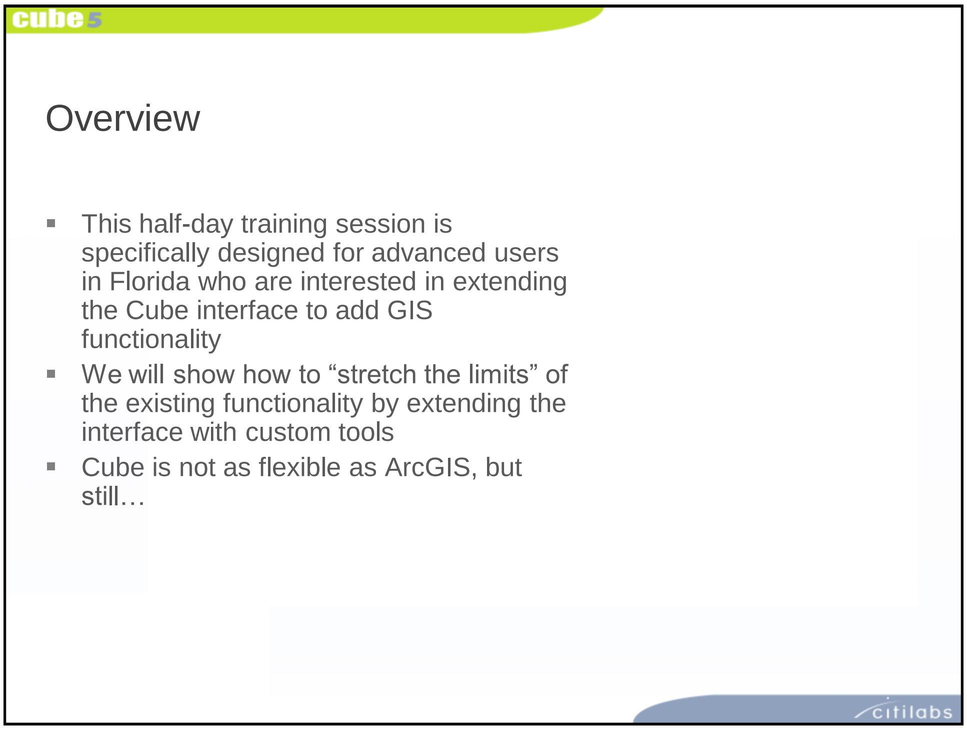
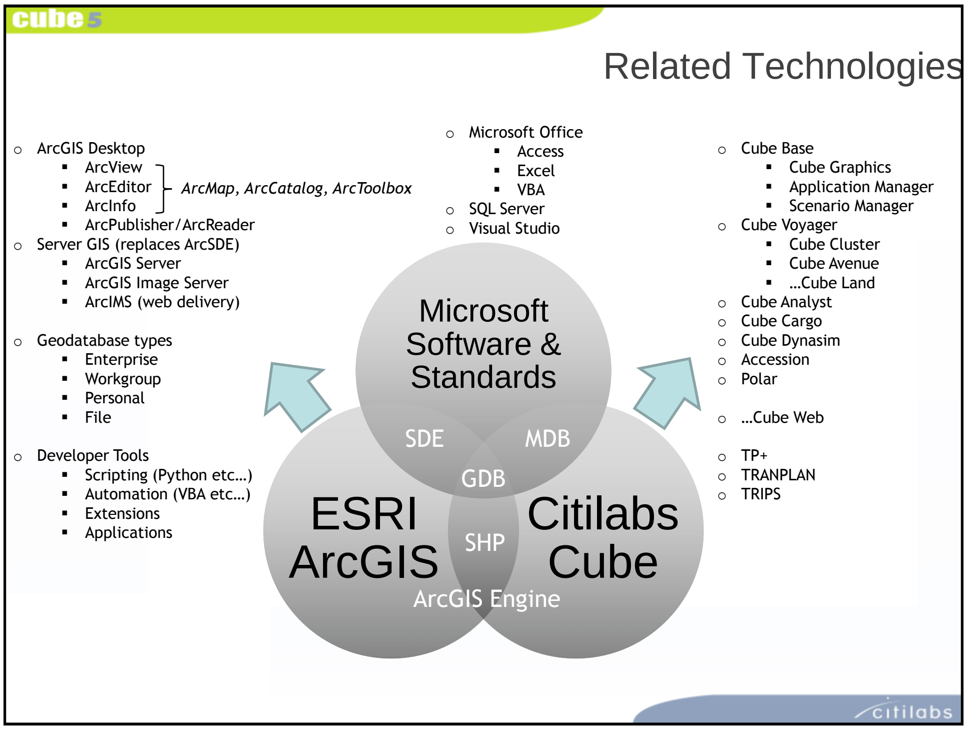
Cube GIS Functionality For FSUTMS Users

Florida Model Task Force
January 22, 2009
Colby Brown, Training Director



Overview

- This half-day training session is specifically designed for advanced users in Florida who are interested in extending the Cube interface to add GIS functionality
- We will show how to "stretch the limits" of the existing functionality by extending the interface with custom tools
- Cube is not as flexible as ArcGIS, but still…



cube5

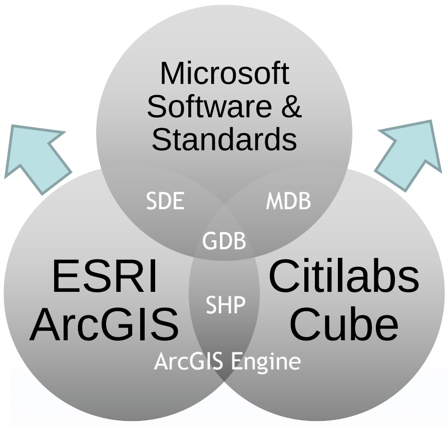
Related Technologies

- ArcGIS Desktop
  - ArcView
  - ArcEditor
  - ArcInfo
  - ArcPublisher/ArcReader
- Server GIS (replaces ArcSDE)
  - ArcGIS Server
  - ArcGIS Image Server
  - ArcIMS (web delivery)
- Geodatabase types
  - Enterprise
  - Workgroup
  - Personal
  - File
- Developer Tools
  - Scripting (Python etc…)
  - Automation (VBA etc…)
  - Extensions
  - Applications

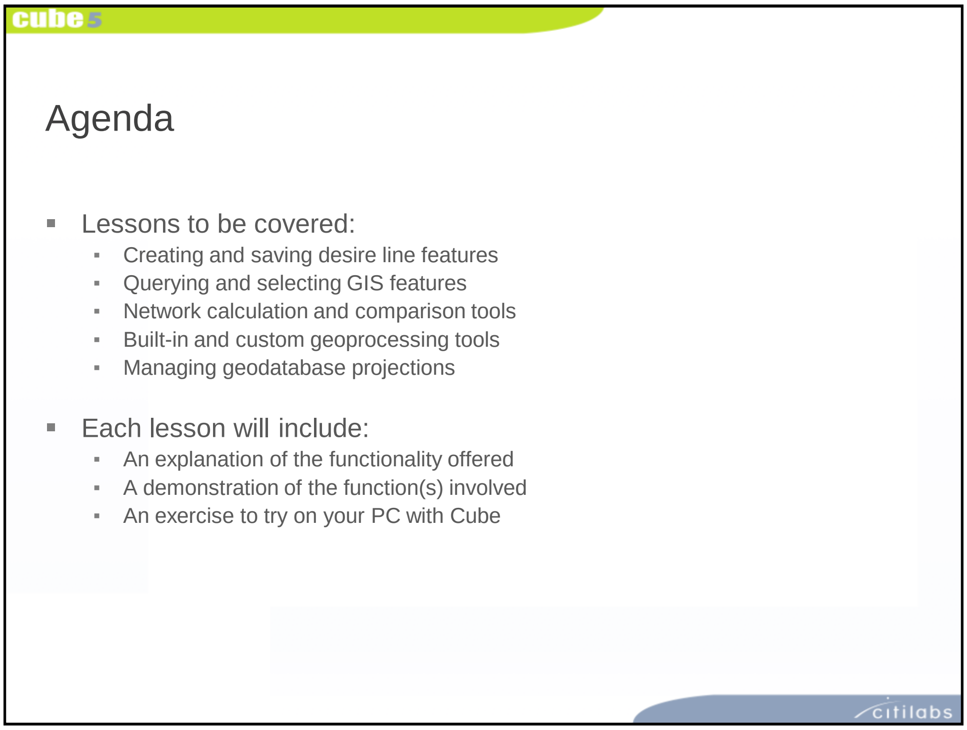
ArcMap, ArcCatalog, ArcToolbox

- Microsoft Office
  - Access
  - Excel
  - VBA
- SQL Server
- Visual Studio

- Cube Base
  - Cube Graphics
  - Application Manager
  - Scenario Manager
- Cube Voyager
  - Cube Cluster
  - Cube Avenue
  - …Cube Land
- Cube Analyst
- Cube Cargo
- Cube Dynasim
- Accession
- Polar
- …Cube Web
- TP+
- TRANPLAN
- TRIPS



citilabs



cube5

Agenda

- Lessons to be covered:
  - Creating and saving desire line features
  - Querying and selecting GIS features
  - Network calculation and comparison tools
  - Built-in and custom geoprocessing tools
  - Managing geodatabase projections
- Each lesson will include:
  - An explanation of the functionality offered
  - A demonstration of the function(s) involved
  - An exercise to try on your PC with Cube

