
REALbasic QuickStart

Welcome to REALbasic!

REALbasic is an application builder based on a modern version of the BASIC programming language. The REALbasic development environment is made up of a rich set of graphical user interface objects (commonly referred to as a GUI), an object-oriented language, a debugger, and a compiler.

With the graphical user interface, you can build your application's interface simply by dragging and dropping interface objects into the application's windows and dialogs.

The object-oriented language, debugger, and cross-platform compiler make up the rest of REALbasic's *Integrated Development Environment* (IDE), designed to make application prototyping and programming easy.

REALbasic provides you with all the tools you need to build virtually any application you can imagine.

If you are new to programming, you will find that REALbasic makes it fun and easy to create full-featured applications. If you are an intermediate or advanced programmer, you will appreciate REALbasic's rich set of built-in tools.

This *QuickStart* is for people who are new to programming and new to REALbasic. It will give you a gentle introduction to the REALbasic development environment, lead you through the development of a real application, and show you what kinds of other applications can be built with REALbasic.

It should take you no longer than 30 minutes to complete this *QuickStart*.

Note If you have experience with other versions of the BASIC language or have experience with other programming languages, you'll want to check out the *Tutorial* and *User's Guide*. In the *Tutorial*, you'll develop a more complete application, which includes menus, dialog boxes, and objects called *classes*.

Presentation Conventions

The QuickStart uses screen snapshots taken from both the Windows and Macintosh versions of REALbasic. The interface design and feature set are identical on both platforms, so the differences between platforms are cosmetic and have to do with the differences between the Macintosh's "Panther" interface and Windows XP's standard appearance setting.

Italic type is used to emphasize the first time a new term is used, and to highlight important concepts. In addition, titles of books, such as *REALbasic User's Guide*, are italicized.

When you are instructed to choose an item from one of REALbasic's menus, you will see something like "choose File ► New". This is equivalent to "choose New from the File menu."

The items within the parentheses are *keyboard shortcuts* and consist of a sequence of keys that should be pressed in the order they are listed. On Macintosh, the Command key is the modifier; on Windows, the Ctrl key is the modifier. For example, the shortcut "⌘-O" is the Macintosh keyboard equivalent. It means to hold down the Command key, press the "O" key, and then release the Command key. The shortcut "Ctrl+O" is the Windows keyboard equivalent and means to hold down the Ctrl key, press the "O" key, and release the Ctrl key.

Bold is used to indicate text that you will type while using REALbasic.

Some steps ask you to enter lines of code into the REALbasic Code Editor. They appear in Frutiger (a sans serif font) in a shaded box:

```
ShowURL SelectedURL.Text
```

When you enter code, please observe these guidelines:

- Type each printed line on a separate line in the Code Editor. Don't try to fit two or more printed lines into the same line or split a long line into two or more lines.
- Don't add extra spaces where no spaces are indicated in the printed code.

Whenever you run your application, REALbasic first checks your code for syntax errors. Syntax checking will direct your attention to the line of code that is causing problems. Check the line against the printed line. The *QuickStart* also has troubleshooting sections that help you handle syntax errors.

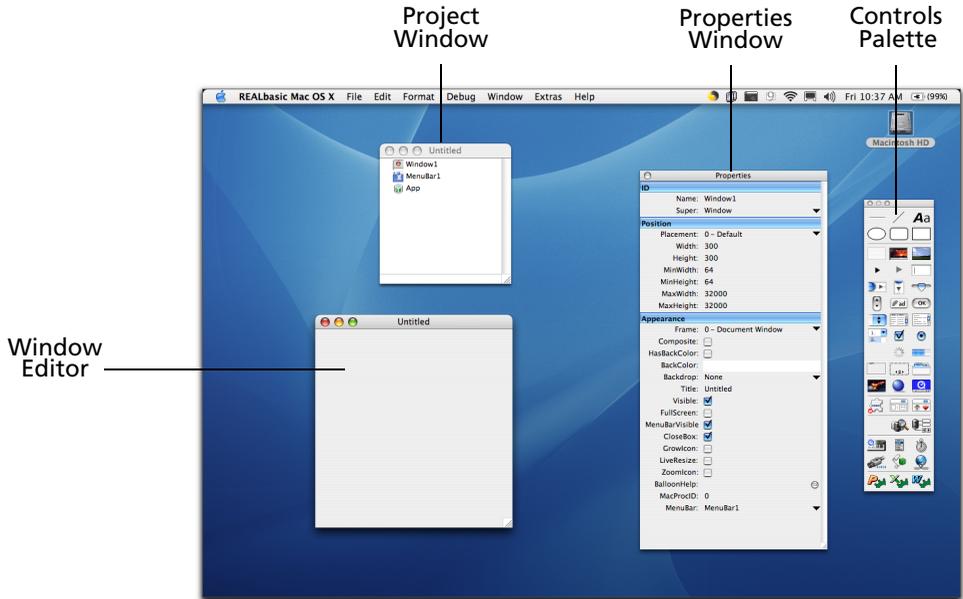
Starting REALbasic

If you haven't done so already, install REALbasic on your computer. If you are using the Macintosh version of REALbasic, drag the REALbasic application from your CD to your Applications folder (or another folder of your choice). If you are using the Windows version of REALbasic, use the REALbasic installer to install the product and all the necessary files onto your computer.

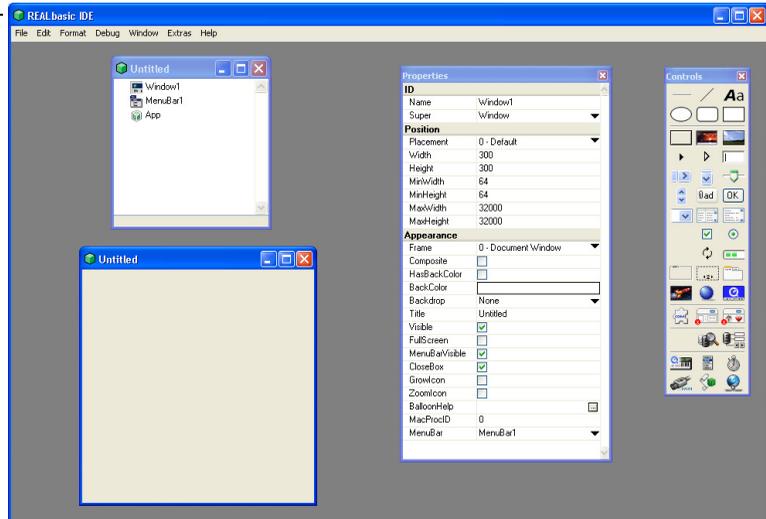


Double-click the REALbasic application icon. In a few moments, the REALbasic Integrated Development Environment appears. If you're using Windows, the Project Window and Window Editor appear within the REALbasic IDE multiple document interface window and the Properties Window and Controls Palette float above this window.

