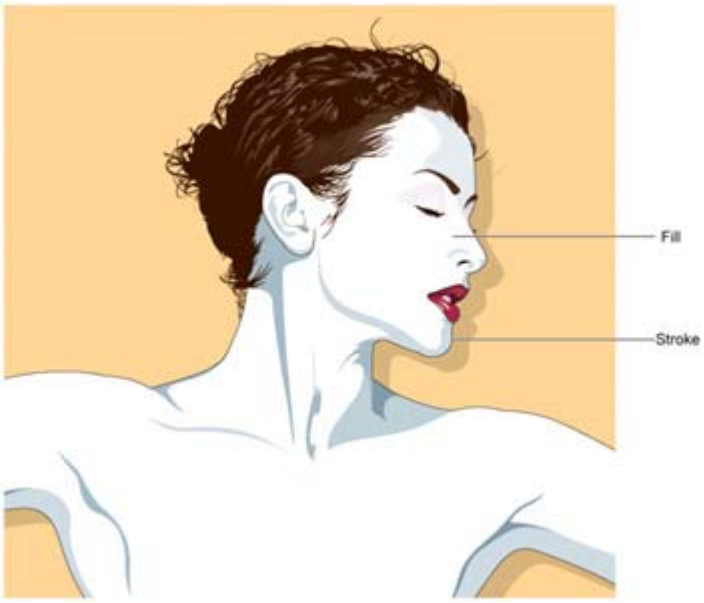

Figure 1.1: The stroke and fill of a vector image give it its overall graphic properties.Illustration by Tim Arroyo, © 2001

Note The kicker about vector images is that stroke and fill are calculated mathematically. This is very important when it comes to animation.

Raster images are very different from vector images. A raster image is created by a collection of pixels. *Pixel,* a hybrid word combining *picture* and *element,* is a colored dot or tile. A raster image, which can contain millions of pixels, works like a mosaic. Each little colored tile, which consumes a fixed amount of memory, plays a role in creating the overall color makeup and detail of the image. For an illustration of raster format, see Figure 1.2.


Figure 1.2: A raster image is created using a series of colored tiles, or pixels, arranged in a grid format.

One of the major differences between vector and raster graphics is in their scalability. Because the components of a vector image (stroke, fill, and so on) are calculated mathematically, they can be scaled, stretched, and manipulated by the computer without any loss of the image's clarity or resolution. The same is not true for raster images, however. They have a preset grid configuration, so any change in size alters the grid. When the size of a raster image is increased, the computer must interpolate (make an educated guess for) the