**Proprietary mapping APIs**

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# Module: (IS3S665) GIS and the Spatial Web

**Website URL:**

<https://ces-web2.southwales.ac.uk/students/30047616/GIS/website001.html>

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1. **Site Introduction**

My website includes four google maps(Barcelona, Barcelona2.0, Spain\_Polygon, Madrid Kml) and two bing maps(BCN Bing and bing GeoJson). Each map is contained in a card, functioning as a link to access the map and its code. Additionally, each card provides a brief description of the map’s features, as well on the map’s page.

All my maps have started by following tutorial from the module then adapted to different styles, location, and icons.

1. **Additional work and features:**

**Google Maps:**

* **Barcelona Map:** Features polylines, info boxes, polygons, event listeners, and markers. It includes event listeners to span the map back to centre after 5 seconds of being moved, and its polyline calculates the distance between the Airport and the Sagrada Familia, displaying this below the map.

Research was undertaken to calculate distances with a polyline at: <https://cloud.google.com/blog/products/maps-platform/how-calculate-distances-map-maps-javascript-api>

I learned how to use the event listeners to span the map back to centre using the following documentation: <https://developers.google.com/maps/documentation/javascript/examples/event-simple>

Attempt was also made to try show Driving distances between the airport and the Sagrada Familia, learned on the same website, though it wasn’t possible due to a failed request caused by the API key not having permission to perform such request.

The following code was used:

let directionsService = new google.maps.DirectionsService();

let directionsRenderer = new google.maps.DirectionsRenderer();

directionsRenderer.setMap(theMap); // Existing map object displays directions

// Create route from existing points used for markers

const route = {

origin: loc02,

destination: loc,

travelMode: 'DRIVING'

}

directionsService.route(route,

function (response, status) { // anonymous function to capture directions

console.log('Directions status:', status);

if (status !== 'OK') {

window.alert('Directions request failed due to ' + status);

return;

} else {

directionsRenderer.setDirections(response); // Add route to the map

var directionsData = response.routes[0].legs[0]; // Get data about the mapped route

if (!directionsData) {

window.alert('Directions request failed');

return;

}

else {

document.getElementById('msg').innerHTML += " Driving distance is " + directionsData.distance.text + " (" + directionsData.duration.text + ").";

}

}

});

* **Barcelona 2.0:** Modified styling and incorporates event listeners to recentre the map to Barcelona after being moved for 3 seconds.
* **Spain Polygon:** Features event listeners and bounds to limit the google map to just Spain and displays a Google map with a polygon between Barcelona, Malaga, and Ibiza Airport, with changes to some styles.
* **KML Maps:** Research was undertaken to find appropriate KML files of Spain, in the Madrid KML link it features a google map showing the bicycle parking areas of the city. This was read from an external KML file found on a Spanish government website called datos.gob.es at <https://datos.gob.es/en/sector/medio-ambiente>.

Research was also undertaken to find appropriate KML files of UK, featuring a map of the postcodes in Snowdonia. retrieved from: <https://www.doogal.co.uk/NationalParks?park=W18000003>

**Bing Maps:**

* **BCN Bing:** This Bing map features pushpins of the Airport and the Sagrada Familia with a custom style’s polyline in between them. This map also features infoboxes that appear in the centre of the map when a pushpin is clicked with the help of events handlers.
* **Bing GeoJson:** The Spain GeoJson map was created using the custom made GeoJson online and then parsed into the Bing Api, showing some of the major aiports in Spain as well as a polygon of Portugal.

Icons used on maps were handpicked and download from a free image source at <https://www.flaticon.com/>

1. **Links:**

* Website: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/website001.html>
* Barcelona: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/BCN.html>
* Barcelona 2.0: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/BCN_Mod.html>
* Spain\_Polygon: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/ESP.html>
* Kml maps: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/Madrid.html>
* BCN Bing: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/bing.html>
* Bing GeoJson: <https://ces-web2.southwales.ac.uk/students/30047616/GIS/SpainGeo.html>

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