citilabs

cube5

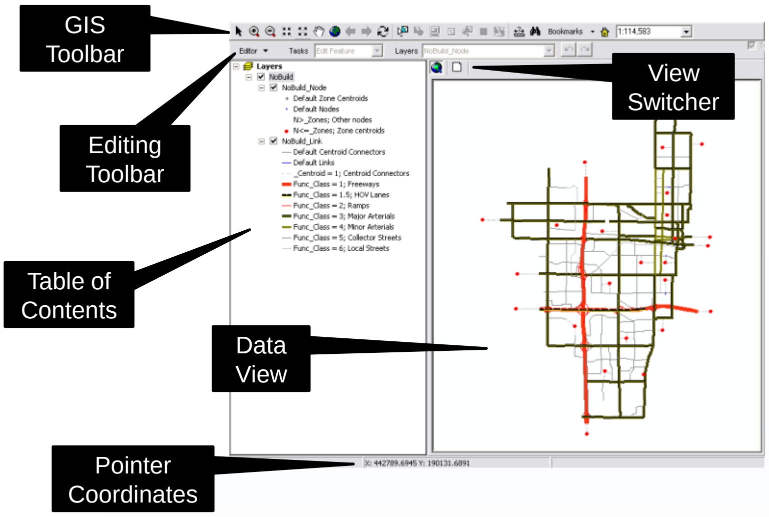
Getting Started

- Open Cube
- Open Cubetown
- Open the input highway network in the GIS window

citilabs

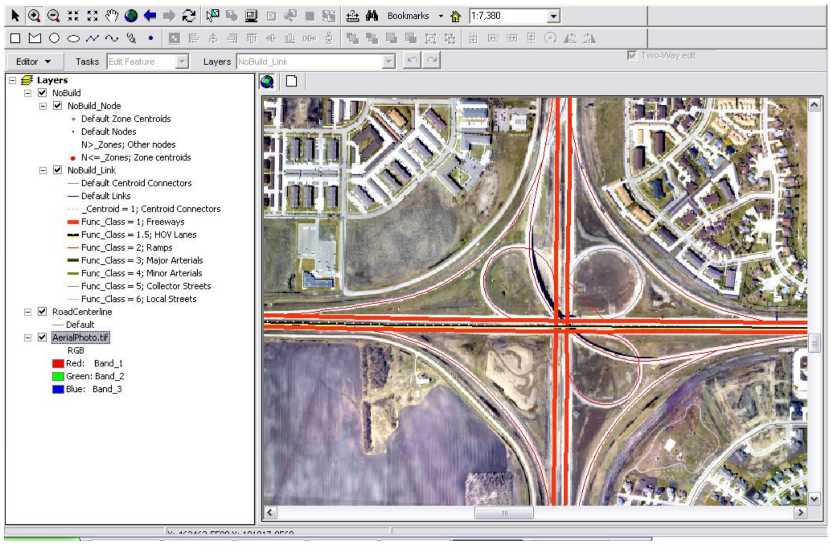
cube5

The GIS Window



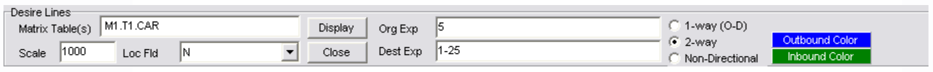
citilabs

Compare With an Aerial Photo



Creating a Desire Lines Map

1. Open the output Mode Trips matrix
2. Open the output HW Loads network
3. From the Node menu, select Link to Matrix
4. Double-click on the Available Linkage and click Close
5. Go to Post > Desire Lines
6. Enter M1.T1.Car in Matrix Tables, 1000 in Scale, 5 in Org Exp, 1-25 in Dest Exp, and select 2-way
7. Click on the Display button to view desire lines



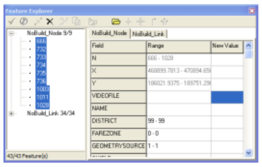
Desire Lines

Matrix Table(s): M1.T1.CAR
Scale: 1000
Loc Fld: N
Org Exp: 5
Dest Exp: 1-25
1-way (O-D) [✓ 2-way] Non-Directional

cube5

Interactive Selection

- Use Select Features tool
- Click on a link or node to select it
- Shift-click on a link to add to selection
- Ctrl-click on a link to add/remove
- Click and drag to select a rectangular area



Feature Explorer

NoBuild_Node 9/9
- 666
- 732
- 733
- 734
- 735
- 736
- 1003
- 1011
- 1028

NoBuild_Link 34/34

43/43 Feature(s)

NoBuild_Node | NoBuild_Link

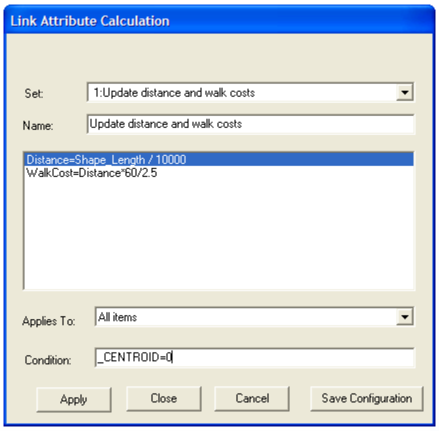
Field	Range	New Value
N	666 - 1028	
X	468899.7813 - 470894.65	
Y	186021.9375 - 189751.29	
VIDEOFILE		
NAME		
DISTRICT	99 - 99	
FAREZONE	0 - 0	
GEOMETRYSOURCE	1 - 1	

citilabs

cube5

Network Calculations

- Enter edit mode, select network, and "Link > Compute"
- Simple tool allows you to apply a set of link computations to all or selected network links
- Up to 16 stored sets



Link Attribute Calculation

Set: 1:Update distance and walk costs

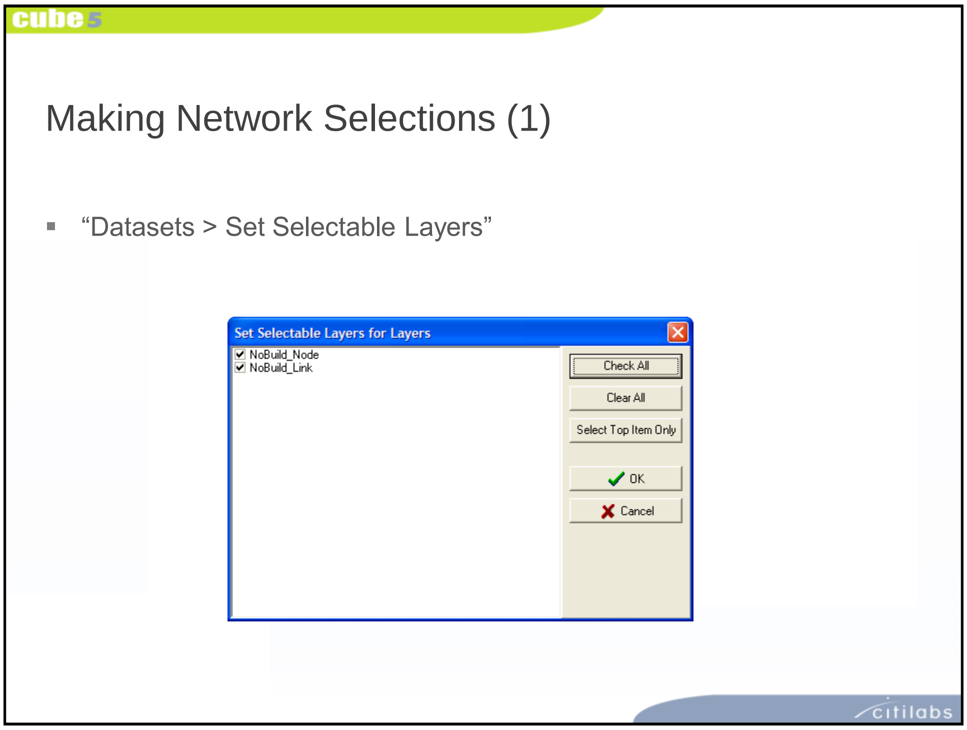
Name: Update distance and walk costs

```
Distance=Shape_Length / 10000
WalkCost=Distance*60/2.5
```

Applies To: All items

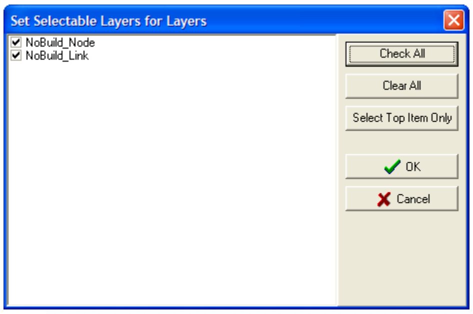
Condition: _CENTROID=0

citilabs



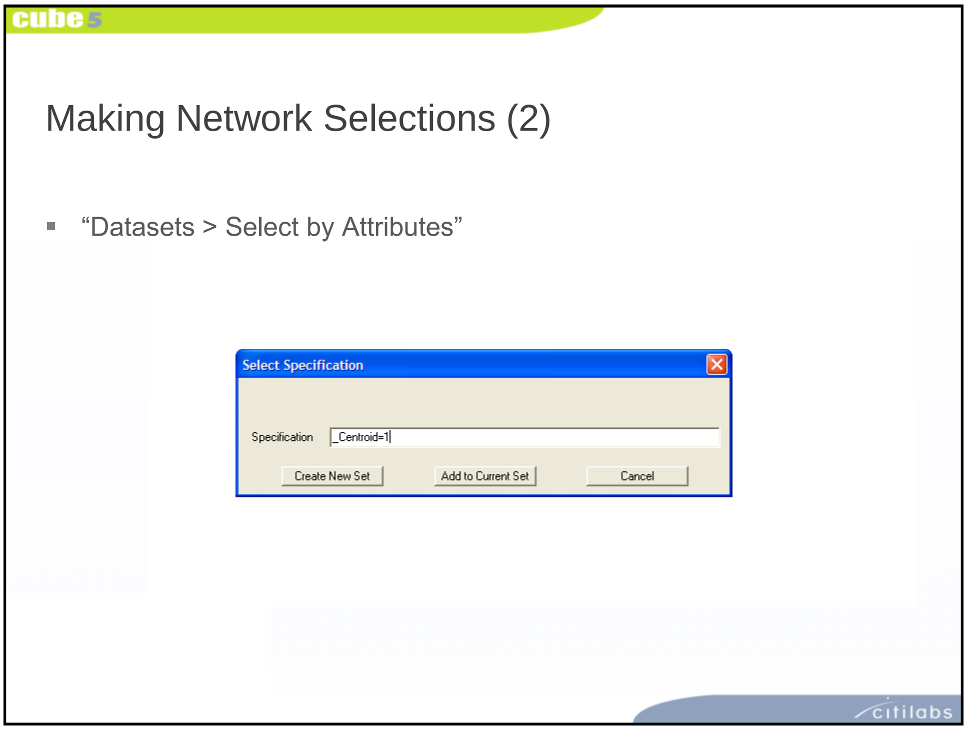
Making Network Selections (1)

- “Datasets > Set Selectable Layers”



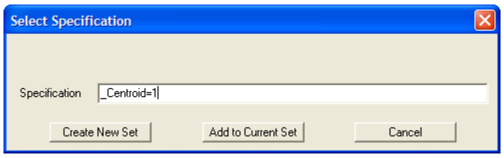
Set Selectable Layers for Layers

☑ NoBuild_Node
☑ NoBuild_Link



Making Network Selections (2)

- “Datasets > Select by Attributes”

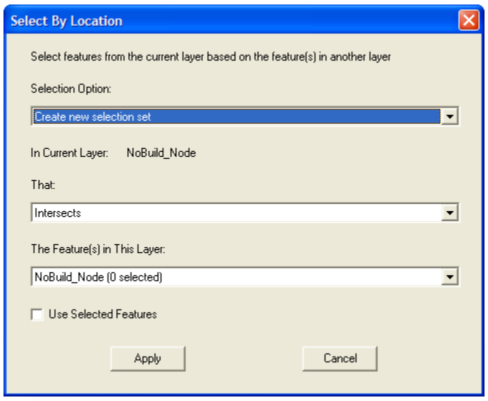


Select Specification

Specification: _Centroid=1

Making Network Selections (3)

- “Datasets > Select by Location”



Select By Location

Select features from the current layer based on the feature(s) in another layer

Selection Option: Create new selection set

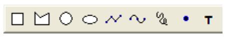
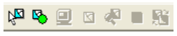
In Current Layer: NoBuild_Node

