



Effective Geodatabase Programming

Craig Cleveland & Kevin Sigwart

Esri Developer Summit
Washington, DC

About the presenters

- Craig Cleveland

Knows nothing about
programming...BUT

- Kevin Sigwart

He's the man.



Agenda

- Effective geodatabase programming via a “problem of the day”

Setting the problem

- **Geo-enable non-spatial data (RSS)**
- **Publish that data to a service**
- **Update that data at a regular interval**

Original Solution

RSS



Geography



(File GDB)

ArcGIS Server



Challenges

- **Updating the service – ArcGIS Server locked the feature class**
 - Had to stop the ArcGIS Server service...
 - Delete the original feature class...
 - Restart the service...

Had to be a better way...

And there was.

Weather Warnings Script

Kevin Sigwart

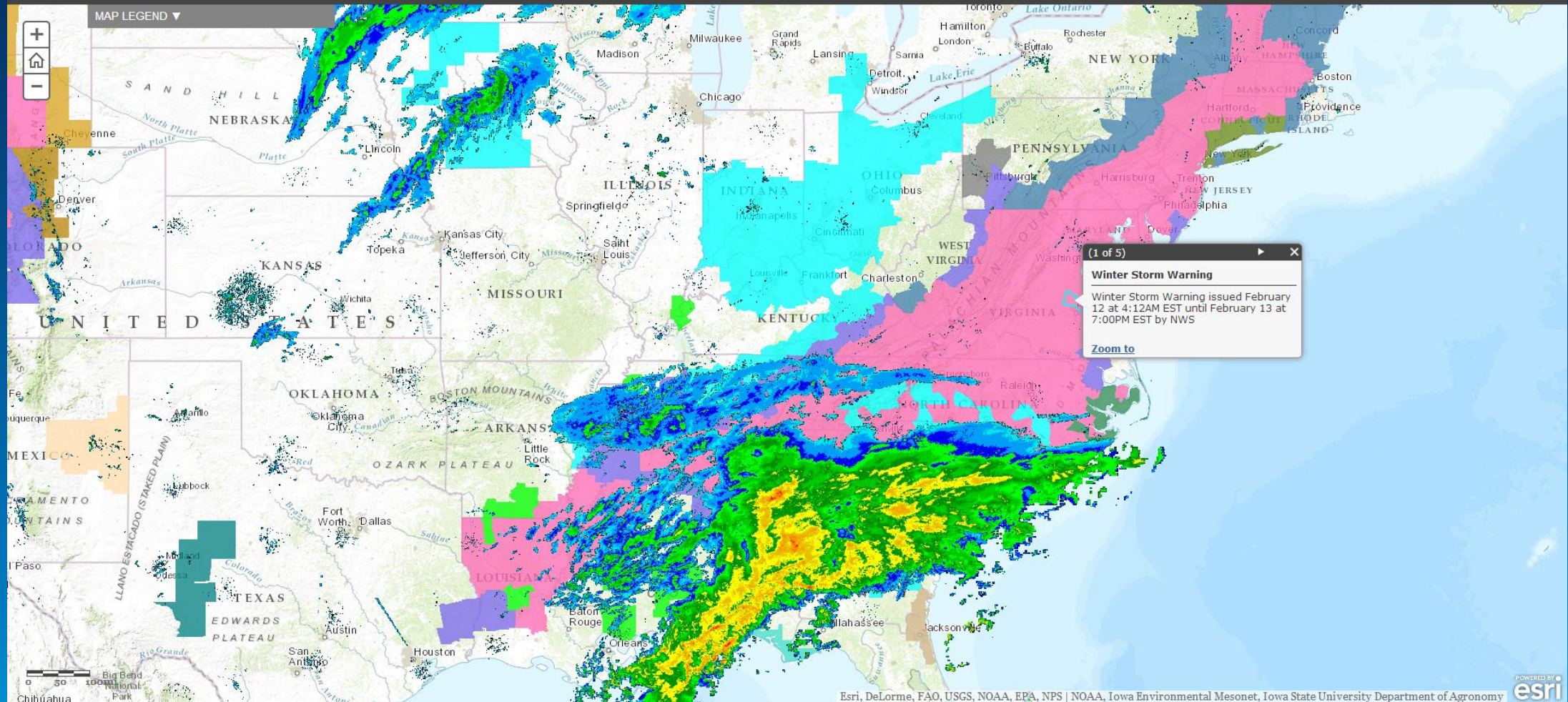
```
66         '(UTC+9:00) Adelaide, Darwin : 9:00,
67         '(UTC+10:00) Brisbane, Melbourne, Gu
68         '(UTC+11:00) Magadan, Solomon Islands
69         '(UTC+12:00) Fiji, Marshall Islands
70     }
71
72     ***** Script Error
73     class CustomError(Exception):
74     def __init__(self, value):
75         self.parameter = value
76     def __str__(self):
77         return repr(self.parameter)
78
79     ***** Script Error
80
81     class ObservationPoint:
82     def __init__(self):
83         # Get centroid of input for obser
84         desc = arcpy.Describe(inFC)
85         sourceSR = desc.spatialReference
86         newSR = arcpy.SpatialReference()
87         newSR.factoryCode = sourceSR.fact
88         newSR.create()
89         self.SR = newSR
90         self.X = desc.extent.XMin + ((de
91         self.Y = desc.extent.YMin + ((de
92         self.ObservationPoint()
93
94     def ObservationPoint(self):
```