Figure 1. The REALbasic IDE (Mac OS X and Windows XP).



On Windows, the "REALbasic IDE" window contains other REALbasic windows



Note In Figure 1, some windows have been moved from their default positions so you can see them better.

REALbasic's Windows

As you can see in Figure 1 on page 4, there are four windows that open when you start up REALbasic:

- The *Project Window* contains a list of all of the major items that make up your REALbasic application. For example, the Project Window includes items for all the windows that your application uses, the menu bars, and objects such as sounds, pictures, databases, and movies. By default, the Project Window includes an item for the application's main window, *Window1*, its default menu bar, *MenuBar1*, and an item for code associated with the application as a whole, *App*. You double-click an item in the Project Window to edit or view it.
- A *Window Editor* is where you build windows, dialog boxes, message boxes, and palettes for the application. Each such window is opened in its own Window Editor and all the windows in the application are listed in the Project Window. By default, an application has one window that opens automatically when you launch the application. It's called *Window1*. In Figure 1, the Window Editor is empty because you haven't added any interface items yet.
- The *Controls Palette* contains icons representing interface objects that you can add to a window. You build your application's interface by dragging and dropping icons from the Controls Palette to a Window Editor.
- The *Properties Window* lists the properties and their values of an item you select in a Window Editor or a menu item in a MenuBar. You can add or modify an object's properties by editing the values in the Properties Window. In Figure 1, the main window is selected, so the Properties Window shows the properties of this window.

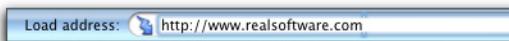
In addition, the complete REALbasic *Language Reference* is online. Choose Help ► Language Reference to display the online reference. Use it as a convenient alternative to the printed or electronic (PDF) version of the *Language Reference*.

Getting Started

In this QuickStart, you'll build an application that manages URLs and email addresses. A URL (which stands for *Uniform Resource Locator*) is the address of a web page that you type into the Address area in your web browser. This application will launch your default web browser application and display the web page that you entered.

Figure 2 shows a URL in a browser Address area:

Figure 2. A URL entered into a browser.



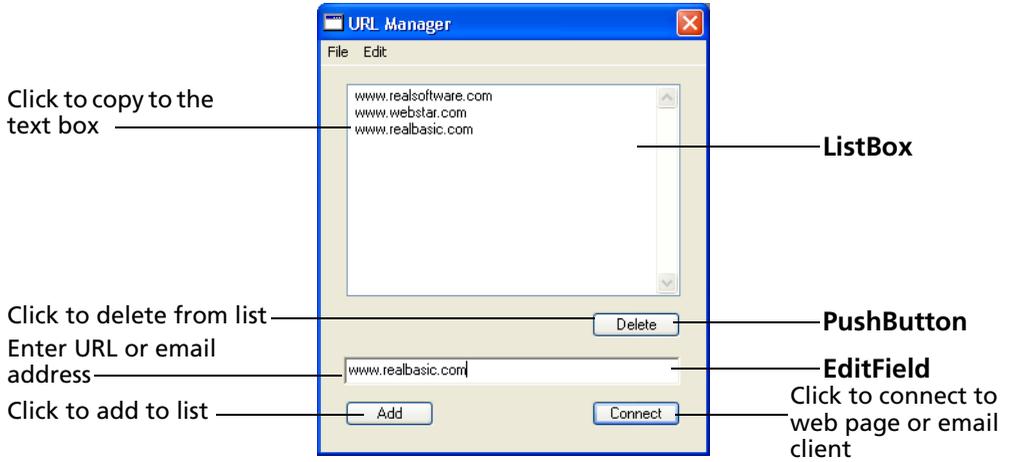
If you enter an email address instead of a URL, the application will launch your email application, create a new blank email, and enter the address into the "To" box. Figure 3 shows how to enter an email address into a browser's Address area.

Figure 3. An email address entered into a browser's Address area.



When you are finished, the application will look like Figure 4. In Figure 4, the labels in bold indicate the types of controls that were used in creating the application. The functions of the controls are described in plain type.

Figure 4. The finished URL Manager application.



You use the EditField to enter the URL or email address you want and then click the Connect pushbutton. To save it in the list, you click the Add button. To select a URL in the ListBox, highlight it in the list and then click Connect. If you don't need the URL any more, highlight it in the list and then click the Delete button.

The application uses three types of prebuilt interface elements to do most of the work for you:

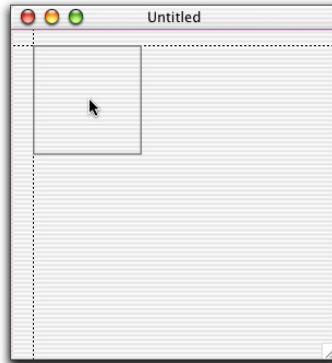
- A **ListBox** is the type of control that holds scrollable lists. It can hold both single- and multiple-column lists and scroll horizontally and vertically.
- An **EditField** is the type of control that holds text. It can be used to hold either a single row of text (as it is here) or as a text editor.
- A **PushButton** is a standard pushbutton. It is most often used to initiate an action (as it is here).

Creating the Interface

Your first task is to build the interface. You already have the REALbasic integrated development environment open.

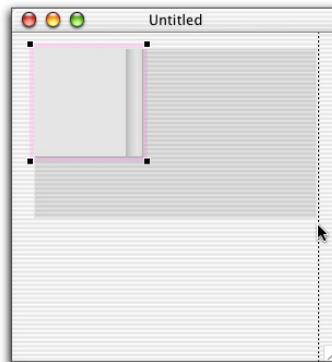
- 1 In the Controls palette, hold down the mouse button on the ListBox icon  and drag it to the top-left corner of the Window Editor. As you drag toward the corner, alignment guides will appear, as shown in Figure 5.

Figure 5. Alignment guides help you position the ListBox and align other controls.



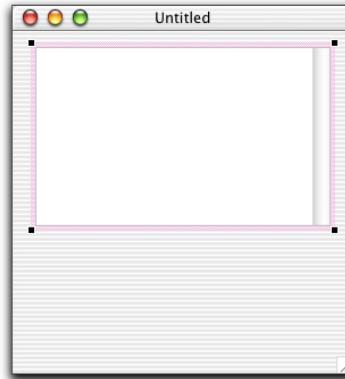
- 2 Release the mouse button. A square ListBox appears in the Window Editor.
- 3 Use the resizing handle in the bottom-right corner and drag diagonally to enlarge the ListBox. When the alignment guide appears on the right, release the mouse button, as shown in Figure 6.

