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BeanMachine for the Web

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Abstract

Who is building Web sites today? Graphic designers, writers, and marketing and communications people are building them, not Java programmers. In fact, very few Web sites are actually built by professional programmers. That's why Lotus BeanMachine is important: It brings the power of Java to non-programming Web-builders.

Basics of BeanMachine

So what is BeanMachine all about? From a design point of view, it's about simplicity. You'll find helpful wizards, lots of interesting, reusable samples and artwork, and powerful, commonly used, ready-to-go parts that you can easily assemble into your own applet. From an engineering point of view, it's about JavaBeans. JavaBeans is a specification, defined by Sun Microsystems, for building reusable Java components (these resulting components are also called "JavaBeans"). When Java programmers follow this specification, the classes they produce can be used with BeanMachine. The JavaBeans specification is what makes it possible to easily assemble the parts into the whole, producing Java applets that would have been quite difficult to build otherwise.

Let's take a closer look, starting with a quick tour of BeanMachine's windows and palettes. The main window is called the Composer window. The white rectangle near the upper left corner represents your applet, into which you drop parts from the palette, which is the small window in the upper right of the Composer window.

What kind of parts can you drop? There are three groups of parts that come with BeanMachine. There are Multimedia parts, such as Animation, Audio, Ticker Tape, and Text. There are Networking parts, such as a Database part, a URL Link for linking to other Web pages, and an e-mail part. You'll learn more about these parts a little later. The third category of parts is called Controls, which includes all the basic things you need to build data entry forms such as buttons and text fields.

After you've dropped some parts into your applet, you'll want to start defining more details about them by setting their properties in the Details window, which is in the lower right of the Composer window. Properties are simply data that define how a part looks or behaves. For instance, the picture property of an Image part would define which .GIF file is displayed. The transition property would indicate whether or not you want a transition effect, such as a dissolve or iris, as the image is being displayed.

Since many of the elements of a Java applet are related to artwork or other multimedia files, the Gallery is an important window. It displays thumbnails of all the artwork in a particular folder. You can display thumbnails from different folders, and the Gallery keeps track of the artwork folders you've used most recently so you can quickly go back to them. By clicking on one of these thumbnails (for example, the thumbnail of a GIF file), you can quickly do two steps in one: You can add the image part to your applet and set its picture property automatically. You don't have to use the Gallery at all, but many people find it easier to work visually, using these thumbnails to help them find the right artwork quickly and easily.

Connecting JavaBeans Together

Every JavaBean has a certain set of properties, methods, and events. Properties are the data that describe the part: its picture, its speed, its width and height, and so on. Every bean has a different list of properties that uniquely

define it. Beans are also active objects; that is, they know how to do things. Animations can play and stop. Buttons can show and hide themselves. Again, every kind of bean has a different set of actions it knows how to perform; these are called methods. Events help a bean interact with other beans. An event is a kind of signal that something important has happened: a button was clicked, a transition has finished, or a ticker tape was refreshed. In BeanMachine, every part on the palette is a JavaBean, so it has properties, methods (which BeanMachine calls actions), and events.

On the Connections tab of the Details window, you can connect the events and actions of parts to add logic to your applet. A connection can be thought of as a command or interaction between two parts. They take the form of "when something happens (an event), do something else (an action)." The "do something else" can be any action, such as playing an audio clip, setting a property like background color, or stopping an animation. When you make connections, you decide which events trigger which actions. For example, you can have an animation play when a certain button is clicked.

The Connections page shows you all the connections for the part of your applet that you currently have selected in the Composer window. To make a connection, you click on the different columns to pick the events and actions you want to use. You can have as many connections as you want for a part, and they don't all have to start from the same event. You can copy and paste connections, and you can also reorder them and delete them if you need to.

The Palette

Let's take a deeper look at the palette to get a better idea of what you can assemble and connect to make your own Java applet. There are several categories of parts you can choose from.

Multimedia Category

These parts are mostly for adding nice special effects to your applet. These are the parts you can really have fun with!