Pie Charts for Maps

A TrueType Font

Many years ago, I needed a map that would show the relative width of leaves and the frequency of a certain leaf structure for a number of populations of plants. I chose to mark the populations with pie graphs, where the proportion of the dark slice of the pie represented the frequency, and the diameter of the pie represented the leaf width. Making the map involved lots of press-on symbols, India ink, and hours of time.

Biology has changed in the intervening years. Now I am making maps of the frequency of DNA markers. The techniques have changed, too, and I envisioned some serious use of OLE to put graphs in my maps. Unfortunately, 20 separate imbedded Delta Graph objects proved to be more than Corel Draw could handle on my system. But sometimes a fly can still be killed with a flyswatter instead of a cannon, so I made this font, which contains pie chart symbols from 0% to 100% in 5% increments.

There are three full sets of pies in the font. One is mapped to the upper-case letters A-U, and one to the lower case a-u (see chart below). The third set is mapped to the number keys: the unshifted keys ` **1 2 3 4 5 6 7 8 9 0** represent 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, and 100%, and their shifted counterparts ~ **! @ # $ % ^ & * (** are 5%, 15%, 25%, 35%, 45%, 55%, 65%, 75%, 85%, and 95% (sorry, shifted 0 is not 105%). I find this latter mapping the easiest to use, but it is mnemonic only on keyboards that maintain the US English arrangement of the symbols.

The font also contains open and closed circles containing ×, to represent missing data. As you might have guessed, these are mapped to **x** and **X**, respectively.

The font was created with Corel Draw 4.0, not a fontwright's paradise, but it got the job done. I designed it for use in Corel Draw maps, but of course it can be used in any application that supports TrueType fonts (**Warning:** Although this font works with every application I have tried it with, an earlier version of the font locked up Ami Pro on my system. I've had problems like that in the past with fonts created in Corel.).
In Corel Draw, pies can be created either as symbols or as artistic text. I find it easier to change artistic text than symbols, an important consideration when maps of different DNA markers are generated from a single template. Because these pies are characters, lines beneath them will show up through their open areas. This is not always attractive.
A way around this is to create a solid pie (**0**, **U**, or **u**) of the same diameter, color it white, line it up with the one you want to mask, and use the ordering or layering controls of your drawing program to place it *behind* the open pie and *in front of* the map.

The file SAMPLE.BMP is a screen shot from Corel Draw showing how the pie slice and pie diameter can both be varied on a single map. The data are fictitious.

Please send comments or suggestions to:

Curtis Clark
Biological Sciences
California State Polytechnic University, Pomona
Pomona CA 91768
jcclark@csupomona.edu

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