USING PYTHON WITH ARCGIS BEGINNER LEVEL

ONLINE TRAINING
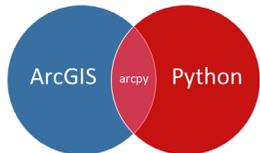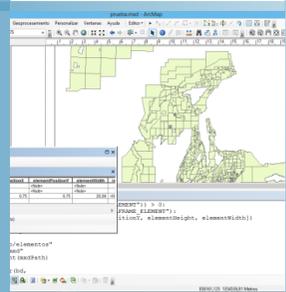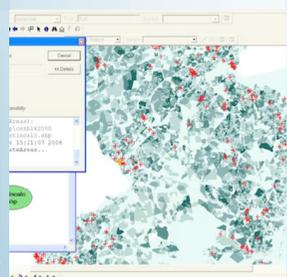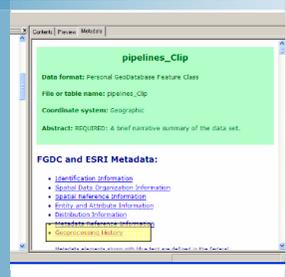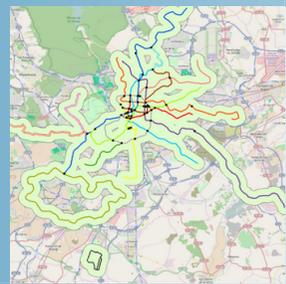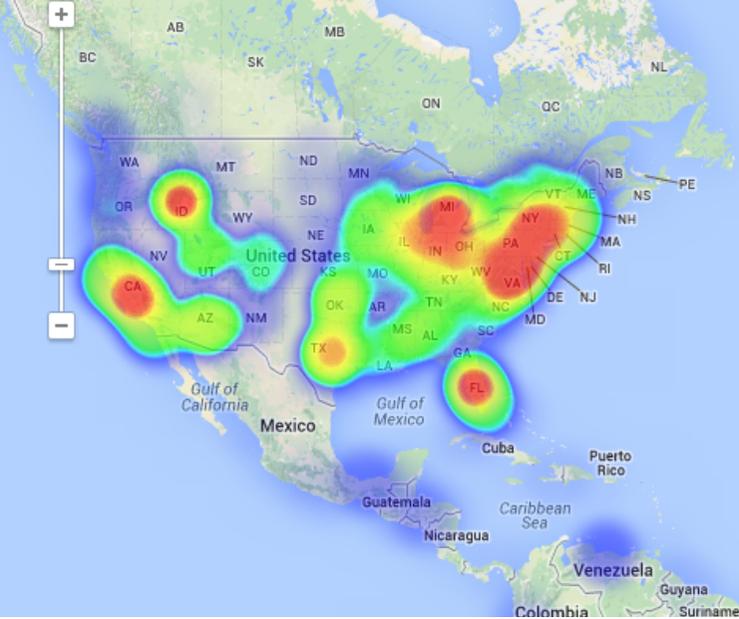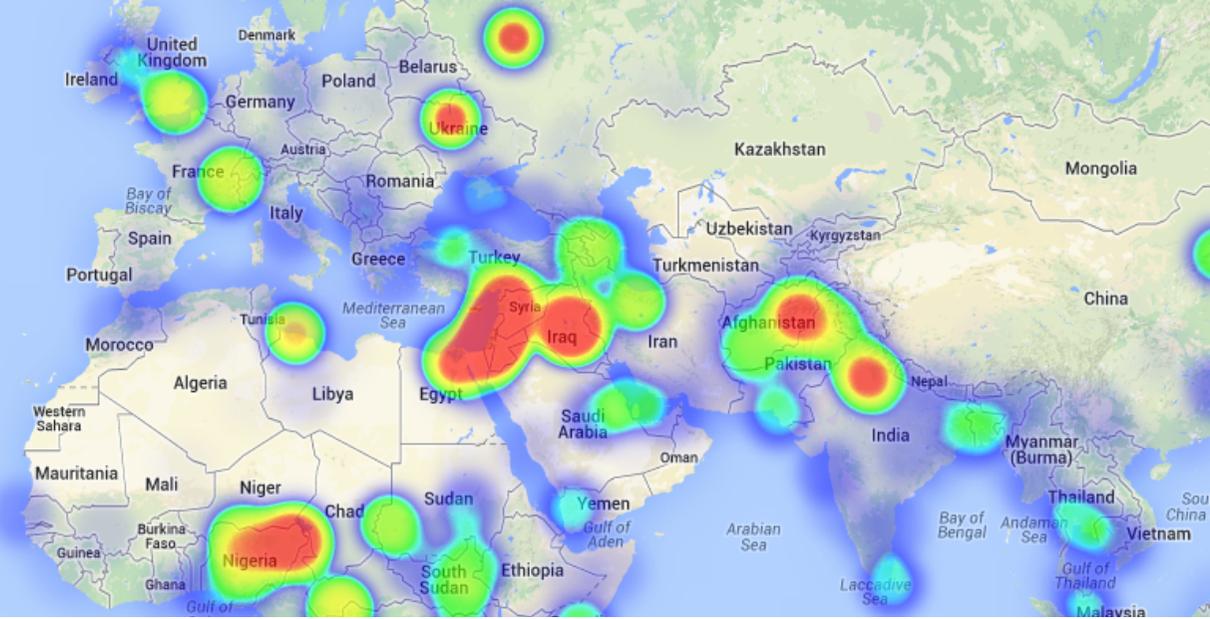
COURSE