Python file

Example Weather Map (SAMPLE)

Example Weather Map (SAMPLE)

Un-indent the selected region one level (Ctrl-**<**)



Result

Near Real Time Weather Feeds As A Service

Architecture

RSS



Weather Warnings
Staging



Weather Warnings
Production



ArcGIS Server



Counties



Steps

- **Connect to Staging Database**
- **Remove Old Features**
- **Get Alerts**
- **Get Counties Associated with Alert**
- **Insert Alerts\Counties into Feature Class**
- **Synch Changes with Replicated Database**
- **Clean up workspace**

Pseudo Code

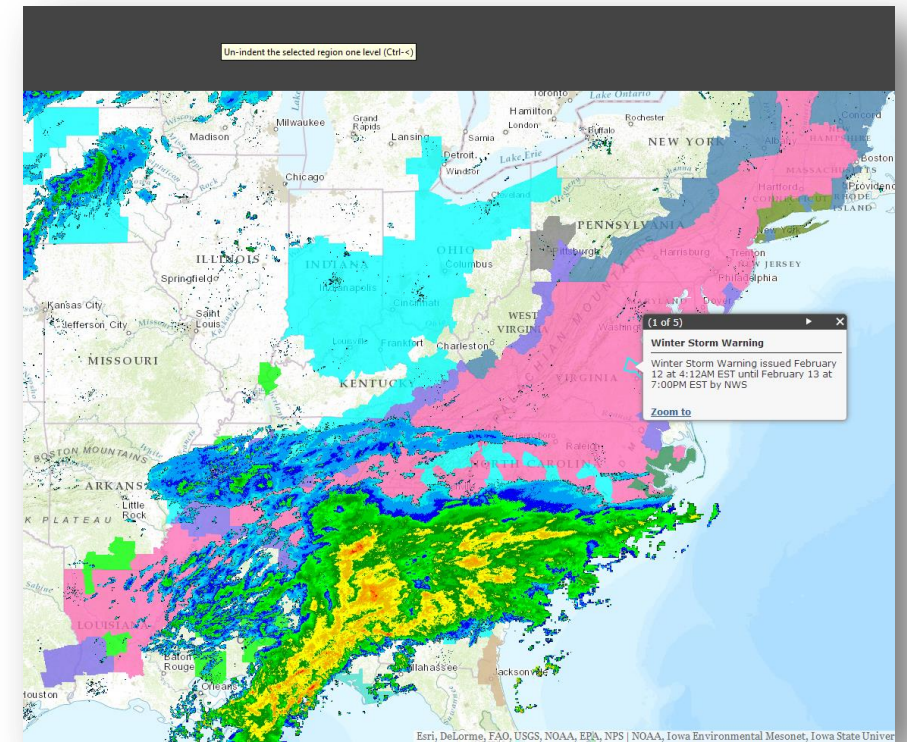
- **ConnectToStaggingDB()**
- **DeleteOldRecords()**
- **GetAlerts()**
- **AddAlertsToFeatureClass (alerts)**
 - **For each alert**
 - **For each County**
 - **GetCountyShape (FIPS)**
 - **InsertRecord (alert, shape)**


Pseudo Code (Continue)

- **SynchChanges()**
 - **ConnectToProductionDatabase()**
 - **SynchtionizeChanges()**
- **DataCleanUp()**

Demo

Kevin Sigwart







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


A repository for the python script used in the workshop Effective Database Programming


5 commits 1 branch

 branch: master ▾ [EffectiveDatabaseProgrammingWrkShop](#)

Added one more thing to readme

 [kevinsigwart](#) authored 3 hours ago

	Scripts	uploading example code and first powerpoint
	Slides	uploading example code and first powerpoint
	.gitattributes	uploading example code and first powerpoint
	.gitignore	uploading example code and first powerpoint
	README.md	Added one more thing to readme

 [README.md](#)













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ArcGIS Help 10.2

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What is ArcPy?

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ArcPy is a site package that builds on (and is a successor to) the successful arcpy module. Its goal is to create the cornerstone for a useful and productive way to perform geographic data analysis, data conversion, data management, and map automation with Python.

This package provides a rich and native Python experience offering code completion (type a keyword and a dot to get a pop-up list of properties and methods supported by that keyword; select one to insert it) and reference documentation for each function, module, and class.

The additional power of using ArcPy within Python is the fact that Python is a general-purpose programming language. It is interpreted and dynamically typed.

Resources

GitHub, ArcGIS Resource Center



Understanding our world.