That: Intersects

The Feature(s) in This Layer: NoBuild_Node (0 selected)

☐ Use Selected Features

Graphical Selections

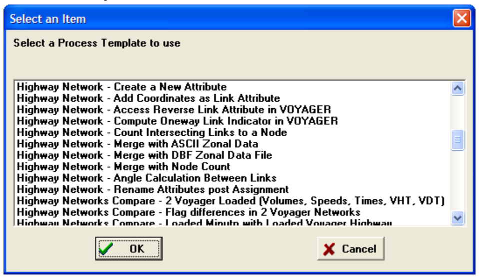
1. Draw shape on map 
2. Select by Graphics 

Exercise: Reduced Speed Safety Zone

1. Open the input network for an alternative scenario (Build)
2. Start editing input network, make sure that Links are the target layer
3. Select Zone 1 using Select by Attributes
4. Use Select by Location to select all links that are inside of the selected zone
5. Do a link computation on the selected links to reduce their speed by 15%
6. Run both scenarios

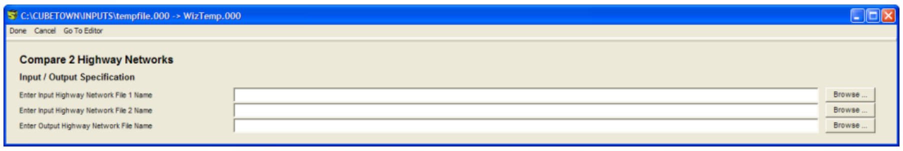
Compare Two Loaded Networks

- "Run > Process Template"


Select an Item

Select a Process Template to use

Highway Network - Create a New Attribute
Highway Network - Add Coordinates as Link Attribute
Highway Network - Access Reverse Link Attribute in VOYAGER
Highway Network - Compute Oneway Link Indicator in VOYAGER
Highway Network - Count Intersecting Links to a Node
Highway Network - Merge with ASCII Zonal Data
Highway Network - Merge with DBF Zonal Data File
Highway Network - Merge with Node Count
Highway Network - Angle Calculation Between Links
Highway Network - Rename Attributes post Assignment
Highway Networks Compare - 2 Voyager Loaded (Volumes, Speeds, Times, VHT, VDT)
Highway Networks Compare - Flag differences in 2 Voyager Networks
Highway Networks Compare - Loaded Minutp with Loaded Voyager Highway


C:\CUBETOWN\INPUTS\tempfile.000 -> WizTemp.000

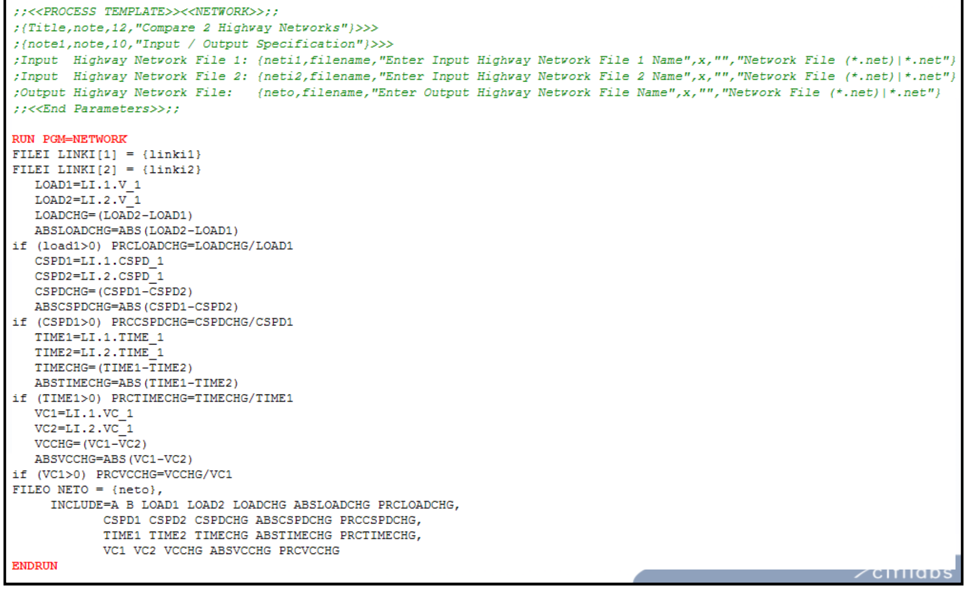
Compare 2 Highway Networks

Input / Output Specification

Enter Input Highway Network File 1 Name
Enter Input Highway Network File 2 Name
Enter Output Highway Network File Name

cube5

Template Voyager Script



```
;;<<PROCESS TEMPLATE>><<NETWORK>>;;
;{Title,note,12,"Compare 2 Highway Networks"}>>>
;{note1,note,10,"Input / Output Specification"}>>>
;Input  Highway Network File 1: {neti1,filename,"Enter Input Highway Network File 1 Name",x,"","Network File (*.net)|*.net"}
;Input  Highway Network File 2: {neti2,filename,"Enter Input Highway Network File 2 Name",x,"","Network File (*.net)|*.net"}
;Output Highway Network File:   {neto,filename,"Enter Output Highway Network File Name",x,"","Network File (*.net)|*.net"}
;;<<End Parameters>>;;

RUN PGM=NETWORK
FILEI LINKI[1] = {linki1}
FILEI LINKI[2] = {linki2}
   LOAD1=LI.1.V_1
   LOAD2=LI.2.V_1
   LOADCHG=(LOAD2-LOAD1)
   ABSLOADCHG=ABS(LOAD2-LOAD1)
if (load1>0) PRCLOADCHG=LOADCHG/LOAD1
   CSPD1=LI.1.CSPD_1
   CSPD2=LI.2.CSPD_1
   CSPDCHG=(CSPD1-CSPD2)
   ABSCSPDCHG=ABS(CSPD1-CSPD2)
if (CSPD1>0) PRCCSPDCHG=CSPDCHG/CSPD1
   TIME1=LI.1.TIME_1
   TIME2=LI.2.TIME_1
   TIMECHG=(TIME1-TIME2)
   ABSTIMECHG=ABS(TIME1-TIME2)
if (TIME1>0) PRCTIMECHG=TIMECHG/TIME1
   VC1=LI.1.VC_1
   VC2=LI.2.VC_1
   VCCHG=(VC1-VC2)
   ABSVCCHG=ABS(VC1-VC2)
if (VC1>0) PRCVCCHG=VCCHG/VC1
FILEO NETO = {neto},
     INCLUDE=A B LOAD1 LOAD2 LOADCHG ABSLOADCHG PRCLOADCHG,
            CSPD1 CSPD2 CSPDCHG ABSCSPDCHG PRCCSPDCHG,
            TIME1 TIME2 TIMECHG ABSTIMECHG PRCTIMECHG,
            VC1 VC2 VCCHG ABSVCCHG PRCVCCHG
ENDRUN
```

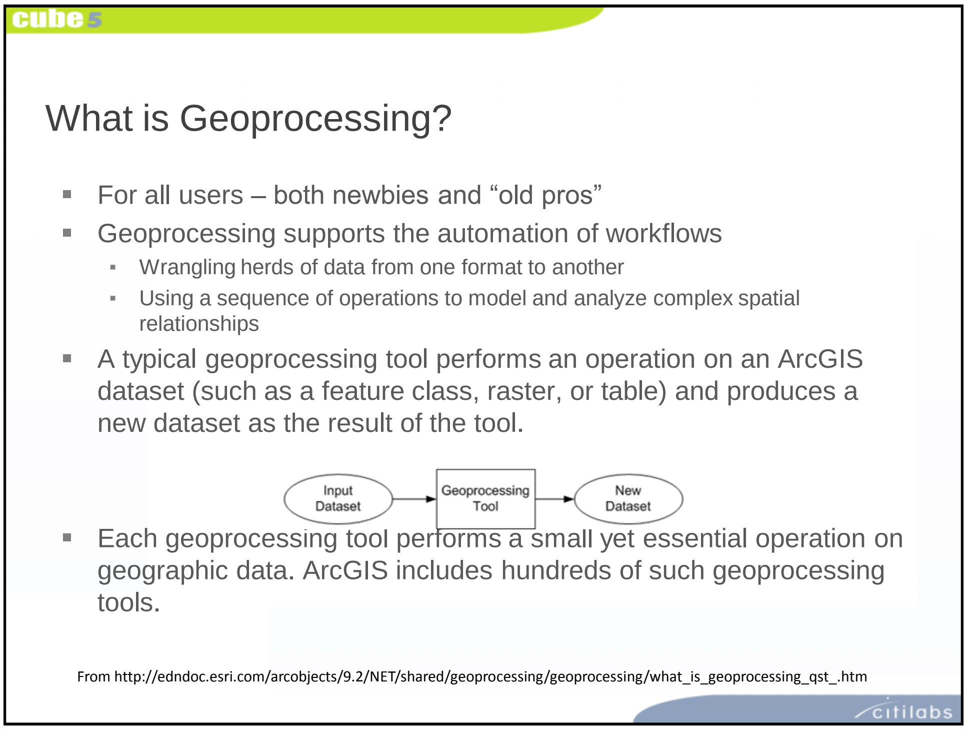
citilabs

cube5

Create Your Own Templates

- Used as “macros” for common operations that can be launched from GIS window or added to models in Application Manager
- Required elements:
  - ;;<<Process Template>>;;
  - ;{parameters, options}
  - ;;<<End Parameters>>;;
  - RUN PGM… ENDRUN
- “File > Save Template in User.tpl”

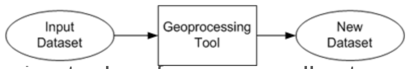
citilabs



cube5

What is Geoprocessing?