Figure 6. Enlarging the ListBox.



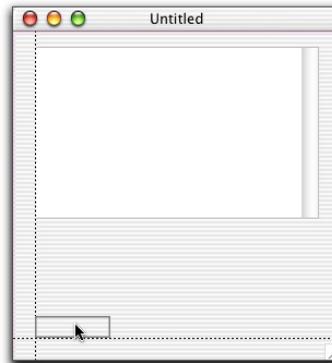
Center it in the upper area of the window, as in Figure 7.

Figure 7. A ListBox added to the Window.



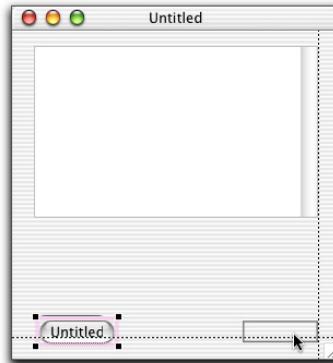
- 4 Next, drag a Pushbutton control  from the Controls Palette to the lower-left portion of the window (where the “Add” button in Figure 4 on page 6 is). As you drag toward the left edge of the ListBox, a vertical alignment guide appears. Use the vertical alignment guide to position the Pushbutton, as shown in Figure 8.

Figure 8. Aligning the Add pushbutton.



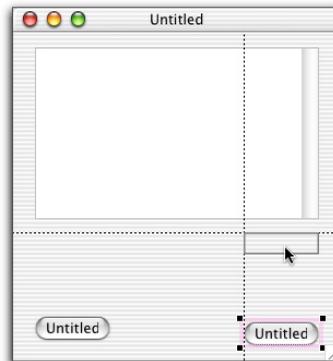
- 5 With the Pushbutton selected, press ⌘-D (Ctrl+D on Windows) or choose Edit ► Duplicate to make a copy of the Pushbutton. Move it to the right of the previous button and align it with the right edge of the ListBox. When you reach the approximate position, both vertical and horizontal alignment guides appear. Align the baselines of the two PushButtons’ captions, as shown in Figure 9.

Figure 9. Aligning the Add and Connect pushbuttons.



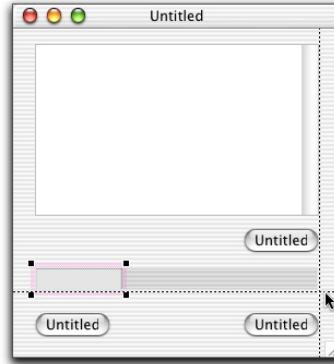
- 6 With this Pushbutton selected, hold down the Option key (Alt key on Windows) and drag the PushButton vertically, just below the ListBox. Release the mouse button when the horizontal alignment guide appears.

Figure 10. Adding the Delete button by Option-dragging the Connect button.



- 7 In the Controls palette, hold down the mouse button on the EditField icon  and drag it into position in the window, midway between the Delete and Connect buttons (see Figure 11 on page 10).
- 8 Align the left edge of the EditField with the left edge of the ListBox.
- 9 Use one of the EditField's selection handles to stretch it so that its right edge aligns with the ListBox.

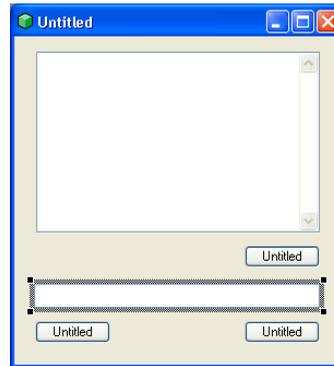
Figure 11. Aligning the right side of the EditField with the ListBox and Pushbuttons.



Note You can also position a control by clicking on it and moving it one pixel at a time using the arrow keys.

Your application's interface is now complete! It should look like Figure 12:

Figure 12. The finished interface in the development environment.

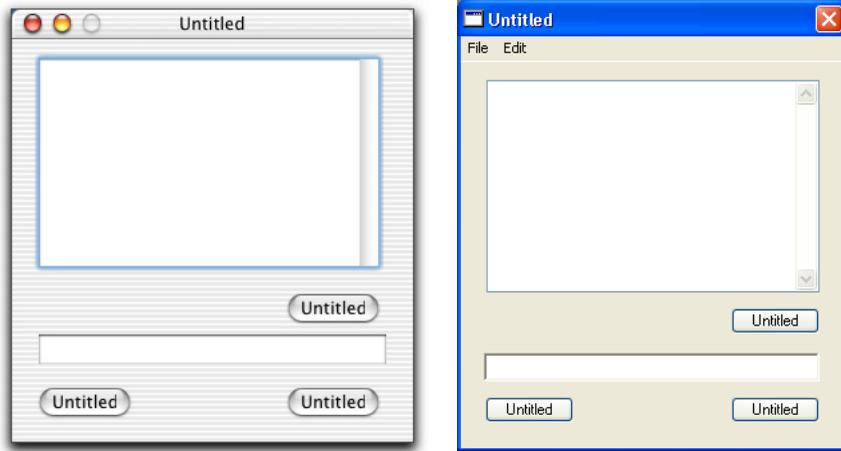


Before going any further, save the project.

- Choose File ► Save (⌘-S or Ctrl+S) and name it **URL Manager.rb**.
At this point, you can actually try it out. Of course it won't do anything since we haven't told any of the interface elements what to do.
- 1 Just for fun, choose Run from the Debug menu.
REALbasic builds the application and opens it in its own window.

The first version of the application should look like this:

Figure 13. The first version in the Runtime environment.



In this state, the PushButtons work — that is, you can click them and they highlight — but they don't do anything because we haven't told the PushButtons what to do when they're clicked. You can enter text into the EditField — but it doesn't go anywhere because there are no instructions to process this text. And the ListBox is all set to display and scroll items but we don't have any way to get text into the ListBox yet.

But it's a start. We need to go back to the development environment to get this application operational.

- 2 Choose File ► Exit on Windows or My Application ► Quit (in Mac OS X) to return to the integrated development environment. On Windows, you can also quit the application by clicking the window's Close box.