The course is focused on the initiation of students in the use of Python programming language along with ArcGIS Desktop collection software on: process and tasks automation, vector and raster analysis, map generation and publication, geoprocessing model creation, etc.

The purpose of this course is to transmit to the student information about creating and editing spatial data using Python programming language, a command line software application which can be directly applied when creating complex stand-alone Python scripts or Python script tools. Use Python to power up your GIS needs, automate your workflows and take advantages of all ArcGIS platform capabilities

GOALS

· Understand what programming is and how can be used to solve certain spatial problems, how Python programming language can be used along with ArcGIS platform capabilities.

· Provide training in the automation of tasks and development of scripting tools using Python programming language in ArcGIS environment.

· Improve your GIS skills and familiarize yourself with a programming and scripting language. Gain knowledge in GIS development environment.
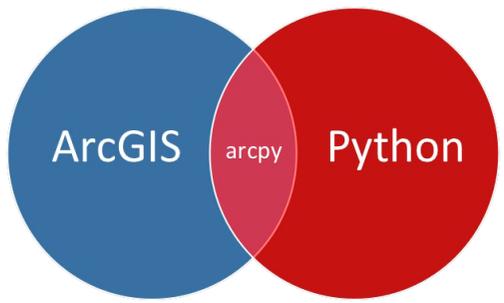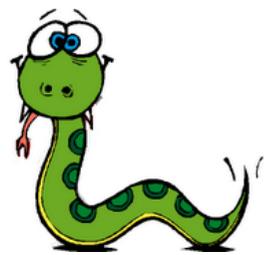
METHOLOGY

Enrolled students in this online course will have access to our virtual e-learning platform (which is available 24 hours), where they will find the content of the course, practical exercises, forum discussion and additional content. One of the advantages of this online platform, is that students can benefit of real time support and assistance offered by the instructor (2 hours per week), whom they can contact via direct messages, regarding course related issues, at any moment. They can also contact the instructor via email.

PERFILES

The course is aimed at professionals of the GIS world who, with knowledge or not of programming, want to know all the possibilities that programming with ArcPy offers.

INSTRUCTORS

Chencho Martín Lagunas

GIS Developer with extensive experience in Full-Stack software development, specialized in GIS data analysis and pre-processing using Python.

Alberto Santos Estévez

Consultant and Geospatial Developer with more than 15 years' experience in GIS integrated solutions and high performance systems.