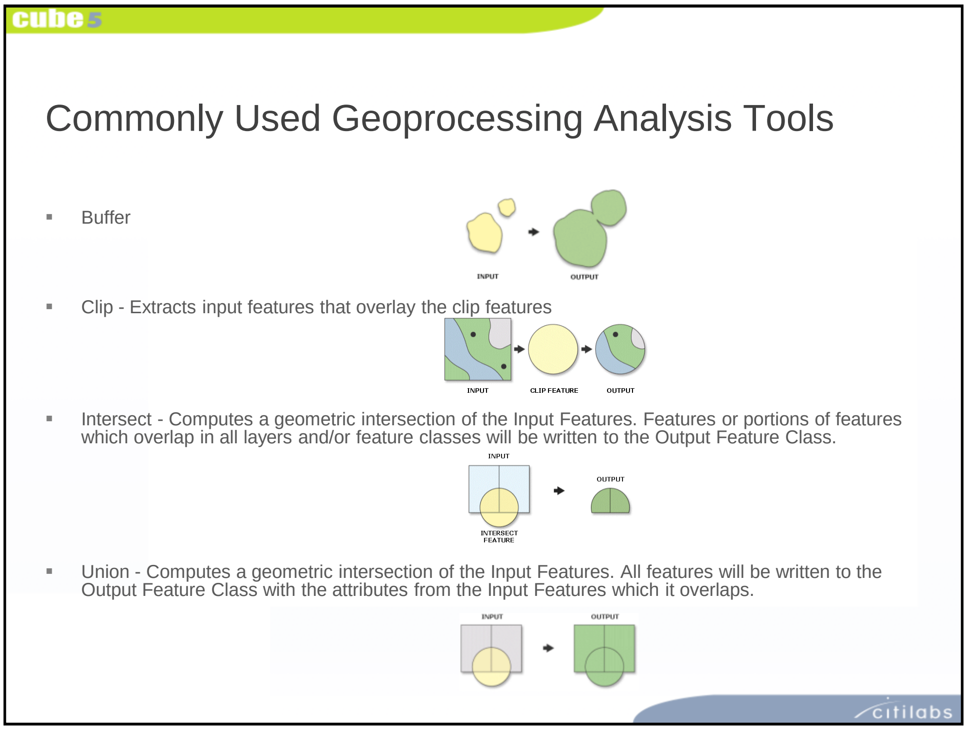
- For all users – both newbies and “old pros”
- Geoprocessing supports the automation of workflows
  - Wrangling herds of data from one format to another
  - Using a sequence of operations to model and analyze complex spatial relationships
- A typical geoprocessing tool performs an operation on an ArcGIS dataset (such as a feature class, raster, or table) and produces a new dataset as the result of the tool.



- Each geoprocessing tool performs a small yet essential operation on geographic data. ArcGIS includes hundreds of such geoprocessing tools.

From http://edndoc.esri.com/arcobjects/9.2/NET/shared/geoprocessing/geoprocessing/what_is_geoprocessing_qst_.htm

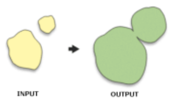
citilabs



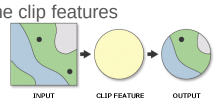
cube5

Commonly Used Geoprocessing Analysis Tools

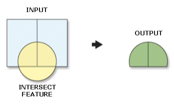
- Buffer



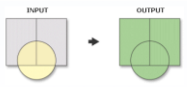
- Clip - Extracts input features that overlay the clip features



- Intersect - Computes a geometric intersection of the Input Features. Features or portions of features which overlap in all layers and/or feature classes will be written to the Output Feature Class.



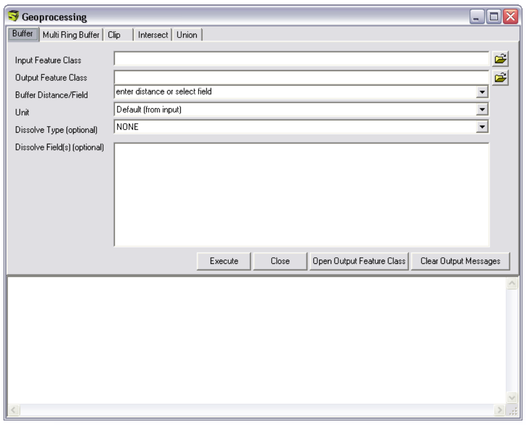
- Union - Computes a geometric intersection of the Input Features. All features will be written to the Output Feature Class with the attributes from the Input Features which it overlaps.



citilabs

Geoprocessing Tools in Cube

- “Tools > Geoprocessing…”



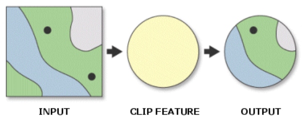
Input Feature Class
Output Feature Class
Buffer Distance/Field: enter distance or select field
Unit: Default (from input)
Dissolve Type (optional): NONE
Dissolve Field(s) (optional)

Writing Geoprocessing Scripts in Voyager

- Still under development
- However, you can begin using the Geoprocessing module “at your own risk”
- Available operations:
  - CLIP
  - INTERSECT
  - UNION
  - BUFFER
  - MULTIBUFFER (unstable)
  - PTACCESS (unstable)
- RUN PGM=GEOPROCESSING
  …
  ENDRN

cube5

Geoprocessing: Clip

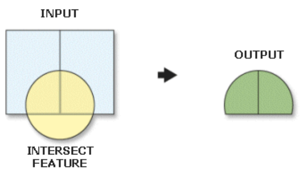


- Extracts input features that overlay the clip features
- Invoke via CLIP command
- Keywords:
  - SHPI – input features to be clipped
  - CLIPI – features used to clip the input features
  - SHPO – the feature class to be created
  - TOLERANCE (optional) – minimum distance separating all feature coordinates (nodes and vertices) as well as the distance a coordinate can move in X or Y
- Input features of any geometry type, polygon clip features

citilabs

cube5

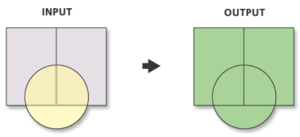
Geoprocessing: Intersect



- Computes a geometric intersection of the Input Features. Features or portions of features which overlap in all layers and/or feature classes will be written to the Output Feature Class.
- Invoked via INTERSECT command
- Keywords:
  - SHPI[1],SHPI[2] – Input feature classes (limited to two, any type geometry)
  - RANK[1],RANK[2] (optional) – When the distance between features is less than the tolerance, features with the lower rank will snap to the feature with the higher rank. The highest rank is one.
  - SHPO – The feature class to which the results will be written.
  - JOINATTRIBUTES – Determines which attributes from the Input Features will be transferred to the Output Feature Class: ‘ALL’ (default), ‘NO_FID’, or ‘ONLY_FID’
  - TOLERANCE (optional) – You can set the value to be higher for data that has less coordinate accuracy and lower for datasets with extremely high accuracy.
  - OUTPUTTYPE – Type of intersection: ‘INPUT’ (min. dimension), ‘LINE’, ‘POINT’

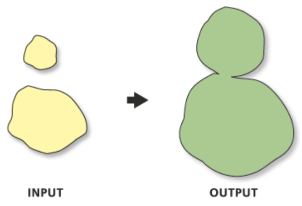
citilabs

Geoprocessing: Union

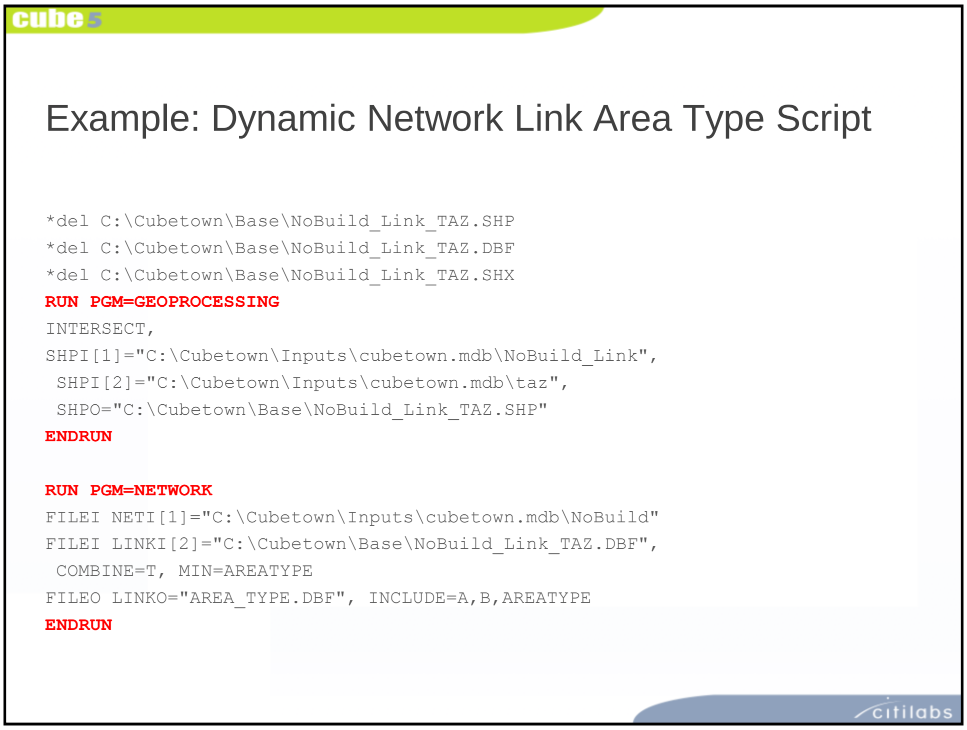


- Computes a geometric intersection of the Input Features. All features will be written to the Output Feature Class with the attributes from the Input Features which it overlaps.
- Invoked via UNION command
- Keywords:
  - SHPI[1],SHPI[2] – the input feature classes or layers (**polygon only**)
  - RANK[1],RANK[2] (optional) – When the distance between features is less than the tolerance, the features with the lower rank will snap to the feature with the higher rank. The highest rank is one.
  - SHPO – The feature class that will contain the results.
  - JOINATTRIBUTES – Determines which attributes from the Input Features will be transferred to the Output Feature Class: ‘ALL’ (default), ‘NO_FID’, or ‘ONLY_FID’
  - TOLERANCE (optional) – You can set the value to be higher for data that has less coordinate accuracy and lower for datasets with extremely high accuracy.
  - GAPS = ‘NO_GAPS’ — A feature will be created for the areas in the output that are completely enclosed by polygons. This feature will have blank attributes.

Geoprocessing: Buffer

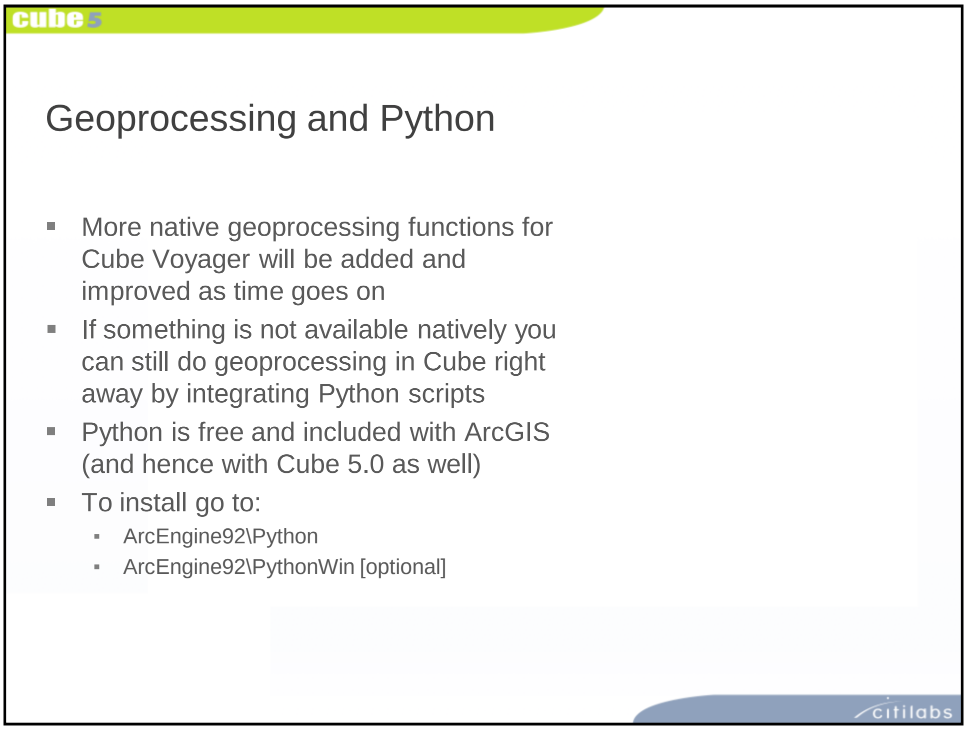


- Invoked using BUFFER command
- Keywords:
  - SHPI – The features to be buffered.
  - SHPO – The feature class that will contain the buffer features.
  - DISTANCE – The distance used to create buffer zones around Input Features. Either a value (with units) or a numeric field can be used to provide buffer distances.
  - DISSOLVE – Specifies whether a dissolve will be performed to remove buffer feature overlap: ‘NONE’ (default), ‘ALL’, or ‘LIST’ (dissolves by a given list of fields)
  - DISSOLVEFIELDS – List of field(s) for the dissolve. Buffer polygons that share the same set of values in their Dissolve Field(s) will be dissolved together.
- Negative distances can be used when buffering polygon features, to create buffers on the inside of the polygon features. Using a negative value will shrink the output polygon feature by the distance specified.