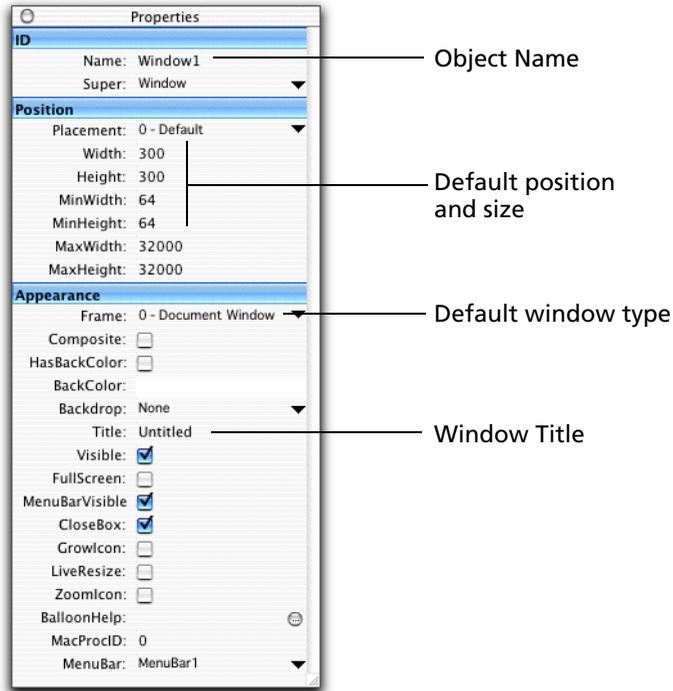
Giving Objects Meaningful Names and Labels

You've already noticed that quite a few objects have the default label "Untitled." They also have default names like PushButton1, PushButton2, etc. Before getting too far into the project, we should give the objects meaningful names and labels. You refer to the object's names in your REALbasic code and, of course, the labels are presented to the user. You should give each object that you refer to in your code a meaningful name at the start of the project.

- 1 In the REALbasic IDE, click on the surface of the window in the Window Editor — not one of the controls in the window — and then take a look at the Properties Window. (If the Properties Window is not onscreen, choose Window ► Show Properties.)

The window has the default name “Window1”, which is shown in the first line. If it shows some other name, then you clicked on one of the controls in the window rather than the surface of the window itself.

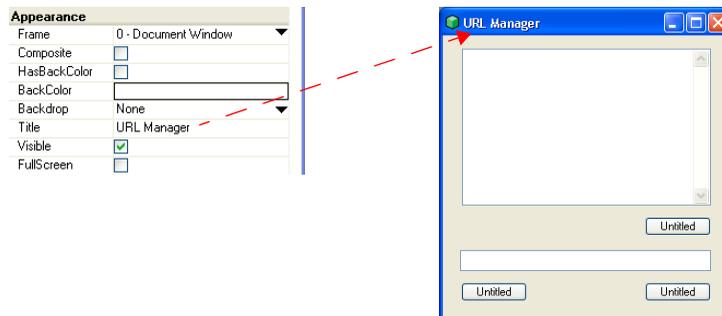
Figure 14. Window1’s Properties Window.



The text that appears in the Title bar of the window is the Title property. The Name property is the name of the window that you use in your code to refer to the window.

- 2 Select the default Title, “Untitled”, in the Properties Window and replace it with **URL Manager**, and press the Return key. When you press Return, the new title appears in the Title bar of the Window Editor as well as in the Properties window.

Figure 15. Changing Window1’s Title property.



Similarly, we need to replace the default names and labels for the controls in the window.

- 3 In the Window Editor, click on the Untitled button in the lower left. Notice that the Properties Window changes to show the properties of this control. The three PushButtons are named `PushButton1`, `PushButton2`, and `PushButton3`. They were named in the order they were created. We'll never remember which one is which, so it's best to rename them at the same time we're entering their labels.
- 4 Change its Name property to **AddURL** and its Caption property to **Add**. Press Return to save each new property value. Notice that the Caption text immediately replaces "Untitled" in the Window Editor when you press Return. When you are finished, the Properties Window for the AddURL pushbutton should look like this.

Figure 16. The Properties Window for the Add button.



- 5 Click on the Untitled button in the lower right to select it. It's `PushButton2`. Use the Properties Window to change its name to **ConnectURL** and its Caption property to **Connect**.
- 6 Click on the Untitled pushbutton between the ListBox and the EditField and change its Name property to **DeleteURL** and its Caption property to **Delete**.
- 7 Click on the EditField and change its name to **SelectedURL**.
- 8 Click on the ListBox and change its Name property to **ListURL**. That takes care of it. The Properties windows for these objects should look as shown in Figure 17.

Figure 17. The Properties Windows for the other controls.



Check your work to be sure that the items are named correctly. If there is a spelling error in a Name property, code that is supposed to refer to that item will not work.

The three buttons should now look like this:

Figure 18. The three PushButton controls after renaming.



- 9 Choose File ► Save to save your changes. Choose Debug ► Run to test it. It doesn't do any more than the last version, but at least all the interface elements are labeled correctly.
- 10 Choose File ► Exit (on Windows) or My Application ► Quit (Mac OS X) to return to the Development environment. Be sure to quit out of the built application before resuming your work in the REALbasic Development environment. You can't change anything in the Development environment while the application itself is running. If you forget to quit out of the test application before you resume work in the REALbasic IDE, REALbasic will stop you and tell you that the test application is still running.

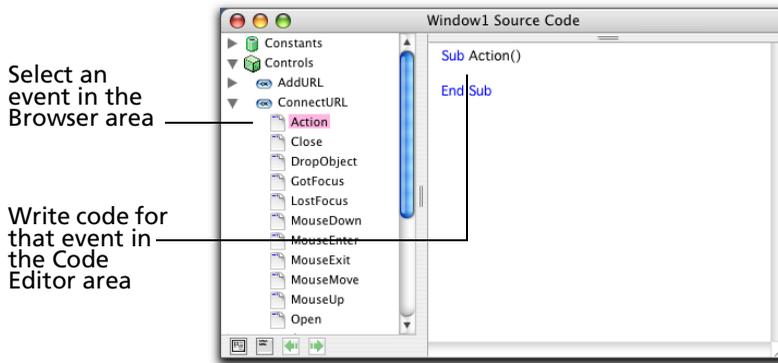
Making the URL Manager Do Something

Now that the interface is designed and its appearance is touched up, it's time to make the controls do their jobs. We'll start with the Connect button.

- 1 In the Window Editor, double-click the Connect button. The Code Editor for the application window appears. This is where you write code for the window and the controls contained in the window. On the left side is a browser area that lists all the controls that we've added to the window, among other things. (For the *QuickStart*, we only need to work with the controls.) On the right side is the code editing area. It holds the code for the item that is selected in the browser.

Right now the “Action” item for the Connect button is selected. It’s highlighted in the Browser area and the first line in the editor gives the name of the event.

Figure 19. The Code Editor for Window1.



In order to get the Connect button to do something, we need to write some code that will run only when the button gets clicked. Fortunately, the REALbasic application itself monitors all user interface activity while the application is running and it knows whenever this happens. We need to write the instruction that connects the user to the web site that the user enters into the EditField.

In the Browser area of the Code Editor, you’ll see a list of events that REALbasic continuously monitors while the application is running. The one we need is the “Action” event. This event takes place when the user clicks the button.

