ROGRAMMING USING GOOGLE MAPS API

ONLINE TRAINING
El curso plantea abarcar muchos aspectos del potencial de la API de Google Maps para que el alumno pueda desarrollar mapas Web dinámicos.

Se formará al alumno desde la base de la programación de la API, pasando por la implantación de diferentes tipos de herramientas, la inclusión de diferentes formatos de datos provenientes de distintas fuentes, hasta llegar a crear eventos y trabajar con la geocodificación y el servicio Google Elevation.

**COURSE**

**GOALS**

- Get familiar with Google Maps API and with the features and functionalities that can help you create a cartographic viewer.
- Demonstrate which are the essential Google Maps API tools and how they work, in order to learn how to carry out practical applications and execute the necessary actions in different projects.
- Introduce and teach the student in the programming language used by Google API.
- Work with services and events associated with the API, in order to allow the improvement of web mapping functionalities and capabilities.
- Practice your new developed skills through practical exercises and examples provided by our instructors.
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.

**Methodology**

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 Google Maps API 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 PROGRAMMING USING GOOGLE MAPS API

Google Maps capabilities
Free for non-commercial use
Google Maps Premier license
Basic Map-Code
Google Maps API versions and releases
Browsers compatibility
Google Maps API documentation

BASIC CONCEPTS OF GOOGLE MAPS API

How to create a map?
Importing data into Google Maps API
Create Google Maps Container
Customize map options and create a new map object (using Map Object)
Load the map with an initialization function
Create custom controls for the map
GUI, Default Graphical User Interface/ The Default UI
Add custom controls to the map
Configure Controls
Control positioning
• Zoom level control
• Navigation controller (Pan tool)
• Toggle between map types (MapTypeControl)
• Guide map control (OverviewMapControl)
• Scale control (ScaleControl)
• StreetView control (StreetViewControl)
Adding custom map overlays
Remove an overlay
Markers. Putting interactive markers in Google Maps API
Simple bookmark icons
Complex icons
Google Maps icon collection
Info Windows for markers
InfoWindow class
Add various shapes to your map: Polylines and Polygons, Circles, Rectangles
Ground Overlay option
Layers. Use map layers – general overview
KML Layers – Display and manage KML layers
KML and GeoRSS Layers
Google Fusion Tables (FusionTableLayer object), Fusion Table Queries
Creating a heat map using Fusion Tables
Traffic Layer
Bicycling layer

MAP EVENTS

What are the events?
Manipulate the events
Handling Events. Do I have to respond to each event?
Types of events
User interface events (UI Events)
Model-View-Controller Events (MVC Events)
Registering Events
Accessing arguments in UI events
Removing Event Listeners

GOOGLE MAPS GEOCODING API

What is geocoding?
• The geocoding process
• The GeocodeRequest object
• The Geocoder object
• The GeocoderResults object
• The GeocoderAddressComponent object
• The GeocoderGeometry object
• The GeocoderLocationType object
• Status Codes

Reverse Geocoding. Results

Google Elevation services
Introduction to Google Maps Elevation service
Elevation service processes
Elevation Requests
The ElevationService object
The ElevationResult object
The ElevationStatus object
Example