

Web Mapping & Analysis

Introduction

Dani Arribas-Bel

Today

- Anatomy of the Web Map
- Overview
- Logistics

Anatomy of the Web Map

More





An ESRC Data Investment

CDRC

Data

Maps

Indicators
& Stories

NRDF

CDRC Maps

Mapping selected datasets from
CDRC Data, part of the Consumer
Data Research Centre.

DATA CHOOSER

Geodem Indicators Metrics

Select a map:

Index of Multiple Deprivation 2019

MAP OPTIONS

Layers: Land Labels

Overlays: Pin Clear

Tip: Try dropping KML or
GeoJSON files onto map.

Postcode: Go

CENTRES & CATCHMENTS

JUMP TO CITY

Aberdeen Birmingham Brighton
Bristol Cardiff Edinburgh Glasgow
Leeds Liverpool London
Manchester Newcastle Plymouth

Tweet

Important note: Classifications are an
average across the local area, rather than for
individual houses, therefore the colour coding
on a building is not necessarily indicative of
that building.

[About/Attribution](#)

INDEX OF MULTIPLE DEPRIVATION 2019

2010

2015

2019

Value

Change

Liverpool

Kenhead

Sefton
Park

Wavertree

MAP KEY

Index of Multiple Deprivation 2019

The Indices of Deprivation for England
in 2019 - showing the overall rank (out
of 32844), split into deciles.

[Download these data](#)

Most deprived decile

2nd

3rd

4th

5th

6th

7th

8th

9th

Least deprived decile

Data missing

Data not available

AREA INFORMATION

6th

Chiltern 004D.

ID: E01017793

Decile
6

Rank
18775

The Indices of Deprivation
for 2019 were calculated by
the OCSI on behalf of the
UK Government. The data

Building blocks of a web map

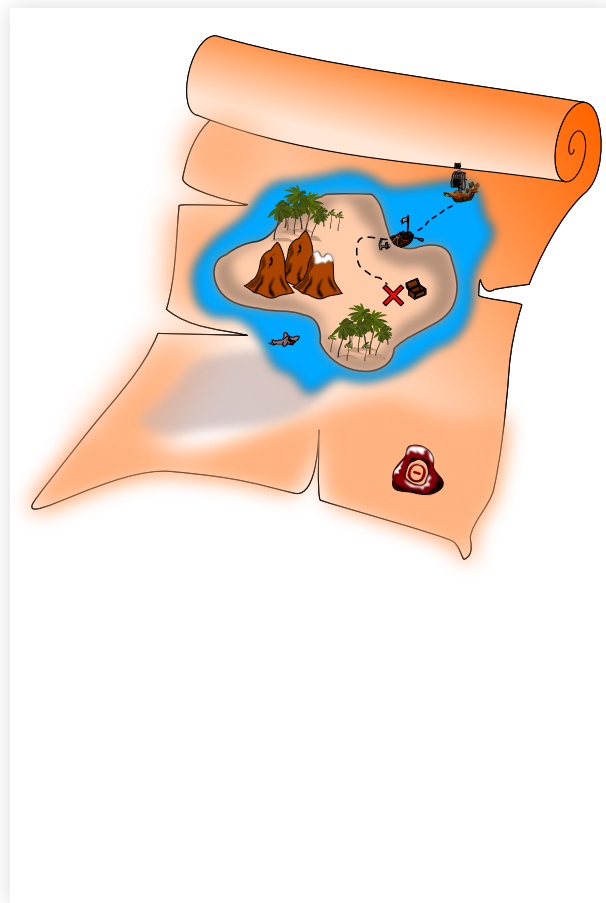
- (Geo-)Data
- Hardware
- Software
- (Effective and beautiful) Design

(Geo-)Data

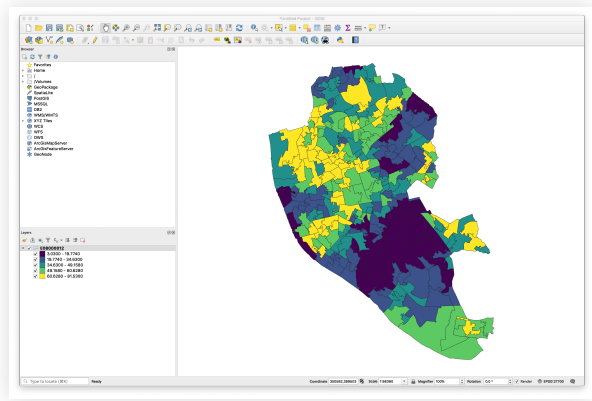
“Data graphics visually display measured quantities by means of the combined use of points, lines, a coordinate system, numbers, symbols, words, shading, and color”