On the right, you can write the code that runs automatically when the user clicks the button. (Notice that the first line in the Code Editor, “Sub Action()”, indicates which event the code is for). The instruction to open a web site in the user’s browser (or open the email application) is simple. The instruction is **ShowURL** and its syntax is:

ShowURL *text*

Where *text* is the URL (or email address).

As soon as you enter “ShowURL”, a “tips” window appears, showing the syntax. By referring to the Tips window you can avoid having to look up a command’s syntax in the Online Reference whenever you need help.

Figure 20. The ‘Tips’ window showing the syntax for ShowURL.

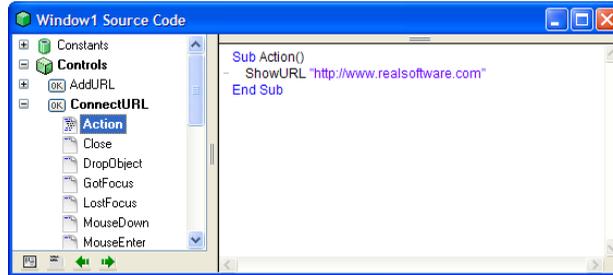


- To test out this button, enter the following line in ConnectURL’s Action event:

ShowURL "http://www.realsoftware.com"

Be sure to enclose the URL in quote marks. The quote marks indicate that the text in quotes is a string (rather than a number or some other type of data). Your Code Editor should now look like this:

Figure 21. The code for ConnectURL's Action event.



- 3 Choose Debug ► Run to test out the Connect button.
- 4 Click the Connect button.

In a few moments, your default web browser will launch and bring up the REAL Software home page. (This, of course, assumes your computer has a connection to the Internet and you have a default browser application.)

Figure 22. The REAL Software home page.



Of course, we need to modify the code so that the text passed to the ShowURL command can be entered by the user while the application is running. When we use ShowURL "http://www.realsoftware.com", the particular URL is "hardcoded."

If you get a syntax error, check to make sure that you spelled the **ShowURL** command correctly, that you enclosed the URL in double quote marks, and that it is the correct URL.

- 5 Choose **File ► Exit** on Windows (or **My Application ► Quit** on Mac OS X) to return to the Development environment.

We now need to replace the text used with the ShowURL command with the code that refers to the contents of the EditField, SelectedURL.

Since the EditField is named “SelectedURL”, you might think that we could write:

```
ShowURL SelectedURL
```

but that won't work because “SelectedURL” is the name of the object itself. It has lots of properties — like its position in the window, whether it takes several lines of text or just one, whether it can accept styled text, and so forth. If you use “**ShowURL SelectedURL**”, REALbasic would have no idea what you mean.

When you need to refer to one of an object's properties, you write the name of the object, followed by a dot, followed by the name of the property. In other words, you use this syntax:

```
objectname.propertyname
```

It's sometimes called “dot” notation.

In this case, the EditField is named “SelectedURL” and the EditField property that we want is its “Text” property. This means the following expression accesses the contents of the EditField:

```
SelectedURL.Text
```

That is, “SelectedURL” is the name of the object and “Text” is the name of the object's property that we need.

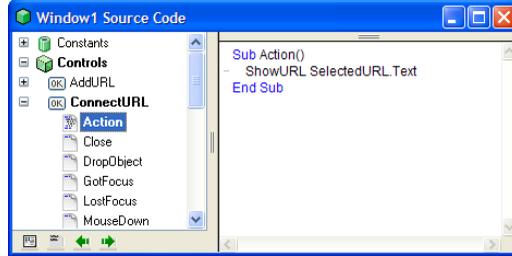
- 1 In the Code Editor for the Action event, modify the code to read:

```
ShowURL SelectedURL.Text
```

This expression **SelectedURL.Text** refers to the text property only.

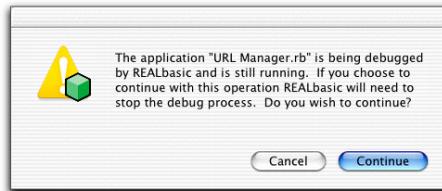
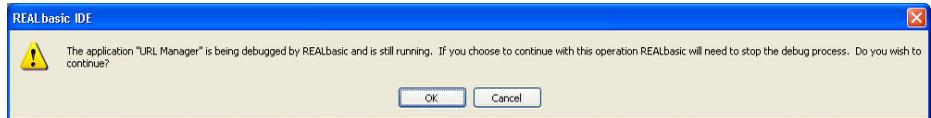
Your Code Editor should now look like this:

Figure 23. The revised code for the Action event.



In Case of Difficulty

If you have trouble entering this line of text, be sure you have quit out of the test application before returning to the REALbasic Development environment (IDE). If you try to add code while your test application is running, you will see a message like this:



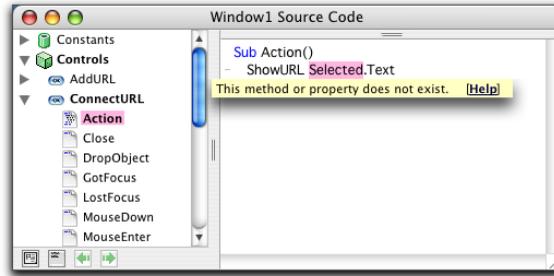
Simply click OK (Continue on Mac OS X) to quit the test application and return to the Development environment.

- 2 Save the project (File ► Save) and switch over to the Runtime environment (Debug ► Run).
- 3 Enter a URL in the EditField, such as “www.realsoftware.com” and click Connect. Your default web browser should launch and open the web page you entered.
- 4 When you’re finished, quit out of the Runtime environment (File ► Exit or REALbasic ► Quit) and go back to the Development environment.

If the Application doesn't run

If REALbasic was unable to switch to the Runtime environment, its because it couldn't recognize a term you entered into the Code Editor. For example, if you misspelled either “ShowURL” or “SelectedURL,” REALbasic stops and points out the term it doesn't recognize. In Figure 24, a user has misspelled the name of the EditField.

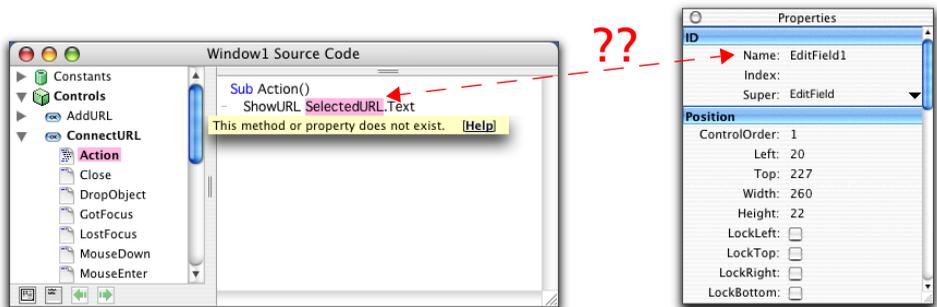
Figure 24. A misspelled object name.



