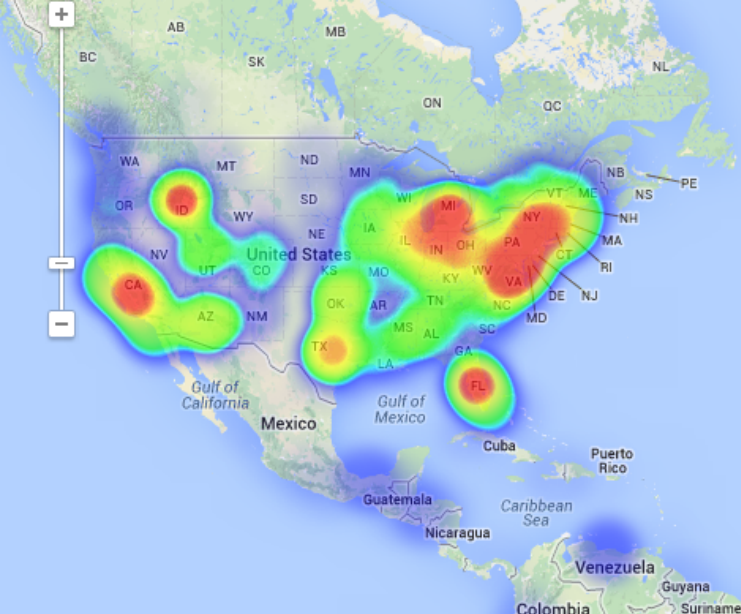


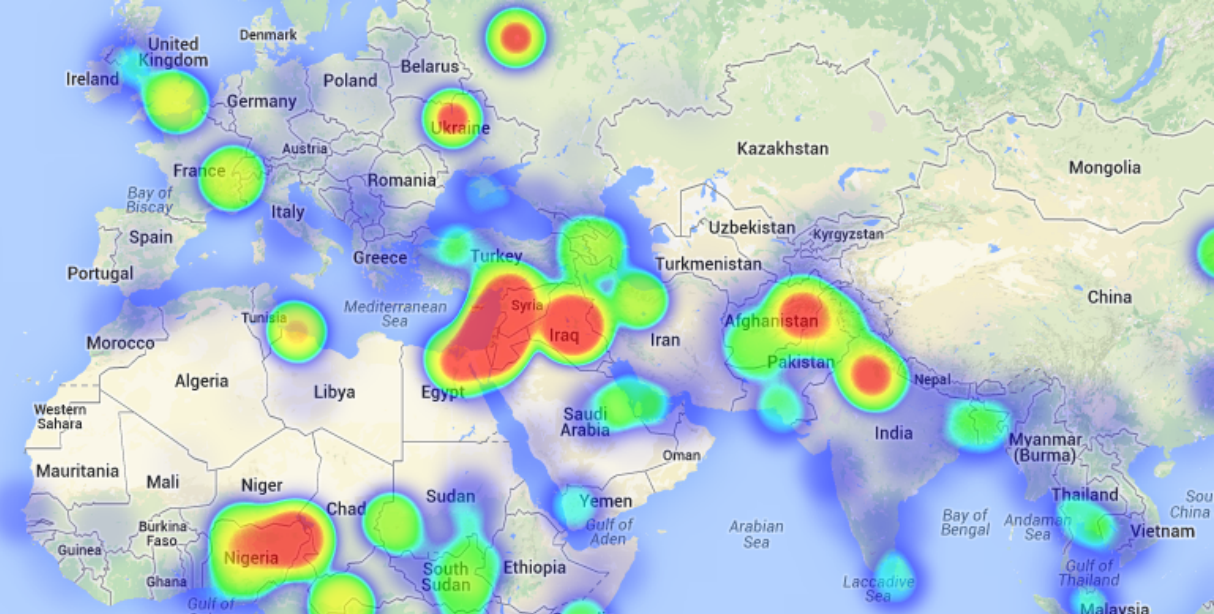
DEVELOPMENT OF WEB BASED GIS APPLICATIONS USING QGIS AND OPENGEO SUITE

ONLINE TRAINING





North Atlantic Ocean



COURSE



The course will introduce the student to the extensive OpenGeo Suite, a complex web mapping solution. The students will gain knowledge in the most important open source key tools like: QGIS, OpenGeosuite, GeoServer, PostGIS, GeoWEB and OpenLayers, tools that will easily allow the development of map viewers and different web applications. Mastering these techniques (developing web GIS applications that runs on web GIS servers), they will be able to share their work on the web, generating high quality mapping products, for a better performance and visibility.

The students will get familiar with the Management of Relational Databases Systems (RDBMS), the use of QGIS and other open source web mapping tools, that will allow the development of web GIS based applications and their distribution online without any need for paid subscriptions or licenses.

During this course, the students will get the chance to develop their own web GIS based application, will understand how a fully operational web GIS server works, will follow all the necessary steps that lead to the development of a web GIS based application, from local developing to web upload and management.