Example: Dynamic Network Link Area Type Script

```
*del C:\Cubetown\Base\NoBuild_Link_TAZ.SHP
*del C:\Cubetown\Base\NoBuild_Link_TAZ.DBF
*del C:\Cubetown\Base\NoBuild_Link_TAZ.SHX
RUN PGM=GEOPROCESSING
INTERSECT,
SHPI[1]="C:\Cubetown\Inputs\cubetown.mdb\NoBuild_Link",
 SHPI[2]="C:\Cubetown\Inputs\cubetown.mdb\taz",
 SHPO="C:\Cubetown\Base\NoBuild_Link_TAZ.SHP"
ENDRUN

RUN PGM=NETWORK
FILEI NETI[1]="C:\Cubetown\Inputs\cubetown.mdb\NoBuild"
FILEI LINKI[2]="C:\Cubetown\Base\NoBuild_Link_TAZ.DBF",
 COMBINE=T, MIN=AREATYPE
FILEO LINKO="AREA_TYPE.DBF", INCLUDE=A,B,AREATYPE
ENDRUN
```



Geoprocessing and Python

- More native geoprocessing functions for Cube Voyager will be added and improved as time goes on
- If something is not available natively you can still do geoprocessing in Cube right away by integrating Python scripts
- Python is free and included with ArcGIS (and hence with Cube 5.0 as well)
- To install go to:
  - ArcEngine92\Python
  - ArcEngine92\PythonWin [optional]

cube5

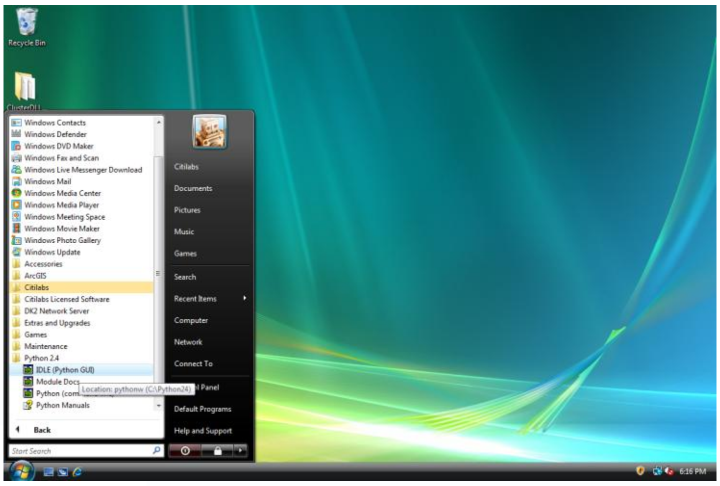
Writing A Custom Geoprocessing Program For Voyager in Python

- Open the IDLE Python Editor
- Import and Create the Geoprocessor
- Define Command-Line Arguments
- Delete Output If It Already Exists
- Call Geoprocessing Tool
- Print Messages, Warnings, & Errors
- Save as a *.py file

citilabs

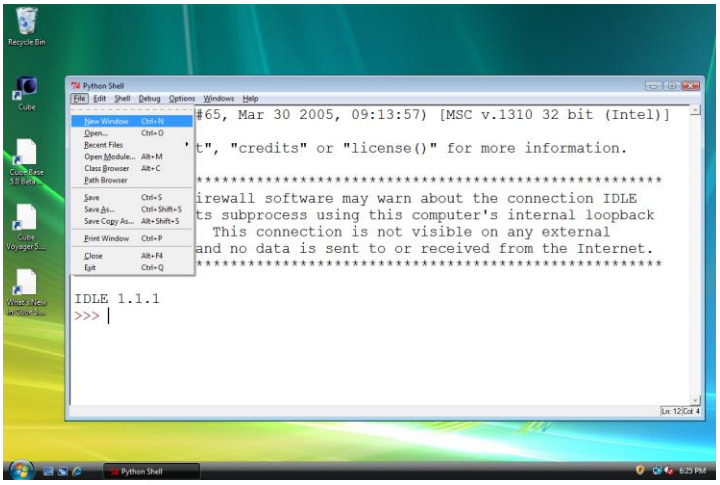
cube5

Open the IDLE Python Editor



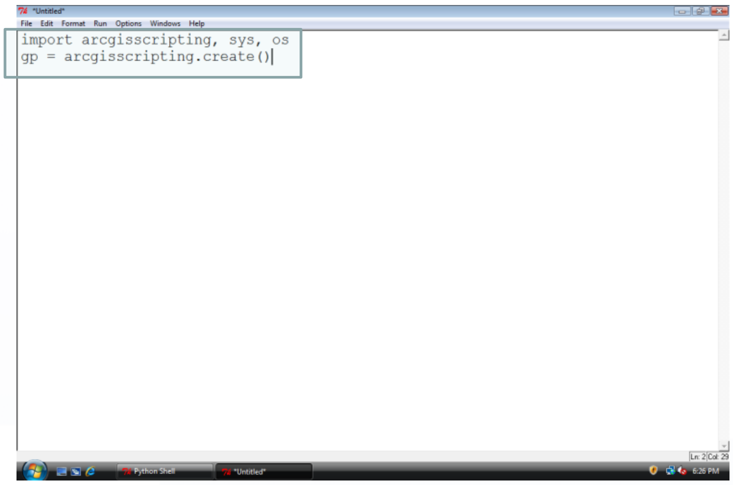
citilabs

Open a New File



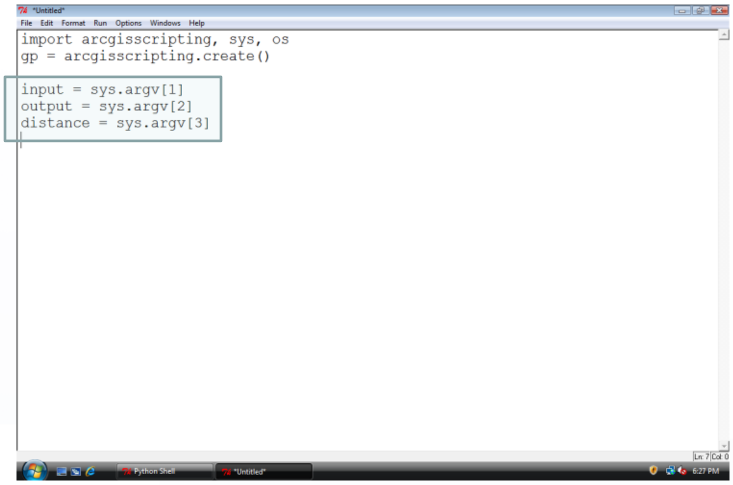
```
#65, Mar 30 2005, 09:13:57) [MSC v.1310 32 bit (Intel)]

t", "credits" or "license()" for more information.

******************************************************
irewall software may warn about the connection IDLE
ts subprocess using this computer's internal loopback
  This connection is not visible on any external
and no data is sent to or received from the Internet.
******************************************************

IDLE 1.1.1
>>> 
```

Import and Create the Geoprocessor



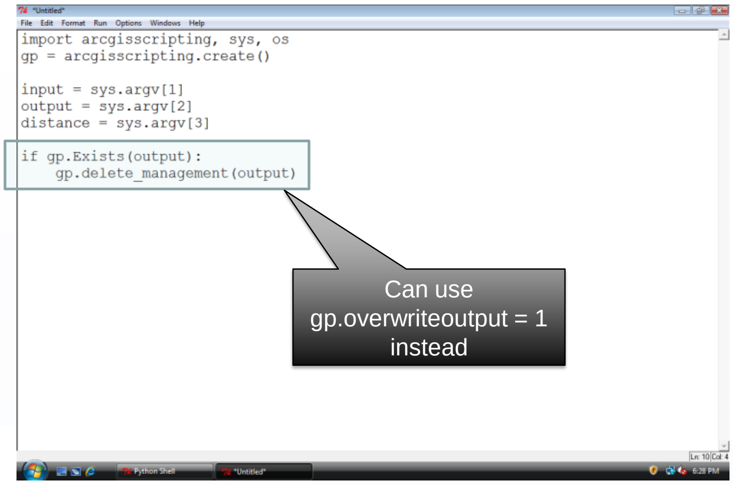
```
import arcgisscripting, sys, os
gp = arcgisscripting.create()
```

Define Command-Line Arguments



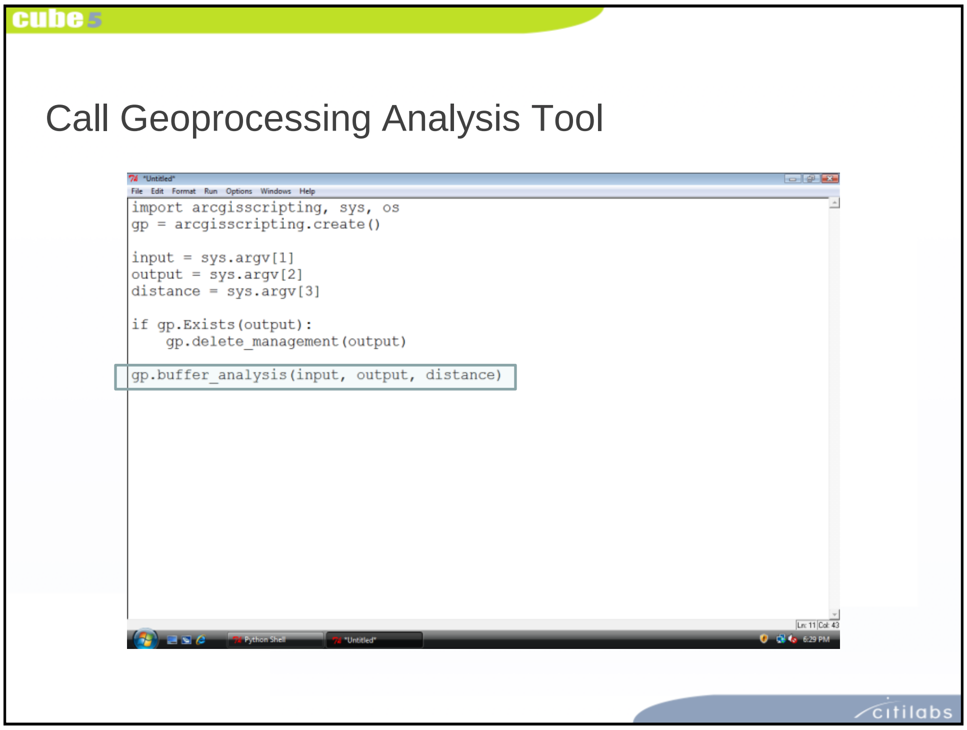
```
import arcgisscripting, sys, os
gp = arcgisscripting.create()

input = sys.argv[1]
output = sys.argv[2]
distance = sys.argv[3]
```