Since it can't find an object called "Selected," it can't create the application for you. REALbasic knows it would never be able to figure out what to do when a user clicks the Connect button. Be sure you've renamed the controls as described and referred to their correct names in the Code Editor. You'll also get this error if you wrote **ShowURL SelectedURL** and left off the name of the property that contains the contents of the EditField.

Another possibility is that you used the correct name in the Code Editor but did not rename the EditField using the Properties Window as shown in Figure 17 on page 14. In that case, the statement in the Code Editor as shown in Figure 23 on page 18 ought to work, but there is no object named "SelectedURL" in the application. This is illustrated in Figure 25 on page 19.

Figure 25. Forgetting to rename the EditField.



Code that is supposed to refer to an EditField named "SelectedURL"

The EditField's Properties Window.

If you get an error message, start by checking the highlighted term.

Now, we'll make the other controls do their jobs.

The Add Button

The Add button is supposed to take the text in the `TextField` and add it to the end of the list in the `ListBox`. That's easy.

- 1 If the Code Editor for the window is not already open, double-click the Add button in the window (If the Window Editor is not open, double-click its name in the Project Window).
- 2 Enter the following code into the Add button's Action event:

```
ListURL.Addrow SelectedURL.Text
```

The first part of the expression, `ListURL.Addrow` calls a built-in method belonging to a `ListBox`. The `AddRow` method is a command that adds a row of text to the end of whatever list is already in the `ListBox`. Not surprisingly, it needs to be passed the text of the new item. We already know that `SelectedURL.Text` refers to the contents of the `TextField`, so that is what we use.

Note A *method* is a command that performs an action. Technically, `ShowURL` is a *global method* because it isn't attached to any particular object. It can be called by any object that can call a method. We just happen to be calling it from a `PushButton`. (We could, for example, design the application so that `ShowURL` is called when the user chooses a menu item instead of clicking a button.)

Just as objects can have properties (like their name, size, position, and label), they can also have their own methods. `AddRow` is also a method but it "belongs" only to `ListBoxes`. It has a specialized action that only makes sense when applied to lists in `ListBoxes`.

The Delete Button

The Delete button removes the selected item in the `ListBox`. It's also pretty simple.

- 1 In the Code Editor, expand the `DeleteURL` item and highlight the Action item.
- 2 Enter the following line of code:

```
ListURL.RemoveRow ListURL.ListIndex
```

In this case, we are calling the built-in `RemoveRow` method of the `ListBox`. Instead of text, it needs the number of the row (line) to delete. The `ListIndex` property contains that number, so we pass that number to the `RemoveRow` method.

The ListBox

The `ListBox` itself has the job of copying the item the user selects into the `TextField` so the user can connect to that URL or email address. You can easily do this by writing an *assignment statement* that runs when the user highlights an item in the list.

- 1 With the Window Editor in the front, double-click on the `ListBox`. The Code Editor window changes to select the `ListBox`'s Change event. The Change event runs whenever a different item is highlighted in the `ListBox`.

- 2 Enter the following code into the Change event:

```
SelectedURL.Text=ListURL.Text
```

The ListBox's Text property contains the text of the highlighted item. The Text property of SelectedURL contains the text that's currently displayed. This assignment statement copies this text into the Text property of the EditField.

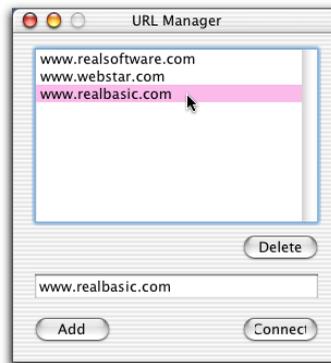
Testing the Application

That's the basics of this application. Now it's time to test out all these features.

- 1 Choose File ► Save to save your changes.
- 2 Choose Debug ► Run and test it out.

The application looks the same as it did, but all the controls work! For example, enter **http://www.realssoftware.com** into the EditField and click the Add button. Add a few other URLs to the ListBox in this manner and then highlight one in the ListBox to move it to the EditField.

Figure 26. Clicking a URL to move it to the EditField.



You can:

- Enter a URL into the EditField and connect to the site using your default web browser.
- Add the URL to the ListBox.
- Select any URL in the ListBox to copy it into the EditField.
- Delete the selected URL in the ListBox.

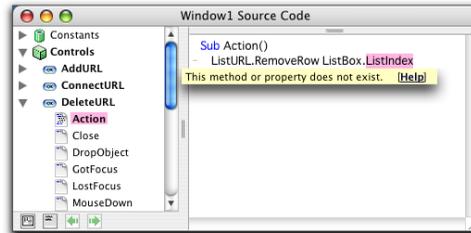
If you want to send an email, enter it in the following way:

```
mailto: username@domain.com
```

If the Application doesn't run

If something is wrong with your code, REALbasic stops and points out the first error it finds when you choose Debug ► Run. For example, in Figure 27 this user has entered the name of a general class of objects (“ListBox”) rather than the particular ListBox itself:

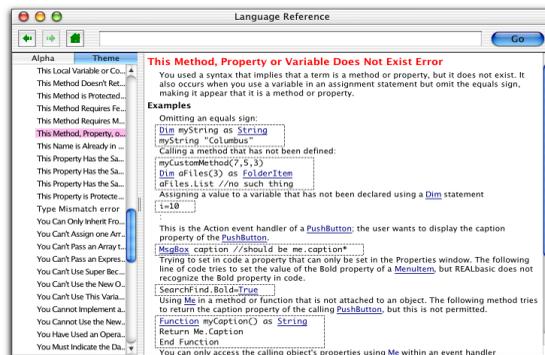
Figure 27. A vocabulary error.



In most cases, you will find that errors are due to either misspelling the name of an object or the name of a property. You will also get errors if you use the intended name of an object but did not change the default name of the object in the Properties Window. Start by checking the term that REALbasic highlights and determine whether it is spelled correctly. If it is supposed to be the name of a control, be sure the control has been renamed correctly. If it is the name of a method (like “ListIndex”) be sure it is spelled correctly.

The error message tells you the term that REALbasic doesn't understand; for more information about the error, you can click the “Help” button within the error message. REALbasic will then open the Online Reference to the entry for the error. In this case, it displays the following page.

Figure 28. The error in the Online Reference.



