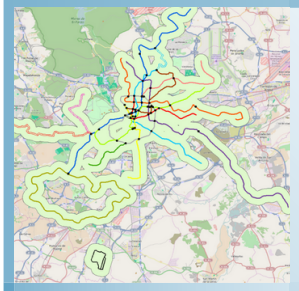
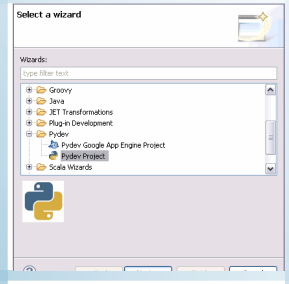
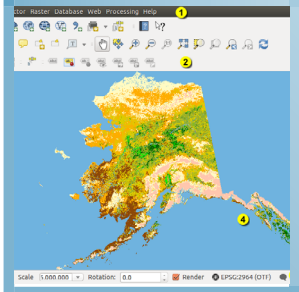
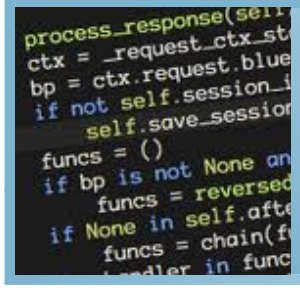
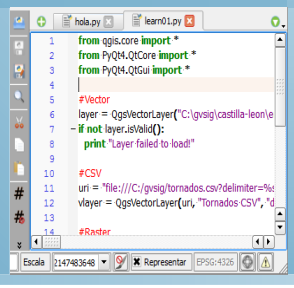
PYTHON WITH QGIS ONLINE TRAINING











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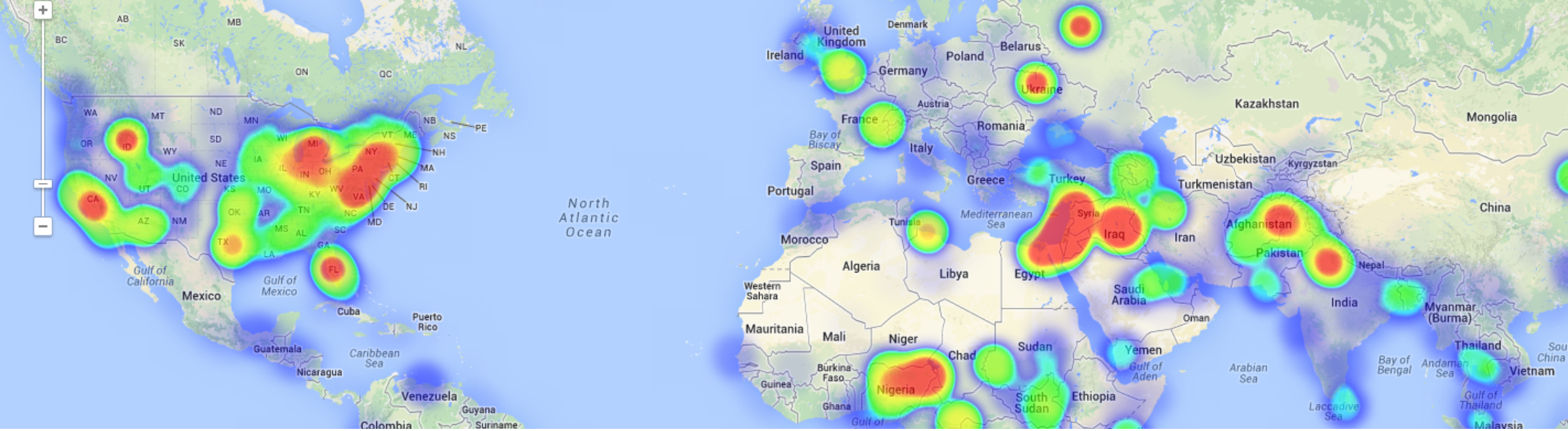


COURSE

The course is concentrated on the development of Web GIS Based applications using the latest HTML5 release, exploring its compatibility with Geographical Informational Systems and spatial capabilities like mapping or rendering options.

The student will enquire the basic concepts of HTML5 and besides that will get an insight in the evolution and progress of HTML programming language and how it become one of the most important technology in the web mapping revolution.

GOALS

- Make the student aware of the basic concepts of HTML5 programming language.
- Demonstrate the advantages HTML5 offer in various mapping aspects like visualization and geolocation.
- Learn the necessary tools in order to develop your own Web GIS Based application using HTML5 programming language.
- Gain experience in using HTML5 along with ArcGIS Server API for JavaScript.
- Practice your new developed skills through practical exercises and examples provided by our instructors.

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 PyQGIS offers.

INSTRUCTOR

Ricardo García Álvarez

With a Bachelor´s Degree in Geography from Autonom University of Madrid and a Master in Geographic Information Systems from Pontificia University of Salamanca, Ricardo is a Specialist in GIS/Remote Sensing business, with more than 15 years of work experience.
His area of expertise extends over transport networks project management, spatial accessibility studies with GIS, sustainable urban mobility plans, traffic studies (macro and micro simulation) and cartography products development (orthorectification, digital restitution and photogrammetry consulting). As an instructor he is responsible for the training program in different private companies like Tragsa (Tragsatec Group) or Prointec (Indra Group).

PROGRAM

INSTALL QGIS

Introduction
Download and install
GUI Graphical User Interface of QGIS
Plugins
Practical exercise 1: Installation of QGIS, plugins installation

QGIS DEVELOPMENT

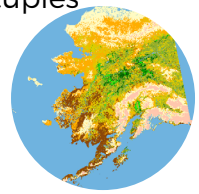
Two ways to develop
Using Model Builder
Using Python
Model Builder.
What is it?
How you can work with it?
Python
What is it?
How you can use it?
Through console
Through IDE
Practical exercise 2: Get familiar with Model Builder and Python and see how you can use them with QGIS.

MODEL BUILDER

Develop a chain workflow with Model Builder
Inputs
Chain geoprocesses
Run
Save/Load
Edit the model
Convert model to Python code
Practical exercise 3: Generate a geoprocessing model from scratch

PYTHON

Syntax
Tabs
Variables - what they are and how to declare them
Data types – numbers, strings, lists, tuples



Expressions
Import modules
Comments
Numerical and text (string) data
Operations with numerical data
Operations with text (string) data
Arrays, lists and tuples.
Conditional statements (if, else if, etc.)
Loops (for, while, etc.)
Functions
Orientated to objects
Practical exercise 4: Get familiar with Python programming language

WORKING WITH VECTOR DATA

Generate a geoprocessing vector model using model builder
First steps with pyQGIS using vector data
Access vector data
Perform queries on vector layers
Feature entity selection
Iterate through layers
Add, modify or delete
Symbolize
Script development via IDE
Practical exercise 5: Generate a model and a Python script for processing vector data (using Model Builder and pyQGIS).

WORKING WITH RASTER DATA

Raster data types
Generate a geoprocessing raster model using Model Builder
First steps with pyQGIS using raster data
Rendering
Work with one band raster
Work with multi-band raster#
Refresh
Queries
Script generation
Practical exercise 6: Generate a model and a Python script for processing raster data (using Model Builder and pyQGIS).

PYQT4

About PyQt4 API?
MapCanvas
Components
Qt Designer
Qt Assistant
Practical exercise 7: Accessibility exercises.

PLUGIN DEVELOPMENT

Necessary components
Use scripts from external sources
Plugins architecture
Plugin creation and development
Practical exercise 8: Develop a plugin using Plugin Builder

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