Delete Output If It Already Exists

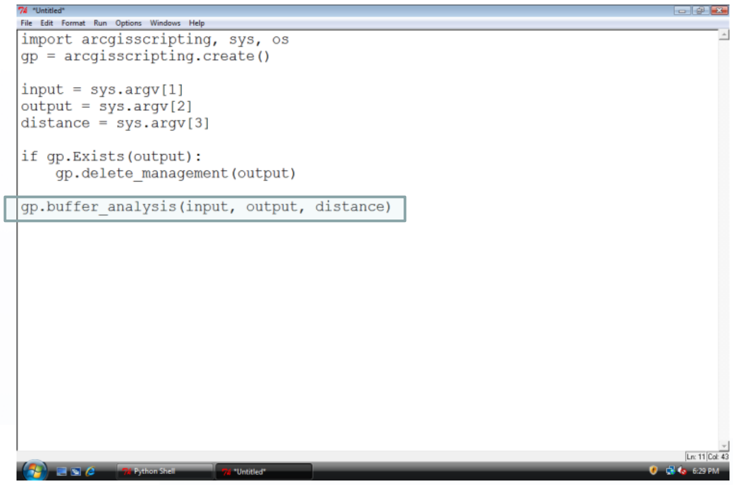


```
import arcgisscripting, sys, os
gp = arcgisscripting.create()

input = sys.argv[1]
output = sys.argv[2]
distance = sys.argv[3]

if gp.Exists(output):
    gp.delete_management(output)
```

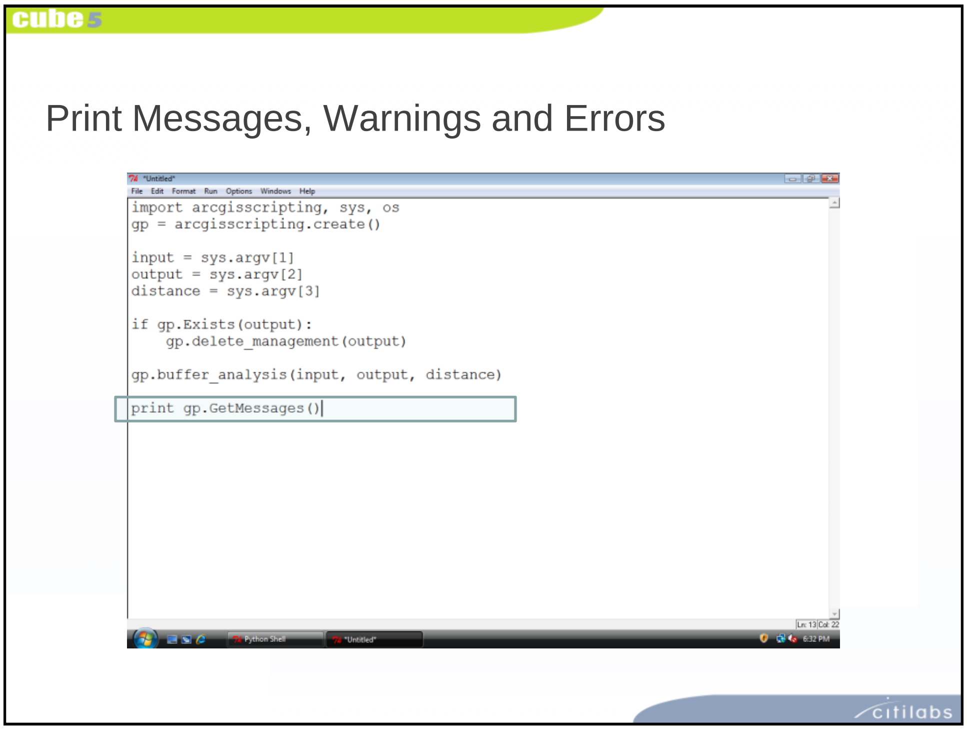
Can use gp.overwriteoutput = 1 instead



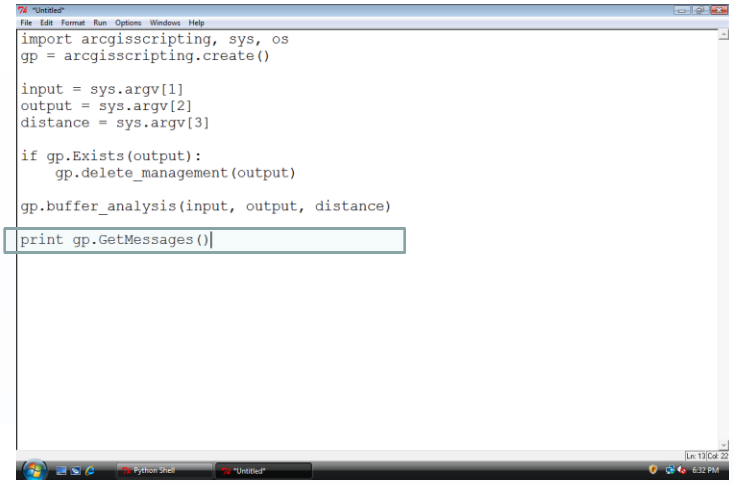
Call Geoprocessing Analysis Tool



```
import arcgisscripting, sys, os
gp = arcgisscripting.create()

input = sys.argv[1]
output = sys.argv[2]
distance = sys.argv[3]

if gp.Exists(output):
    gp.delete_management(output)

gp.buffer_analysis(input, output, distance)
```

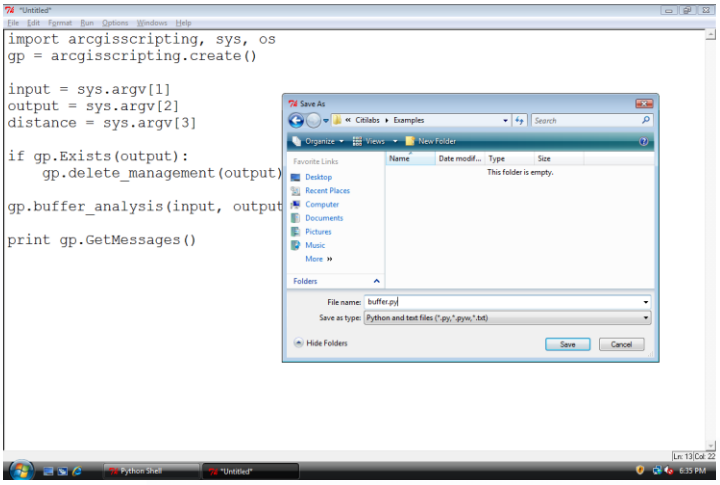


Print Messages, Warnings and Errors



```
import arcgisscripting, sys, os
gp = arcgisscripting.create()

input = sys.argv[1]
output = sys.argv[2]
distance = sys.argv[3]

if gp.Exists(output):
    gp.delete_management(output)

gp.buffer_analysis(input, output, distance)

print gp.GetMessages()
```

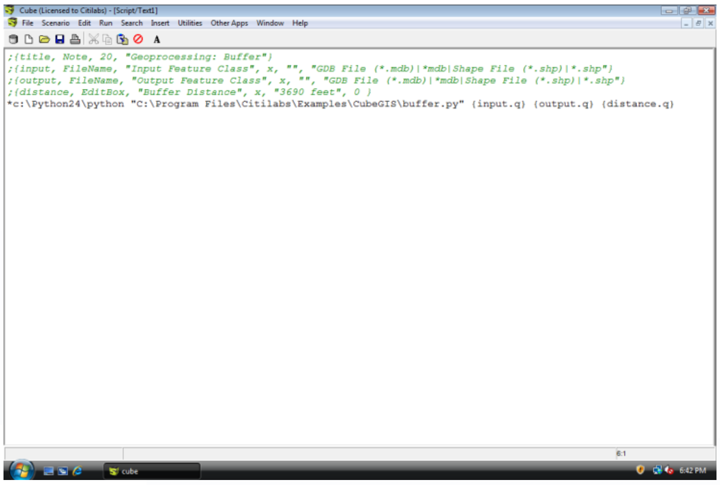
Save to a *.py File



```
import arcgisscripting, sys, os
gp = arcgisscripting.create()

input = sys.argv[1]
output = sys.argv[2]
distance = sys.argv[3]

if gp.Exists(output):
    gp.delete_management(output)

gp.buffer_analysis(input, output

print gp.GetMessages()
```

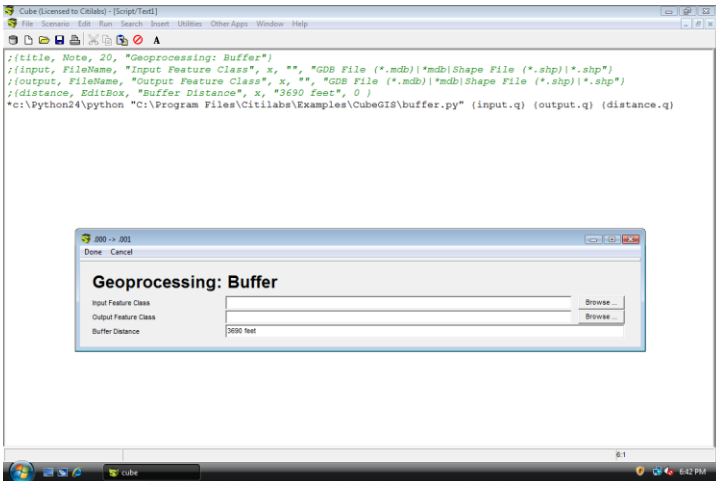
File name: buffer.py
Save as type: Python and text files (*.py,*.pyw,*.txt)