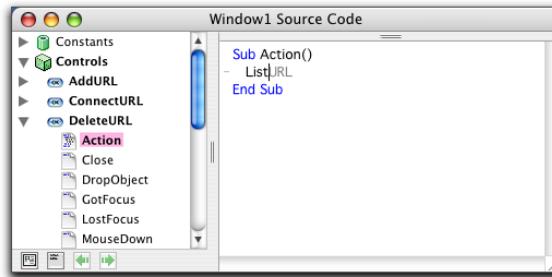
Of course, you need to correct the error before the application can run. Each time you test the application, REALbasic will stop at the first error, so there may be others.

Using Autocomplete

One way to avoid using incorrect terms is to take advantage of REALbasic's "autocomplete" feature. As you type, REALbasic tries to guess what you are typing. If you type the first few characters of a REALbasic language object — either built in or a variable, method, or property that you created — it shows its guess in light gray type. If the guess is correct, press the Tab key to complete the entry.

Here is an example:

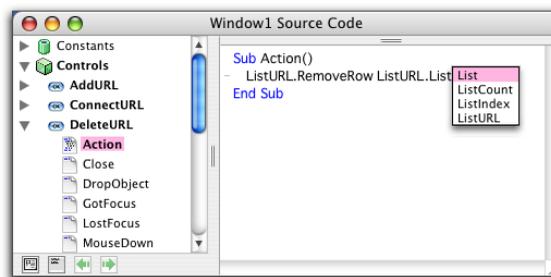
Figure 29. Autocomplete in action.



The user has just typed "List" and REALbasic has suggested "ListURL". Pressing Tab completes the word.

If REALbasic knows several alternatives, it displays them in a contextual menu when you press Tab. For example, after accepting "ListURL" and typing the period key and the first two letters of the next term, REALbasic can suggest only four possible correct matches. Press Tab when you see the ellipsis ("...") and, when the contextual menu appears, use the up or down arrow keys to select the correct term. Press the Return key to select it.

Figure 30. A contextual autocomplete menu.



How can the Application be improved?

Although all the controls do their jobs, they do their jobs when it is inappropriate to do so. For example,

- If the EditField is blank, clicking the Add button adds a blank row to the ListBox and clicking the Connect button tries to open a non-existent URL.

- If no item is selected in the ListBox, the Delete button tries to delete a non-existent row.

We should make it impossible for the buttons to be clicked unless the conditions are right or, at least, give the user some appropriate feedback.

- 1 Choose File ► Exit on Windows or REALbasic ► Quit (Mac OS X) to return to the Development environment.
- 2 Double-click on the Connect button in the Window Editor to open the code for its Action event.

It currently reads:

```
ShowURL SelectedURL.Text
```

We need to make this conditional — so that the line is executed only when there is some text in the EditField. For now, we'll have to assume that the user knows how to enter a valid URL or email address.

- 3 Modify the code to read:

```
If SelectedURL.Text <> "" then
  ShowURL SelectedURL.Text
Else
  MsgBox "Please enter a URL or email address."
End if
```

There is no space between the double quote marks in the first line or between the less than and greater than signs.

This code first tests to see whether the contents of the EditField is blank. The “<>” symbol means “not equal to” and the quotes with nothing in between specify blank text. If the EditField is blank, we use the MsgBox command to display an alert box with an informative message.

- 4 Expand the DeleteURL item in the Code Editor and select the Action event. We need to follow the same logic. This code should run only if the user has selected an item in the ListBox—not all the time.
- 5 Modify the code to read as follows:

```
If ListURL.Text <> "" then
  ListURL.RemoveRow ListURL.ListIndex
Else
  MsgBox "Please select an item in the list."
End if
```

- 6 Expand the AddURL item in the Code Editor and select the Action event. In this case, we can add an extra test. If the item is already selected, it doesn't need to be added, so we can test for that condition as well. The first test prevents the Add button from adding a blank row and the second test prevents it from adding a

duplicate row (We could also write a separate method that tests whether the new item matches *any* item in the ListBox, but we will leave that as an exercise!)

- 7 Modify the code to read as follows:

```
If SelectedURL.Text <> ListURL.Text then
    ListURL.Addrow SelectedURL.Text
Else
    MsgBox "Please enter a different URL or email address."
End if
```

Next, we want to prevent the user from using the Add and Connect buttons if there is nothing in the EditField.

- 8 Expand the SelectedURL item in the Code Editor and select the TextChange event in the Browser area of the Code Editor.

The TextChange event runs whenever the text in the EditField has changed. We want to take action based on the EditField's state just after the text has changed. If the EditField is now blank, we will disable these two buttons so the user can't use them. And, if there is text in the EditField, we will enable the buttons and make the Connect button the default button. The default button has an outline around it on Windows and Mac OS "classic" and it "throbs" on Mac OS X.

- 9 Enter the following code into the TextChange event.

```
If Me.Text <> "" then
    ConnectURL.Enabled=True
    ConnectURL.Default=True
    AddURL.Enabled=True
Else
    ConnectURL.Enabled=False
    ConnectURL.Default=False
    AddURL.Enabled=False
End if
```

One thing you notice about this code is that the first line uses the pronoun "Me" instead of the name of the control. "Me" always refers to the control the code belongs to; since we are inside the EditField, SelectedURL, "Me" refers to SelectedURL. In other words, this line is the same as if we wrote **If SelectedURL.Text...**

The last step is to modify the code for the ListBox. This code needs to test whether the user has highlighted an item before trying to copy text into the EditField. It also should manage the Delete and Connect buttons. There's no reason the user should be able to click Delete if no item is selected.

- 10 Expand the ListURL item in the Code Editor and select the Change event.

- 11 Modify the code to read as follows:

```
If Me.Text <> "" then
    SelectedURL.Text=ListURL.Text
    ConnectURL.Enabled=True
    DeleteURL.Enabled=True
Else
    DeleteURL.Enabled=False
End if
```

- 12 Save the project.
- 13 Choose Debug ► Run to test it out.
When you first open the application, you can test the alert messages that you've put in each PushButton. Then add a URL and see how the application behaves.
- 14 When you're finished, return to the development environment.

If the Application doesn't run

This section introduces the If...Else...End if statement. The Code Editor automatically indents the code within an If statement to make it easy to check your code. Be sure that your code is indented as shown in the instructions. Be sure there is an "End If" statement for each "If" and you didn't type "Endif" instead of "End if" or "end if". Capitalization doesn't matter, but the space between "End" and "if" does. Also, check that each line that begins with an "If" statement ends with "then". You should not leave a blank space between the double quote marks or between the less than and greater than signs.

Building A Standalone Application

Now that you have a finished version of the application, you're ready to create a standalone application. The *standalone* version of the application runs just like the application you've been testing, but it doesn't require the REALbasic application itself. It can be double-clicked from the desktop, just like a commercial application.

