

Neighborhood Trees Pilot Project: Code Explanation

The handheld application used to collect tree data was created using ArcPad Application Builder. This is a development environment that allows the user to create a custom interface for data collection purposes. The following files contain the code for the tree collection application:

- CMAP.apa
- CMAP.vbs
- NYC Trees.apl
- NYC Trees.vbs

The first two files, CMAP.apa and CMAP.vbs, contain the code for a custom toolbar. CMAP.apa is referred to as an ArcPad Applet file (not to be confused with a java applet) and is actually made up of XML tags that define what the toolbar should look like and what happens when a user clicks an individual tool:

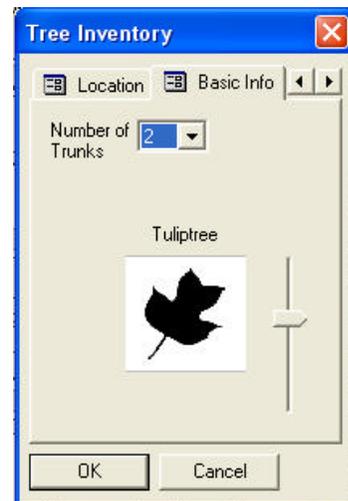


Note: This is the only toolbar that is **REQUIRED** to run the application. The default toolbars can either be turned off or left as is. Turning them off will leave more screen real estate for the map and will make the application easier to use.

CMAP.vbs is a VBScript file that opens two forms based on user interaction, the form used for creating a new tree entry (or editing an existing tree) and the form for identifying an existing tree. In addition to this, the file makes sure that certain conditions exist that must be met in order for the application to work. A layer named “NYC Trees”, for instance, must have been added to the application prior to creating a new record. This script also captures the user input points (from clicking on the screen) and makes the “NYC Trees” layer editable/identifiable as needed.

The remaining two files, NYC Trees.apl and NYC Trees.vbs, contain the code for four custom forms (editing/data entry, identifying a tree, as well as two forms that are called from the main editing form – a DBH entry form and a form for viewing sample tree densities). NYC Trees.apl is referred to as an ArcPad Layer file and is, like the .apa file, made up of XML tags that define what the forms should look like and what happens when a user clicks an individual element in the form.

NYC Trees.vbs is a VBScript file that contains the bulk of the code used in the application. This code also verifies data entries to make sure that numeric fields have numeric values that are within the



specified range, etc. Much of the code in this file deals with the ability to use a slider tool to select the tree species as shown in the image above. These leaf images and other files must be present for the application to run. These files are listed below:

Tree Images:

[LondonPlane.bmp](#)
[NorwayMaple.bmp](#)
[SugarMaple.bmp](#)
[RedMaple.bmp](#)
[SycamoreMaple.bmp](#)
[SilverMaple.bmp](#)
[Hawthorn.bmp](#)
[PinOak.bmp](#)
[RedOak.bmp](#)
[Sweetgum.bmp](#)
[Tuliptree.bmp](#)
[WillowOak.bmp](#)
[BlackTupelo.bmp](#)
[JapaneseFloweringCherry.bmp](#)
[Linden.bmp](#)
[Hackberry.bmp](#)
[CalleryPear.bmp](#)
[JapaneseZelkova.bmp](#)
[AmericanElm.bmp](#)
[Hophornbeam.bmp](#)
[Ginkgo.bmp](#)
[Ash.bmp](#)
[Ailanthus.bmp](#)
[JapaneseSophora.bmp](#)
[Honeylocust.bmp](#)
[Unknown.bmp](#)
[Other.bmp](#)

Sample Tree Density Images:

[foliageDensity.bmp](#)

Icons Used in Toolbar:

[tree.bmp](#)
[information.bmp](#)

Database Tables (containing codes and names of values to appear in dropdown menus):

[FoliageValues.dbf](#) – Foliage density values
[LocationNames.dbf](#) – Location names (front, side, median, etc)
[PitCondition.dbf](#) – Tree pit conditions (good, fair, compacted, etc)

In addition to these files, a shapefile named NYC Trees must also exist as well as any base map data required for the application. Refer to the document entitled “Installation Instructions.doc” for more information about where each of the above files must be placed for the application to work. Each of the VBScript files contains comments to make the code easier to understand.

To make changes to the application, the ArcPad Application Builder's ArcPad Studio can be used. This is a graphical development environment that makes the creation and modification of custom applications easier. It is, however, possible to make changes to the application using a text editor since none of the files are compiled.

The code for the custom application is NOT supported by ESRI.

The following page shows screen shots of all the input forms.

Tree Inventory

Location Basic Info

Pruner Name: John Smith

Date: 5/13/2003

Address: 123 Broadway

Location: Median

Tree Age: 6

OK Cancel

Tree Inventory

Basic Info Physical Info

Number of Trunks: 2

Hackberry



OK Cancel

Tree Inventory

Physical Info Site Info

Height (ft): 15

Canopy (ft): 7

Condition: Good

Ground to Crown: 12

Foliage Density: 20

OK Cancel

Tree Inventory

Site Info Digital Picture

Remove Guard: Y N

Expand Grate: Y N

Pit: Y N

Pit Condition: Planted

Pit Size: 16

Comments:

OK Cancel

Tree Inventory

Digital Picture

Add a digital picture



C:\Program Files\ArcPa ...

OK Cancel

Form

Sample density values

95	85	75	65	55
				
45	35	25	15	5
				

OK Cancel

DBH Values

DBH 1: 8

DBH 2: 10

OK Cancel