Calling Python From Voyager



```
;{title, Note, 20, "Geoprocessing: Buffer"}
;{input, FileName, "Input Feature Class", x, "", "GDB File (*.mdb)|*mdb|Shape File (*.shp)|*.shp"}
;{output, FileName, "Output Feature Class", x, "", "GDB File (*.mdb)|*mdb|Shape File (*.shp)|*.shp"}
;{distance, EditBox, "Buffer Distance", x, "3690 feet", 0 }
*c:\Python24\python "C:\Program Files\Citilabs\Examples\CubeGIS\buffer.py" {input.q} {output.q} {distance.q}
```

Hit F9 to Run Macro Processor


Cube (Licensed to Citilabs) - [Script/Text1]
File Scenario Edit Run Search Insert Utilities Other Apps Window Help
.000 -> .001
Done Cancel
Browse ...
Browse ...

```
;{title, Note, 20, "Geoprocessing: Buffer"}
;{input, FileName, "Input Feature Class", x, "", "GDB File (*.mdb)|*mdb|Shape File (*.shp)|*.shp"}
;{output, FileName, "Output Feature Class", x, "", "GDB File (*.mdb)|*mdb|Shape File (*.shp)|*.shp"}
;{distance, EditBox, "Buffer Distance", x, "3690 feet", 0 }
*c:\Python24\python "C:\Program Files\Citilabs\Examples\CubeGIS\buffer.py" {input.q} {output.q} {distance.q}
```

Geoprocessing: Buffer

Input Feature Class:
Output Feature Class:
Buffer Distance: 3690 feet

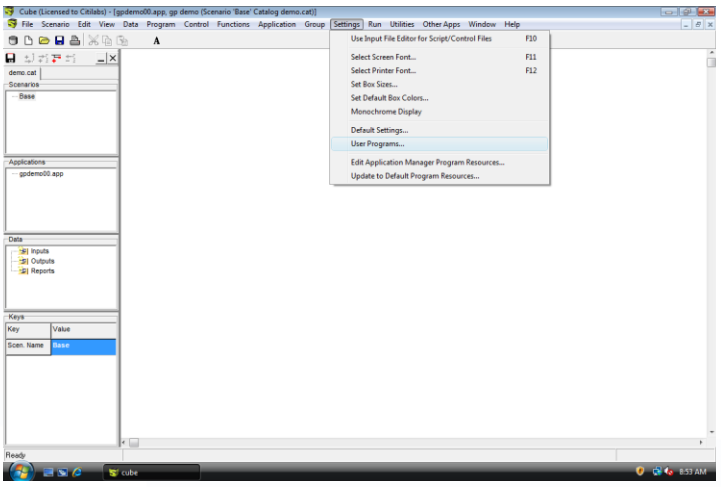
Making a Geoprocessing User Program

- User programs must have a DLL, BAT, or COM filename extension
- We can write a batch file that calls the python script we wrote earlier with arguments
- E.g. Buffer.bat:
  - c:\Python24\python "C:\Program Files\Citilabs\Examples\CubeGIS\buffer.py" %1 %3 %4 > %2 2>&1

Adding the User Program in Cube

- Open Catalog and Application
- Add New User Program
- Set Up "Program" Tab
- Set Up Input Files
- Set Up Output Files
- Add Keys to Command Line
- Add User Program To Layout
- Connect Applications & Link to Data

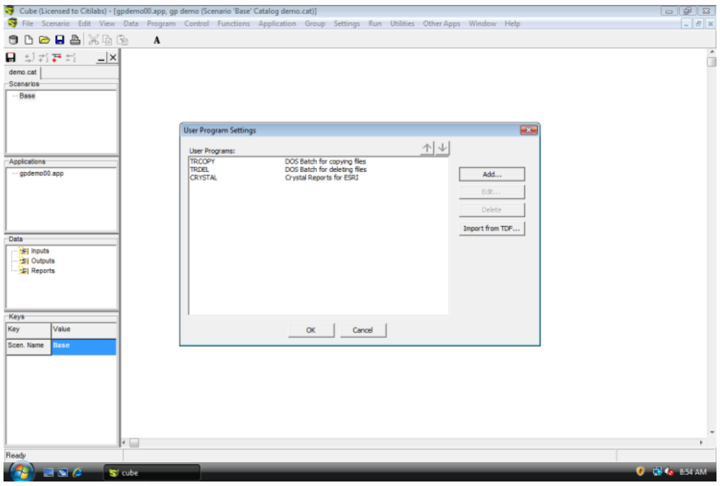
Open Catalog and Application


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]
File Scenario Edit View Data Program Control Functions Application Group Settings Run Utilities Other Apps Window Help
Use Input File Editor for Script/Control Files F10
Select Screen Font... F11
Select Printer Font... F12
Set Box Sizes...
Set Default Box Colors...
Monochrome Display
Default Settings...
User Programs...
Edit Application Manager Program Resources...
Update to Default Program Resources...
demo.cat
Scenarios
Base
Applications
gpdemo00.app
Data
Inputs
Outputs
Reports
Keys
Ready
cube
8:53 AM

Key	Value
Scen. Name	Base

cube5

Add New User Program



User Program Settings

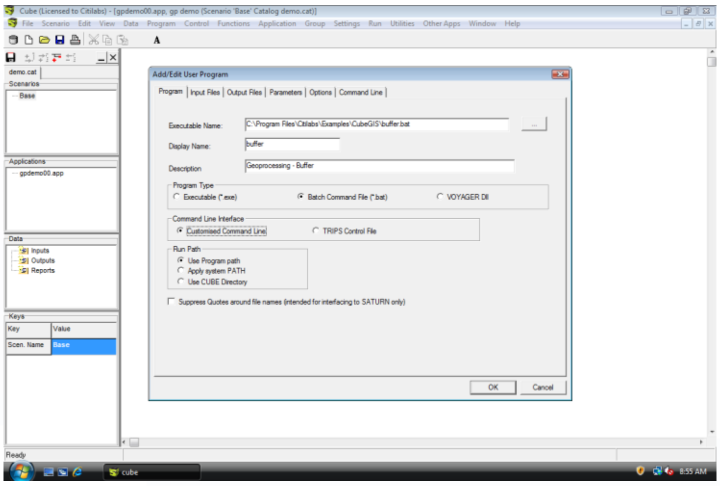
User Programs:

TRCOPY	DOS Batch for copying files
TRDEL	DOS Batch for deleting files
CRYSTAL	Crystal Reports for ESRI

citilabs

cube5

Set Up “Program” Tab



Add/Edit User Program

Program | Input Files | Output Files | Parameters | Options | Command Line

Executable Name: C:\Program Files\Citilabs\Examples\CubeGIS\buffer.bat

Display Name: buffer

Description: Geoprocessing - Buffer

Program Type: Executable (*.exe) [✓ Batch Command File (*.bat)] VOYAGER Dll

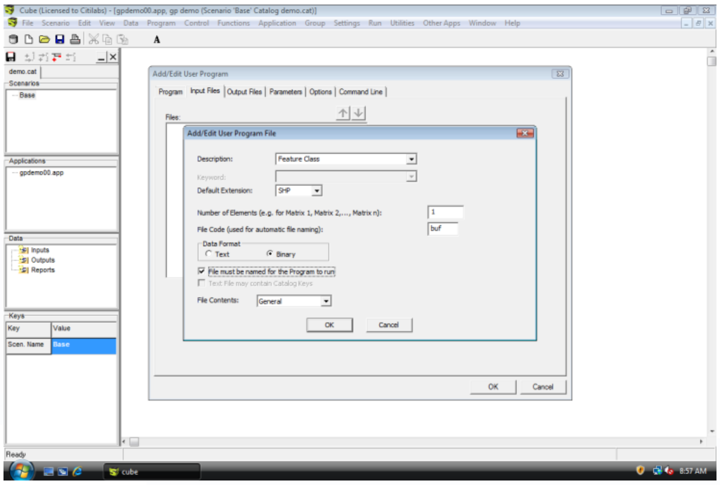
Command Line Interface: [✓ Customised Command Line] TRIPS Control File

Run Path: [✓ Use Program path] Apply system PATH Use CUBE Directory

Suppress Quotes around file names (intended for interfacing to SATURN only)

citilabs

Set Up Input Files


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]
File Scenario Edit View Data Program Control Functions Application Group Settings Run Utilities Other Apps Window Help
demo.cat
Scenarios
Base
Applications
gpdemo00.app
Data
Inputs
Outputs
Reports
Keys
Ready
cube
8:57 AM

Key	Value
Scen. Name	Base

Add/Edit User Program

Program | Input Files | Output Files | Parameters | Options | Command Line

Files:

Add/Edit User Program File

Description: Feature Class

Keyword:

Default Extension: SHP

Number of Elements (e.g. for Matrix 1, Matrix 2,..., Matrix n): 1

File Code (used for automatic file naming): buf

Data Format: Text [✓ Binary]

[✓] File must be named for the Program to run

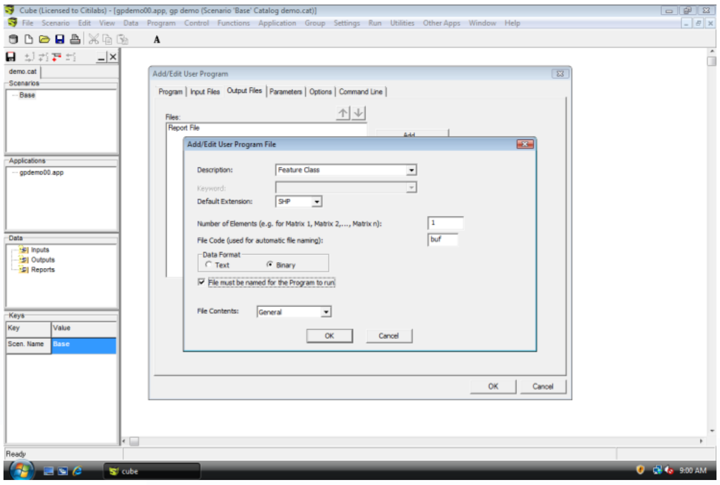
[ ] Text File may contain Catalog Keys

File Contents: General

OK Cancel

OK Cancel

Set Up Output Files


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]
File Scenario Edit View Data Program Control Functions Application Group Settings Run Utilities Other Apps Window Help
demo.cat
Scenarios
Base
Applications
gpdemo00.app
Data
Inputs
Outputs
Reports
Keys
Ready
cube
9:00 AM

Key	Value
Scen. Name	Base

Add/Edit User Program

Program | Input Files | Output Files | Parameters | Options | Command Line

Files:

Report File

Add

Add/Edit User Program File

Description: Feature Class

Keyword:

Default Extension: SHP

Number of Elements (e.g. for Matrix 1, Matrix 2,..., Matrix n): 1

File Code (used for automatic file naming): buf

Data Format: Text [✓ Binary]

