

HERE XYZ Overview

Maksim Makarov

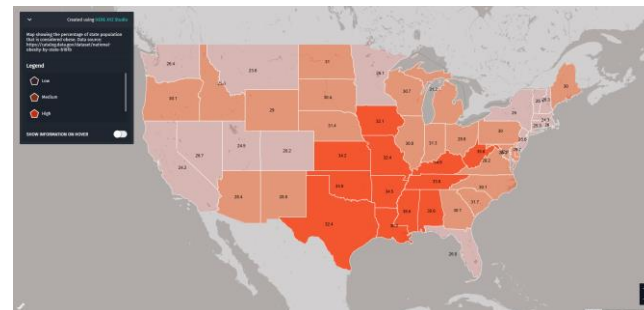
Community Analyst at HERE Technologies

Location provides critical context to transactional, user, public and social data



Location data lives in spreadsheets and databases and we cannot make sense of it.

```
National_Obesity_By_State - Notepad
File Edit Format View Help
[{"type": "FeatureCollection", "features": [{"type": "Feature", "properties": {"OBJECTID": 1, "NAME": "Texas", "Obesity": 32.4, "Shape_Area": 677232922.1282, "Shape_Length": 1540832.18693326}, "geometry": {"type": "Polygon", "coordinates": [[[106.62454789568, 31.9140391520155], [106.63588978934, 31.8715191442955], [106.581353774443, 31.8139111373897], [106.528251761072, 31.781531354708], [106.484651748808, 31.7478141315605], [106.467651746068, 31.7596131342511], [106.417949735133, 31.7520141346114], [106.370148722108, 31.7107151302357], [106.352620715243, 31.686951549046], [106.303545701949, 31.6204181181917], [106.280820691268, 31.5620671095253], [106.23681368116, 31.513811038815], [106.175648663943, 31.4562840972974], [106.080267639903, 31.3987070915095], [106.004935621149, 31.3092463093511], [105.996418998996, 31.3878452228108], [105.953952610089, 31.3647540912438], [105.938461604625, 31.3187400847246], [105.869362587492, 31.288639082187], [105.794395565944, 31.2022450708686], [105.773266559786, 31.1669020664729], [105.709500543313, 31.1363800639399], [105.627358523011, 31.098500611616], [105.57955109432, 31.0354010524065], [105.557439502169, 31.09902340456592], [105.48803648438, 31.0432830401014], [105.39961846103, 31.0889460351713], [105.394251458588, 31.08529840292521], [105.314872438688, 31.0169660264266], [105.218669416423, 31.08015720273622], [105.160162400912, 31.7570640218894], [105.098291385445, 31.7189190178654], [105.06234375293, 31.6863080125165], [105.001249361254, 31.6725880140342], [104.98076324511, 31.6288170257946], [104.972080351686, 31.6102650046924], [104.924805340706, 31.6048370053301], [104.88935328889, 31.635148995232], [104.869881320423, 31.4586499821749], [104.859530314772, 31.3904179709826], [104.82432330557, 31.3704709690435], [104.761643287909, 31.3011529590247], [104.740457281606, 31.2594589526199], [104.702797270642, 31.2117409458761], [104.692103262664, 31.1073089280462], [104.704007261561, 31.0242149132017], [104.685488255167, 31.9899479077834], [104.672336248881, 29.9111168951222], [104.61904823325, 29.8444488849177], [104.56569721796, 29.7704668741528], [104.539770207194, 29.6760788584527], [104.452310184941, 29.6036648486089], [104.4371184163285, 29.5430678405279], [104.30882148562, 29.5243418392263], [104.229080128143, 29.4810548346665], [104.181222115281, 29.4262698263596], [104.143701104755, 29.3832828206519], [104.055605082121, 29.3309148140818], [103.975244062588, 29.2960218104125], [103.85690203484, 29.28185681257], [103.793882030731, 29.259243204049], [103.789043018642, 29.257506809994], [103.724752001336, 29.1914748002956], [103.660211985317, 29.1709387987612], [103.592368969093, 29.1502647972351], [103.524621952427, 29.1210027946951], [103.463204935725, 29.10027946951]]]]]}]
```



Far too much time and resources are spent on tasks such as organizing, uploading, displaying and serving the data.