GOALS



- Provide an introduction to free access, open source suite of software, that can prove to be a valuable tool when it comes to GIS related projects development.
- Get familiar with different existent web mapping tools. Work practically, develop your own cartographic viewer and share it online.
- Teach through practical exercises, learn about all the difficulties you may encounter in the elaboration of web mapping GIS projects, find out about their solution.
- Develop a complete workflow. Start from the beginning with data collection, database incorporation, data editing, adopt a symbology that define how geographic features are represented on a map, create a web service and deploy your first cartographic viewer on the web. Share your work with the general public, get visibility and evaluate the impact of your work.
- Build a complete web GIS based application following all the steps described above.





METHODOLOGY

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 OpenGeo 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.





INTRODUCTION TO OPEN SOURCE SOFTWARE. DIFFERENCES BETWEEN COMMERCIAL SOFTWARE. HOW TO USE QGIS?

Evolution of Open Source Geographical Information Systems. Advantages and disadvantages. Future perspectives. What is an Open Source GIS software? Types of Open Source GIS software. Differences between commercial GIS software. Free access GIS software. How to install QGIS. Introduction to QGIS graphical interface. How to load data into QGIS, read and edit layer properties, how to use spatial projection systems, perform spatial analysis using QGIS tools, create symbologies, install QGIS plugins. Practical exercise 1: Develop a GIS project using QGIS.

WHAT IS WEB GIS?

What is WEB GIS? History, Future perspectives, Advantages and Disadvantages. Types of software and tools used in web development. Example of a WEB GIS project, applied in environmental management. Examples of web mapping applications. Practical exercise 2: Online web mapping platforms

OPENGEO SUITE. HOW TO USE IT TO CREATE YOUR OWN WEB APPLICATION?

What is OpenGeo Suite? Basic concepts about this geospatial platform. OpenGeo Suite components: Geoserver, PostGIS, GeoExplorer, GeoWebCache. Example of a project created with OpenGeo Suite. Practical exercise 3: How to install OpenGeo Suite?

INTRODUCTION TO RELATIONAL DATABASE MANAGEMENT SYSTEMS, POSTGRESQL AND POSTGIS

Different types of data that can be included in a database. Basic notions about the installation of PostgreSQL. How to manage PostGIS with OpenGeo Suite. Create and manage data using PostGIS. Handling PostGIS in OpenGeo Suite. Import and export shapefiles. Practical exercise 4: How to connect PostGIS with QGIS?

HOW SPATIAL DATA CAN BE ACCESSED? GEOSERVER, WMS, WCS AND WFS

What is Open GIS Consortium (OGC)? What is an IDE? Types of geoservices: Web Map Service (WMS), Web Coverage Service (WCS), Web Feature Service (WFS) and Web Processing Service (WPS). Characteristics. Install and visualize geoservices in QGIS. Create a Heatmap with GeoServer. Practical exercise 5: Create services in OpenGeo Suite

HOW TO CREATE A WEB MAP? GEOEXPLORER

Introduction to GeoExplorer. How to manage it from OpenGeo Suite. Basic concepts about cartographic rules applied in the development of map symbologies. Styles development (SLD). Edit layers and publish maps. Project design

DEVELOP A CARTOGRAPHIC VIEWER FOR ONLINE PURPOSES

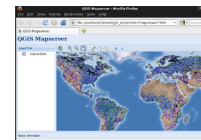
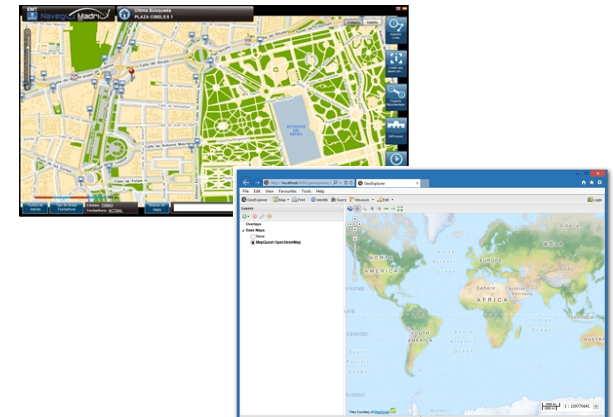
Adapt previous developed project for online upload and deployment. Different ways to publish your map on the web. Through a Server, a blog, etc. Practical exercise 6a: Get familiar with WEB mapping applications. Design and Develop a cartographic viewer. Examples. Practical exercise 6b: How to share your project using social networks? How to be a Geo-Community Manager

DEVELOPMENT OF A WEB GIS BASED PROJECT

Realize a project using skills and knowledge gained during this course

GENERATE YOUR OWN WEB GIS BASED APPLICATION AND CUSTOMIZE A WEB GIS SERVER

Develop your own WEB GIS based application and configure a WEB GIS Server according to your needs and spatial data





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