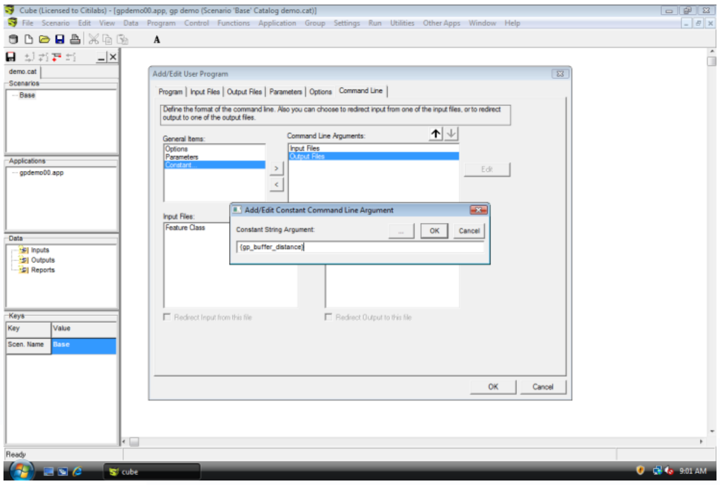
[✓] File must be named for the Program to run

File Contents: General

OK Cancel

OK Cancel

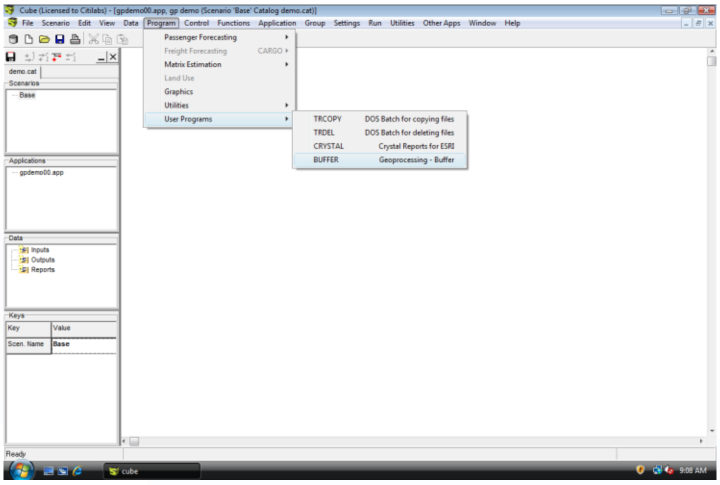
Add Key to Command Line


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]
File Scenario Edit View Data Program Control Functions Application Group Settings Run Utilities Other Apps Window Help
Add/Edit User Program
Program | Input Files | Output Files | Parameters | Options | Command Line
General Items:
Options
Parameters
Constant...
Command Line Arguments:
Input Files
Output Files
Edit
Input Files:
Feature Class
Add/Edit Constant Command Line Argument
Constant String Argument:
OK
Cancel
Redirect Input from this file
Redirect Output to this file
OK
Cancel
Ready

Define the format of the command line. Also you can choose to redirect input from one of the input files, or to redirect output to one of the output files.

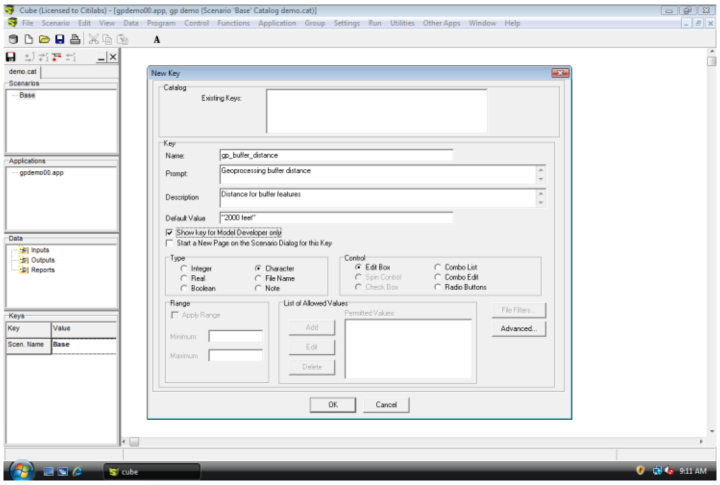
Constant String Argument: {gp_buffer_distance}

Add User Program to Layout


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]
File Scenario Edit View Data Program Control Functions Application Group Settings Run Utilities Other Apps Window Help
Passenger Forecasting
Freight Forecasting CARGO
Matrix Estimation
Land Use
Graphics
Utilities
User Programs
TRCOPY DOS Batch for copying files
TRDEL DOS Batch for deleting files
CRYSTAL Crystal Reports for ESRI
BUFFER Geoprocessing - Buffer
Ready

cube5

Add Geoprocessing Catalog Key


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]

Key	Value
Scen. Name	Base

New Key

Catalog
Existing Keys:

Key
Name: gp_buffer_distance
Prompt: Geoprocessing buffer distance
Description: Distance for buffer features
Default Value: "2000 feet"

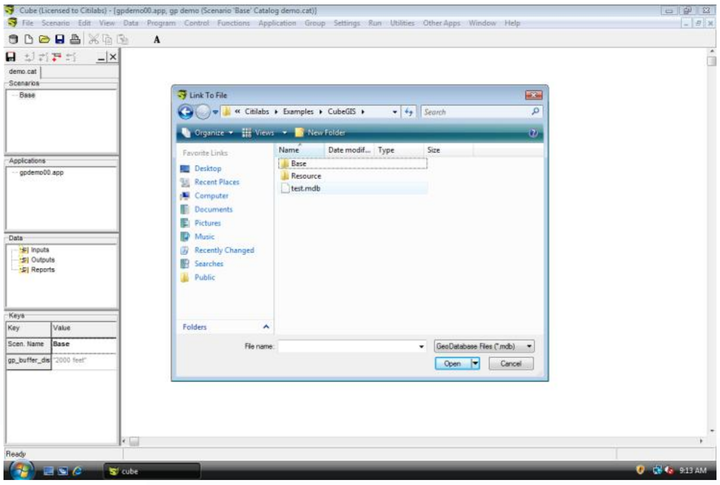
[✓] Show key for Model Developer only
[ ] Start a New Page on the Scenario Dialog for this Key

Type: Integer / Real / Boolean / [✓ Character] / File Name / Note

Control: [✓ Edit Box] / Spin Control / Check Box / Combo List / Combo Edit / Radio Buttons

cube5

Link to MDB File


Cube (Licensed to Citilabs) - [gpdemo00.app, gp demo (Scenario 'Base' Catalog demo.cat)]

Key	Value
Scen. Name	Base
gp_buffer_dis	"2000 feet"

Link To File

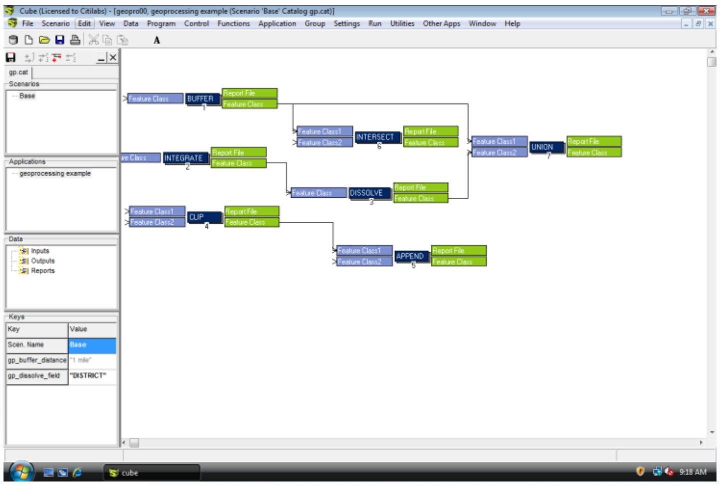
« Citilabs ▸ Examples ▸ CubeGIS ▸

Base
Resource
test.mdb

File name:
GeoDatabase Files (*.mdb)

cube5

Connect Geoprocesses Together



Key	Value
Scen. Name	Base
gp_buffer_distance	"1 mile"
gp_dissolve_field	"DISTRICT"

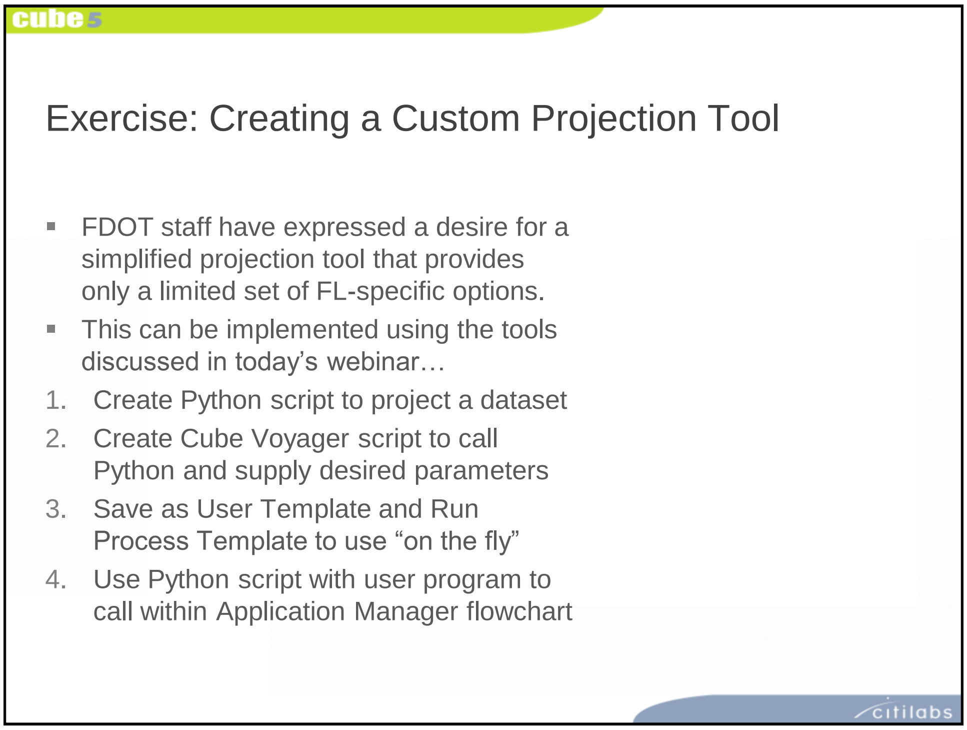
citilabs

cube5

Recommended On-Line Reading

- ESRI ArcGIS Documentation (http://webhelp.esri.com/arcgisdesktop/9.2):
  - What Is Geoprocessing?
  - An Overview of Commonly Used Tools
  - Writing Python Scripts
- Python Documentation (http://python.org):
  - Beginner's Guide
  - Tutorial
  - Library Reference

citilabs



cube5

Exercise: Creating a Custom Projection Tool

- FDOT staff have expressed a desire for a simplified projection tool that provides only a limited set of FL-specific options.
- This can be implemented using the tools discussed in today’s webinar…

1. Create Python script to project a dataset
2. Create Cube Voyager script to call Python and supply desired parameters
3. Save as User Template and Run Process Template to use “on the fly”
4. Use Python script with user program to call within Application Manager flowchart

citilabs