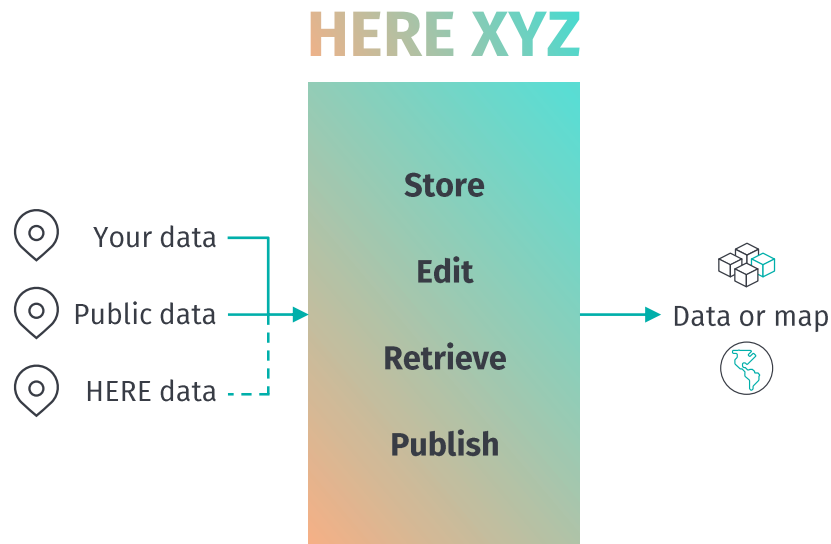
Putting data on a map plus combining with other data sets helps in extracting insights, but map making is limited to those who have expertise and access to complex and expensive tools

Introducing HERE XYZ

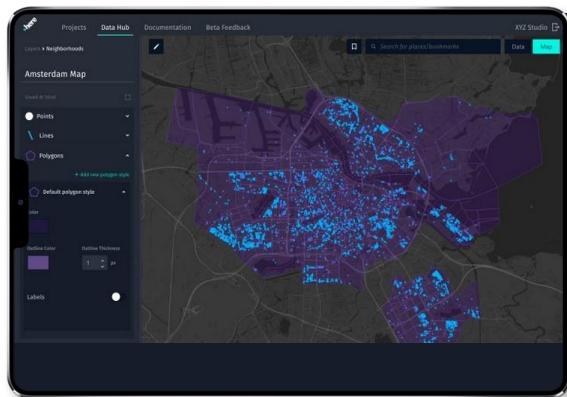
A cloud-based, real-time location data management service to manage geospatial data and create web maps

HERE XYZ democratizes location data management enabling users with different skill levels to leverage location data and derive visual insights.

- Upload owned and publicly available geospatial data to the XYZ cloud storage, perform real-time data editing, data retrieval, and publishing.
- Create custom web maps from geospatial data leveraging tools for any level of technical ability - from the **XYZ Studio** which is an intuitive web application requiring no coding to the **HERE Command Line Interface** and **XYZ Hub API**.

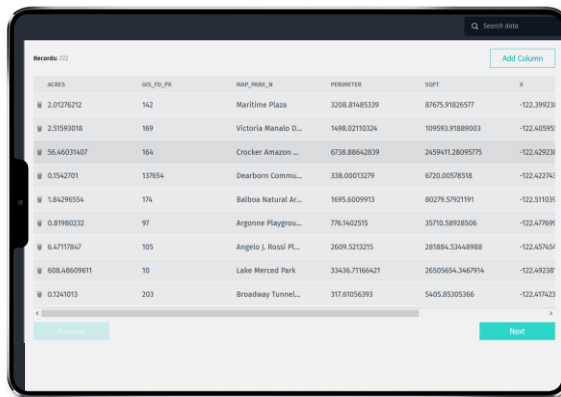


What can you do with XYZ?



1. Create and publish web maps

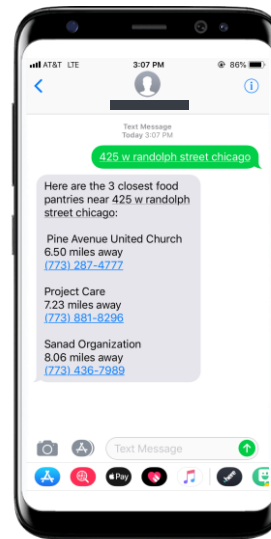
- Layer data sets
- Create an interactive map
- Bring live data



