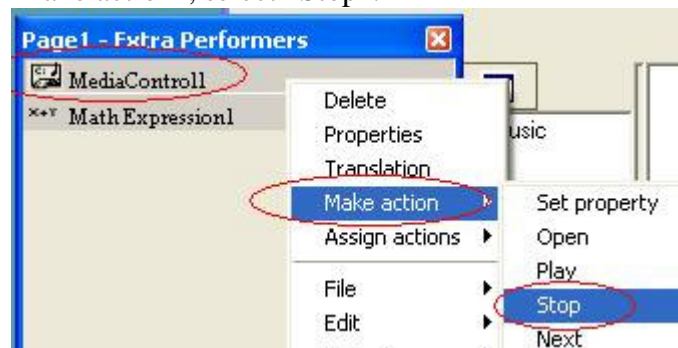


“Finish” is an event which happens when the Media Control performer finishes playing a media file (a music file or a video file).

Now we basically finish our programming. You may press F2 key to run it now. While your application is running, press F2 again will bring it back to the design mode so that you may modify it.

Later, after you close Limnor, you may double-click the application file, RandomMusic.ezp, to run this application.

Now we want to add a button to stop the music. First, let’s make an action to stop the music. Note that a button has no capability of controlling music play. It is the Media Control performer controlling the music play. So we right-click on the Media Control performer, select “Make action”, select “Stop”:



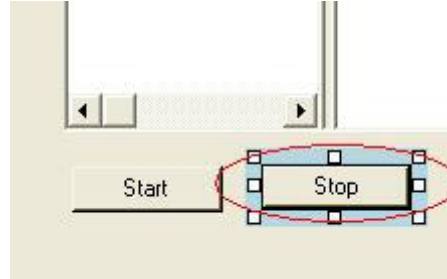
Give an action name, say, StopPlayMusic:



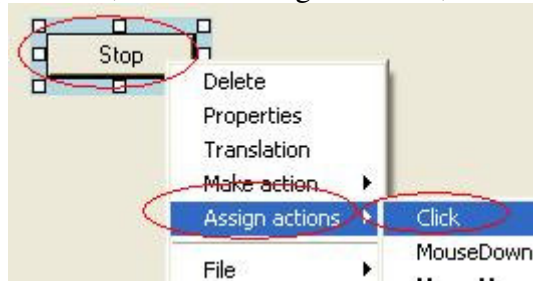
Click OK, and we have an action to stop music.

Now drop a button performer to the page and set its Text property to “Stop”:

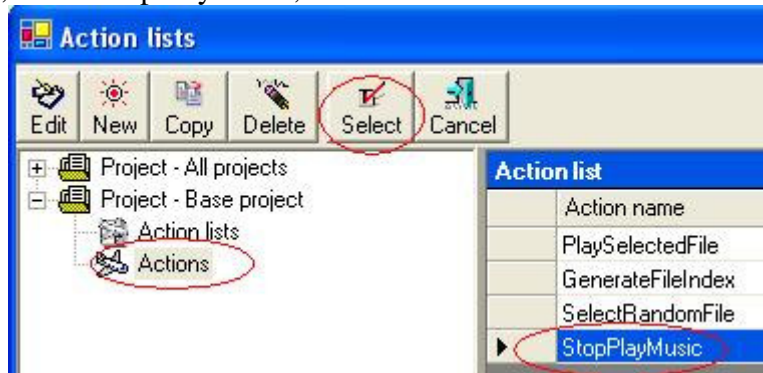
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Right-click on the “Stop” button, choose “Assign actions”, choose “Click”:



Select Actions, select StopPlayMusic, click Select button:



Now when the user clicks on the “Stop” button, the music will stop. Note that when the Media Control performer stops playing by performing “Stop” method, the “Finish” event will not be fired.

This application is completed. You may use it to play background music while you are working.