The Professional version of REALbasic can create standalone applications for the Macintosh, Linux, and Windows platforms. The Standard version of REALbasic builds standalone applications only for the platform on which the REALbasic application is running. It also allows you to build demo versions for the platforms on which REALbasic is *not* running. A demo version is fully functional but quits automatically after five minutes.

Building Your Application

Building a stand-alone version of your project as an application couldn't be easier than it is in REALbasic.

- 1 Choose File ► Build Application.

REALbasic compiles your project, creates a standalone application, and brings it to the front window.

Figure 31. The URL Manager built application icon (Mac OS X).

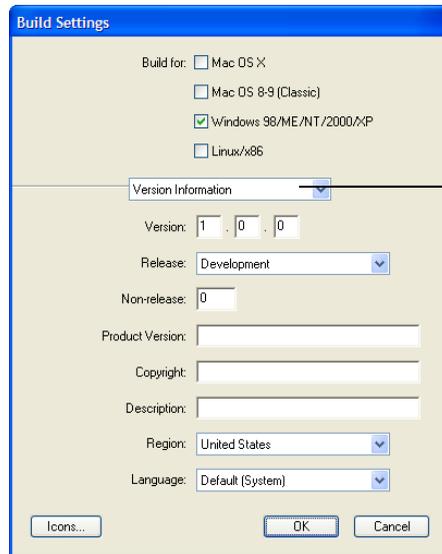
By default, it uses the name “My Application” or “My Application (Mac OS X)” for the Mac OS X platform and uses your platform’s generic application icon. Both the name and icon can be customized easily. Also, REALbasic opens the window that contains the built application and brings it to the front.

- 2 Double-click the “My Application” icon and try out the program. When finished, choose Quit to put away the URL Manager and go back to the REALbasic project.

Customizing the Standalone Application

Before building a standalone application, you can set several options. For example, you can change the application’s name, build for other platforms, set memory requirements for Mac OS 8-9, and some other options. You use the Build Settings dialog box for this. After choosing your options, the Build Application command uses your current Build Settings automatically.

- 1 Choose File ► Build Settings.
The Build Settings dialog box appears.

Figure 32. -The Build Settings dialog box.

The pop-up menu controls what is displayed in the bottom section of the dialog box.

The top area lists the target platforms for the build. Your choices are:

- Mac OS X
- Macintosh OS 8-9 “classic”— a version of the Mac OS prior to Mac OS X that runs REALbasic.

- Any version of Windows from Windows 98 to XP Professional.
- Linux for an x86 processor with GTK+ 2.0 or greater installed.

By default, the OS that you are currently running is selected. You can build for any or all the platforms simultaneously.

- 2 (Optional) If you want to create standalone applications for other platforms, check the appropriate “Build For” checkboxes for your target platforms in the top area of the Build Settings dialog box.
- 3 If you’re creating a version of the application for a Macintosh platform, choose Mac OS Settings from the popup menu shown in Figure 32.

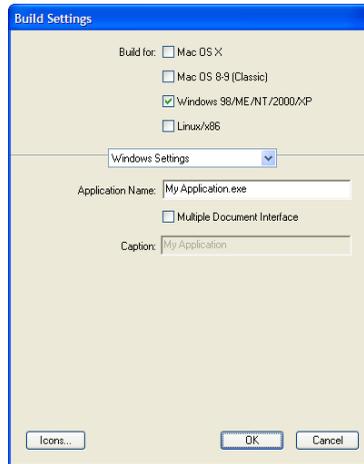
The Mac OS Settings panel enables you to enter the names of the Macintosh builds and set memory requirements for the “classic” build (The Mac OS X application, of course, manages memory dynamically).

Figure 33. The Mac OS Settings panel.



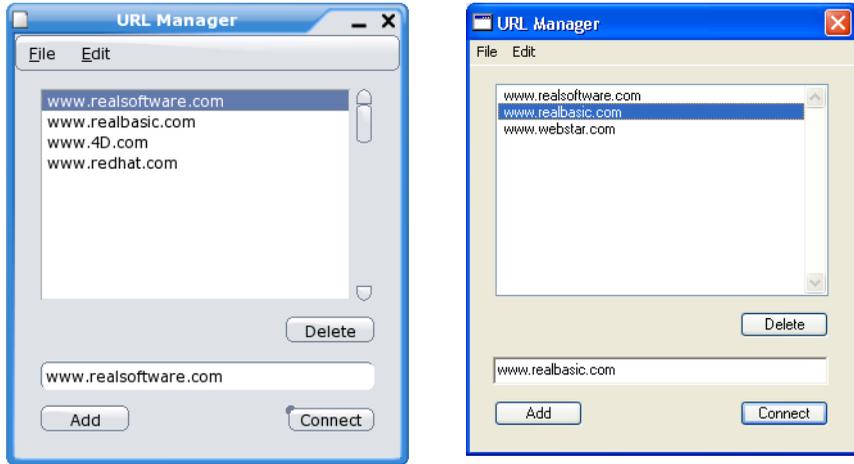
- 4 Enter **URL Manager** as the name of the application for the version of the Mac OS that you’re using.
- 5 If you’re creating a version of the application for Windows, choose Windows Settings from the pop-up menu.

Figure 34. The Windows Settings panel.



- 6 Enter **URLManager.exe** in the Application Name area.
- 7 Click OK.
- 8 If you are creating a version of the application for Linux, choose Linux x86 Settings from the pop-up menu.
This panel enables you to name the Linux build.
- 9 Enter **URLManager** as the name of the application.
- 10 Click OK to save your settings.
- 11 Choose File ► Build Application.
- 12 Quit out of the REALbasic IDE (File ► Exit on Windows) or URL Manager ► Quit on Mac OS X).
- 13 Double-click the new application and try it out.
- 14 If you built versions for other platforms, drag them to those platforms as well.
For example, Figure 35 shows the application running under Linux and Windows XP™.

Figure 35. The Linux and Windows versions of the URL Manager application.



What's Next

The *QuickStart* shows how easy it is to develop a simple application. In the *Tutorial*, you build a more elaborate application — a text processor that supports styled text, creating, opening, and saving files, and printing. It illustrates more REALbasic features, including sheet windows and dialog boxes, menus and menu items, writing and calling methods, and compiling platform-specific code.

With the skills you'll learn in the *Tutorial*, you'll be able to add a File menu to this application with Open and Save items that will allow you to save URL lists to disk and open saved lists. Another way to save URL lists is to use a database. REALbasic includes a database that can be used for this purpose. It is described in the *User's Guide*.

Also, be sure to check out the REALbasic web site at <http://www.realsoftware.com> for other tutorials and how-to's.