2. Manage your geospatial data

- Store
- Edit
- Retrieve
- Publish

+ HERE Location APIs



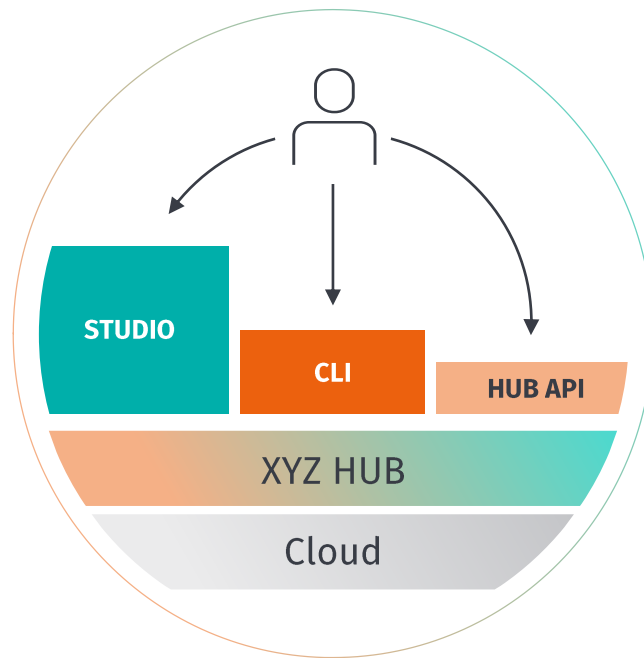
3. Create location-aware apps leveraging your data

Three ways to use XYZ

Studio, Command Line Interface and RESTful API

Geospatial database in the cloud

- Get geospatial data in and out, using well-defined methods
- Use your preferred tools to upload, download and render data (as long as they speak GeoJSON)
- Depending on technical ability use
 - **XYZ Studio** – for anyone
 - **HERE CLI** – for cartographers and those who can work with command line
 - **RESTful API** – for developers
- Use HERE tools, or use the APIs to get to data in XYZ Spaces



Adding data on a map



9



Real-time Flight Tracker Map



HERE XYZ

Feature deep dive

HERE CLI & XYZ Hub API –
for cartographers and developers

Build advanced maps and manage data more efficiently



HERE Command Line Interface

HERE CLI enables efficient interaction with HERE XYZ Hub to create, manage, transform and share data sets.



XYZ Hub API

Perform granular geospatial functions with the easy-to-use RESTful API giving you control and flexibility. XYZ Hub API can be called directly from an application using our public REST API.

HERE CLI

Command line cartography for efficient interaction with XYZ API to create, manage and transform data sets

Open Source Node.js app, developed on Github.
5 minute install

Upload and convert more types of data

- GeoJSON
- GeoJSONL
- Convert Shapefiles of any projection
- Advanced CSV parsing

Upload more data, faster

- Hundreds of MB to hundreds of GB
- Interact, stream data
- Pipe data from other Unix tools
(mapshaper, ogr2ogr)

```
$ here xyz upload ejrCCgpw -f
https://raw.githubusercontent.com/Devon-County-Council/property-
locations/master/DCC_Property_Assets-201909.csv
? Select property which should be used for Latitude GEO_Y : 50.71943274
new Latitude field selected - GEO_Y
? Select property which should be used for Longitude GEO_X : -3.367465758
new Longitude field selected - GEO_X
uploaded 20.00%
uploaded 40.00%
uploaded 60.00%
uploaded 80.00%
uploaded 100.00%
data upload to xyzspace 'ejrCCgpw' completed
$ here xyz config ejrCCgpw --stats
===== SPACE MAIN STATS INFO =====
property      value                                     estimated
-----
BBox          -7.556448519,49.76618581,-2.989070593,51.22846442 false
Byte Size     1163264                                true
Feature Count 880                                    false
Geometry Types Point                             true

$ here xyz show ejrCCgpw -v
```


HERE XYZ API

RESTful API giving you control and flexibility

Well-defined methods for interacting with XYZ Spaces using REST and GeoJSON

- Read, write, update, and delete features (points, lines, polygons)
- Read and write information about XYZ spaces (statistics, metadata)
- Vector tiles, bbox, iterate, search...
- All of our tools (or yours!) use this same API
- Also a way to use “database connectors” to pull data into and through XYZ



Explore using Swagger

<https://xyz.api.here.com/hub/static/swagger/#>

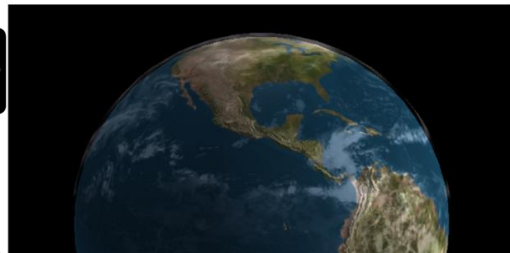
Use your preferred rendering tools

Flexibility to use your preferred rendering tool. Choose from popular rendering tools including Tangram, Leaflet, three.js or use the native HERE renderer. We provide tutorials to help you get started.

3. View the points in three.js

If we want to see the points on a 3D map, we can't use Leaflet or Tangram. So let's try another frontend library, called three.js.

Here is a premade spinny globe in three.js.



