Google API Maps

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As internet users and as student's that deal with geospatial information you have probably noticed lots of internet page's with various maps that are inegrated in web page itself. One of the most known tool for such integration of maps is Google API Maps it gives his users an open source of Google maps database witch will be the very subject of this article.

First before we begin i'll tell You a few words in general about the API itself. API in short is Application programing inerface. API is a code that a program or a computer system uses to display its possibilities in some interface. API displays data in graphical and text form that program gives and that data is user friendly in difference to some other programs that don't have API. They give all their data in a raw form of a text file that are not as useful as APIs. There are various design models for APIs for example one interesting model is interpreter emulator of ECMAScript/JavaScript expressions. What would that actualy mean? That means that such API enables a programer to change functions of a programe without having to change the original program code.

An API is often a part of a software package. There are two general API publishing policies:

1) Some companies like Sony protect information on their APIs from the general public. This enabled Sony to control who writes the code for PlayStation games and maximize their profit.

2) Other companies like Microsoft make their APIs freely available and public so that software and it's APIs will be written for the Microsoft platform doing that Microsoft ensures that people will use their product. The same thing did Google with its Google API Maps.

There are several examples of APIs we will name only few:

1) DirectX for Microsoft Windows
2) Java Platform, Enterprise Edition
3) Google API Maps

These are some examples. In this article we'll write about application Goole API Maps product of Google Inc. Company. The Appliance of Google API Maps is virtually unlimited as in general sense as in geodesy and geoinformatical sense too. For demonstration in short introduction of Google API Maps we'll make a simple API map in a several steps:

1) Before we begin anything, we

Script 1.
```
<script src="http://maps.google.com
mapsmp;key=abcdefg"
        type="text/javascript">
</script>
```

Script 2.
```
<script type="text/javascript">
function load() {
if (GBrowserIsCompatible()){
var map = new GMap2(document.getElementById("map"));
map.setCenter(new GLatLng(Lat,Long), Zoom);
</script>
```

Script 3.
```
map.addControl(new GSmallMapControl());
map.addControl(new GMapTypeControl());
```

Script 4.
```
var marker = new GMarker(center, {draggable: true});
GEvent.addListener(marker, "dragstart", function() {
map.closeInfoWindow();});
map.addOverlay(marker);
```

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have to insure web space on a server such as geodet.geof.hr if you are a student or an employ of Faculty of Geodesy in Zagreb. We must also have some knowledge in HTML and JAVA code programming.

2) Once we have ensured our space on a server we can go to the next step and open e-mail on Gmail (also a service of Google) with that mail google ties its API key. Visit the page http://www.google.com/apis/maps/ and sign up for your API key that will connect API Map with your web page. In my example that is http://www.geof.hr/~irados/

3) Once we have acquired the Google API key, we also receive a begging JAVA code. Once we have the code we have to implement it into our internet page and we can begin defining the code according to our needs. By adding various functions and markers we shape our API Map and give it some function and purpose (Script 1.).

4) First we define where we like the center of our map would be. On my example the center is the City Zagreb (Script 2.).

5) Adding the tools for zooming and panning (Script 3.).

6) In this moment we have set up all the general (basic) tools and now we can give our map some purpose. Adding the geocoded (placed on the exact certain position on the map) markers on the map. Script 4. is an example of a marker that is placed in the middle of a map and can be moved around the map.

On my example http://www.geof.hr/~irados/ You can see three GPS geodynamical point on the area of Kašina, Zagreb. These points were observed in the year 2006 during the campaign of geodetic geodynamical study City of Zagreb. Short description of the point with its picture is on the Picture 1.

You can also see and use one of the markers in the middle of window that can be moved and as you move the marker you can notice that a little cloud appears above it. In that cloud the geographical latitude and longitude is being written in DEG form in WGS84 system as you move it around.

Someone said that a picture is

worth a thousand words, but how much words is worth an interactive map that can give back certain information? That's what Google API Map is all about. If we could place on a internet page all the geodetic points starting from the points of first order that are on the state level to those little polygonal points. Some points even the users could add themselves and with every point there would be a picture. Next time going out surveying and finding our geodetic points wouldn't be such a problem because before we would go out with the instruments we could checked the position of the point as well as its picture on the internet page with the help of Google API Map application.

References

• URL-1: http://www.google.com/apis/maps/documentation/
• URL-2:http://en.wikipedia.org/wiki/API
• URL-3:http://www.econym.demon.co.uk/googlemaps/ ◆

Figure 1. Description of the point with its picture