FIRST STEPS WITH PYTHON AND ARCGIS

Create a Python script file
Comments
Variables and types
Strings
Numbers
Lists
Dictionaries
Statements
Python - Decision Making - if statements
Loop Statements
Python File I/O - Read and Write Files in Python
Modules
Python programming language
The geoprocessing framework in ArcGIS
What is Python?
Introducing Python using the Python window in ArcGIS
Python Development Environment
Integrate Python in the Geoprocessing environment

WHAT IS ARCPY?

Introduction to ArcPy
Data access module - arcpy.da
Accessing geoprocessing tools
ArcPy Features
ArcPy Classes
ArcPy Modules
Importing ArcPy
Python and ArcPy versions

ENVIRONMENT CONFIGURATION

Getting and setting environment settings
Most used configurations/settings
·   Environment settings
·   Environment levels and hierarchy
·   Switch from application to tool
·   Scripts
"Env" class

ARCGIS GEOPROCESSING SERVICES AND TOOLS IN PYTHON

Introduction to Geoprocessing tools
Toolbox names, labels and alias
Understanding tool syntax
How to use Geoprocessing tools
Tool examples
Buffer
Append
Help
How to Create a Custom Tools
Exploring and working with toolboxes

ERROR HANDLING

Error messages
·   Understanding message types and severity
·   Receive and Respond to a Text Message with Python
Result Objects
Python - Exceptions Handling and how to manage them
·   Python exception message capturing
·   Event notification system
·   Handling special cases
Exploring the default Python error message
try statement
try/except/else
try/finally
raise

INTRODUCTION TO ARCPY.MAPPING

What is arcpy.mapping?
·   Using arcpy.mapping to control map documents and layer objects
·   Getting a list of layers in a map document
·   DataFrame
·   Fixing Data Sources
·   ListTableViews
·   ListLayoutElements
·   Adding, Working and updating layers in a map document
Printing or exporting maps
·   Export and print map documents to PDF using Python
Publishing a map service to ArcGIS Server
·   Use the arcpy.mapping function AnalyzeForSD to analyze your draft service
·   Converts a map to a map service definition (.msd) file
·   PublishMSDToServer

CREATE LISTS OF DATA

Introduction
List of ArcPy functions
Field
Index

HOW TO OBTAIN DESCRIPTIVE INFORMA-TION ABOUT DATA

Describe function - ArcPy Functions
FeatureClass properties - ArcPy Functions
Get Raster Properties
Get Layer properties
Table properties - ArcPy Functions
Dataset properties
Workspace properties

USE GEOPROCESSING TO SELECT, EDIT AND ADD DATA TO EXISTING TABLES AND LAYERS

Introduction
Cursor object functions
·   InsertCursor
·   SearchCursor
·   UpdateCursor
Geometry Objects

OTHER ARCPY ELEMENTS

SpatialReference
Extend
FieldMappings, FieldInfo, FieldMap
Point, Polyline, Polygon
Array

ACCESSING LICENSES AND EXTENSIONS

Introduction
Licenses for ArcGIS products: Desktop, Engine, Server
Extension Licensing

GEOPROCESSING REPORTS

Using geoprocessing options to control tool execution
Viewing script tools execution history
Using the Results window
History log files
Viewing metadata
Instructors:

TYC GIS Training

GIS Course.com

📞 (+34) 910 325 482

✉️ training@tycgis.com

Calle Fuencarral 158,
Entreplanta, Oficina 16-17
28010 Madrid

TYC GIS MÁLAGA
Avda. Pintor Joaquin Sorolla 137, 1° D
29017 MÁLAGA

TYC GIS MÉXICO
Tequesquitengo 4, Fracc. Cuaunáhuac
C.P. 62450,
Cuernavaca, Morelos.

TYC GIS PANAMÁ
Calle Eusebio A. Morales
El Cangrejo
PH Neo Plaza Oficina 2015