4. View the tiled data in Tangram

The XYZ API supports tiling vector data, which lets us only load the data in chunks so that we only get the data that we need to display at that moment. To use this tiled endpoint, we need a map client that supports tiling. We'll use [Tangram](#), an open-source WebGL based map viewer.

First, we'll create a boilerplate Tangram map, just like [we did with Leaflet](#). The HTML for our map looks like this. Notice that we are creating a Leaflet map in much the same way as we did previously, but we are adding a Tangram layer to it.

Note: This code snippet includes a bunch of CSS that we will use later. We won't explain most of it in this tutorial. If you're curious about CSS, there are tons of resources online to learn more.

```
<!doctype html>
<html lang="en-us">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0">
    <title>Amsterdam Solar Energy</title>
    <link rel="stylesheet" href="https://unpkg.com/leaflet@1.3.3/dist/leaflet.css" />
    <link rel="stylesheet" href="https://unpkg.com/tangram-leaflet@1.3.3/dist/leaflet.css" />
```

6. View the data in a Leaflet map

Next, we will view some of this data in Leaflet. Leaflet is a simple mapping library that can draw simple points, lines, and polygons on top of a raster basemap.

Below we provide the code for a [basic Leaflet template](#) which gives us a raster "slippy" map, with nothing on it. You can either download the file [index-step1.html](#) and rename it to [index.html](#), or you can create a new file called [index.html](#) in the text editing program of your choice, and copy-and-paste the code below.

Once you have your [index.html](#) file ready, let's see what it looks like. To view this code in your browser, you can quickly run a webserver using `python -m SimpleHTTPServer`. Or you could upload it to your own personal webpage, or use something like [S3](#) or [blockbuilder.org](#) to view this simple page.

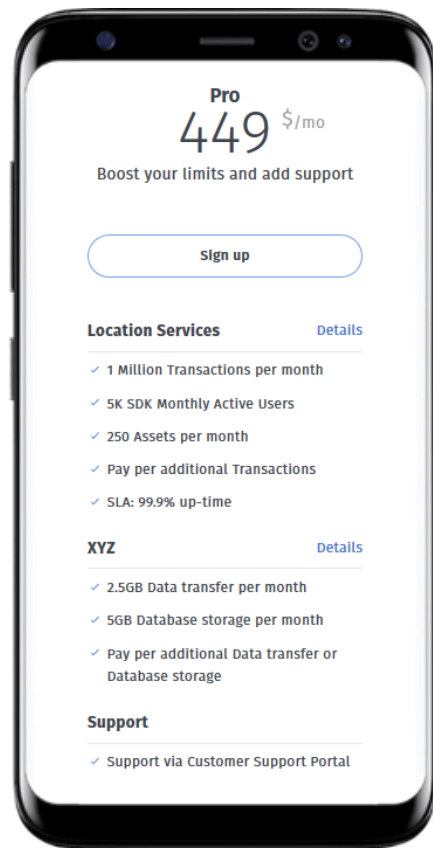
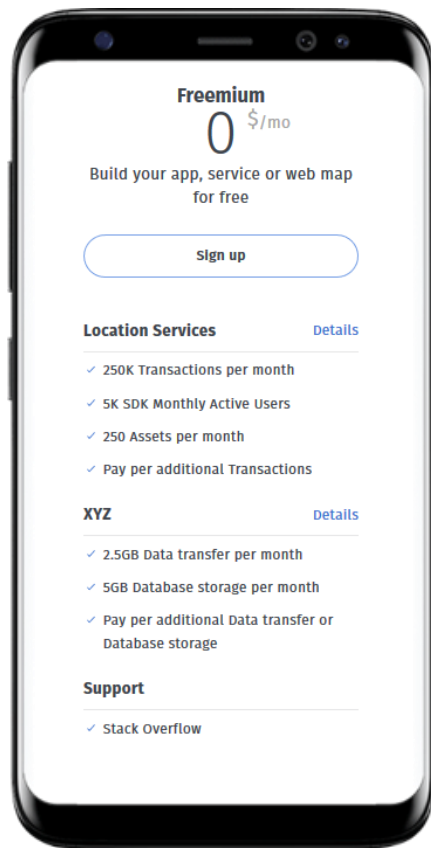
Note: This code snippet includes a bunch of CSS that we will use later. We won't explain most of it in this tutorial. If you're curious about CSS, there are tons of resources online to learn more.

```
<!doctype html>
<html lang="en-us">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
```

HERE XYZ

Pricing

Freemium comes with HERE XYZ



Get started...

Try out XYZ for free!

Visit <https://www.here.com/product/here-xyz>



Workshop link: bit.ly/33M0n6V



Maksim Makarov

Email: maksim.makarov@here.com