The Visual Display of Quantitative Information. Edward R. Tufte

Hardware



Software

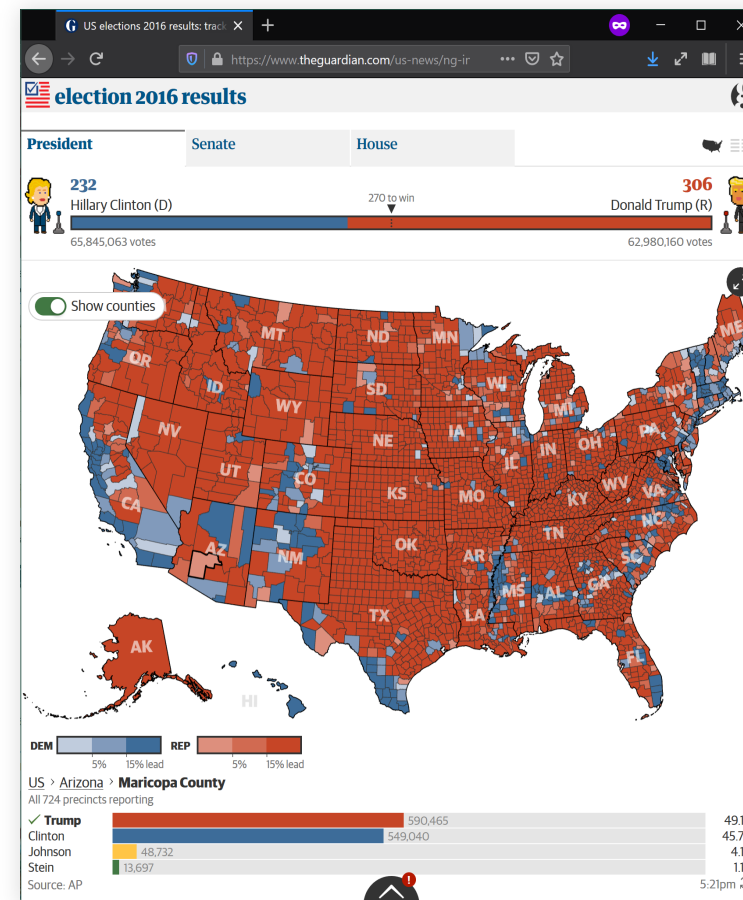


```
alpha-shapes (1-pde/alpha-shapes) - 0.0.0
Computation of alpha shape algorithms in 2-D based on original implementation
by Tin Kittel (@tkittl) available at:
https://github.com/tkittl/alpha-shapes
Author(s):
Dami Arribas-Bel daniel.arribas.bel@gmail.com

11 #!python
12 from math import sqrt
13 HAS_ITT = True
14 except ImportError:
15     from warnings import warn
16     def _warn_if_not_installed(*args):
17         if function is not None:
18             return function(*original_args, **original_kwargs)
19         return wrapped
20     def partial_inner(func):
21         return partial_inner
22     HAS_ITT = False
23     import numpy as np
24     import numpy.linalg as nplinalg
25     EPS = np.finfo(float).eps
26     __all__ = ['alpha_shape', 'alpha_shape_auto']
27
28 def nb_dist(x, y):
29     """
30     numpy implementation of distance between points x and y
31     """
32     Arguments
33     -----
34     x : ndarray
35         Coordinates of point x
36     y : ndarray
37         Coordinates of point y
38     Returns
39     -----
40     dist : float
41         distance between x and y
42     Example
43     -----
44     >>> x = np.array([0, 0])
45     >>> y = np.array([1, 1])
46     >>> dist = nb_dist(x, y)
47     >>> dist
48     1.4142135623730951
49
50 if __name__ == '__main__':
51     alpha_shapes.py
```

url

Design



url

Overview

Content

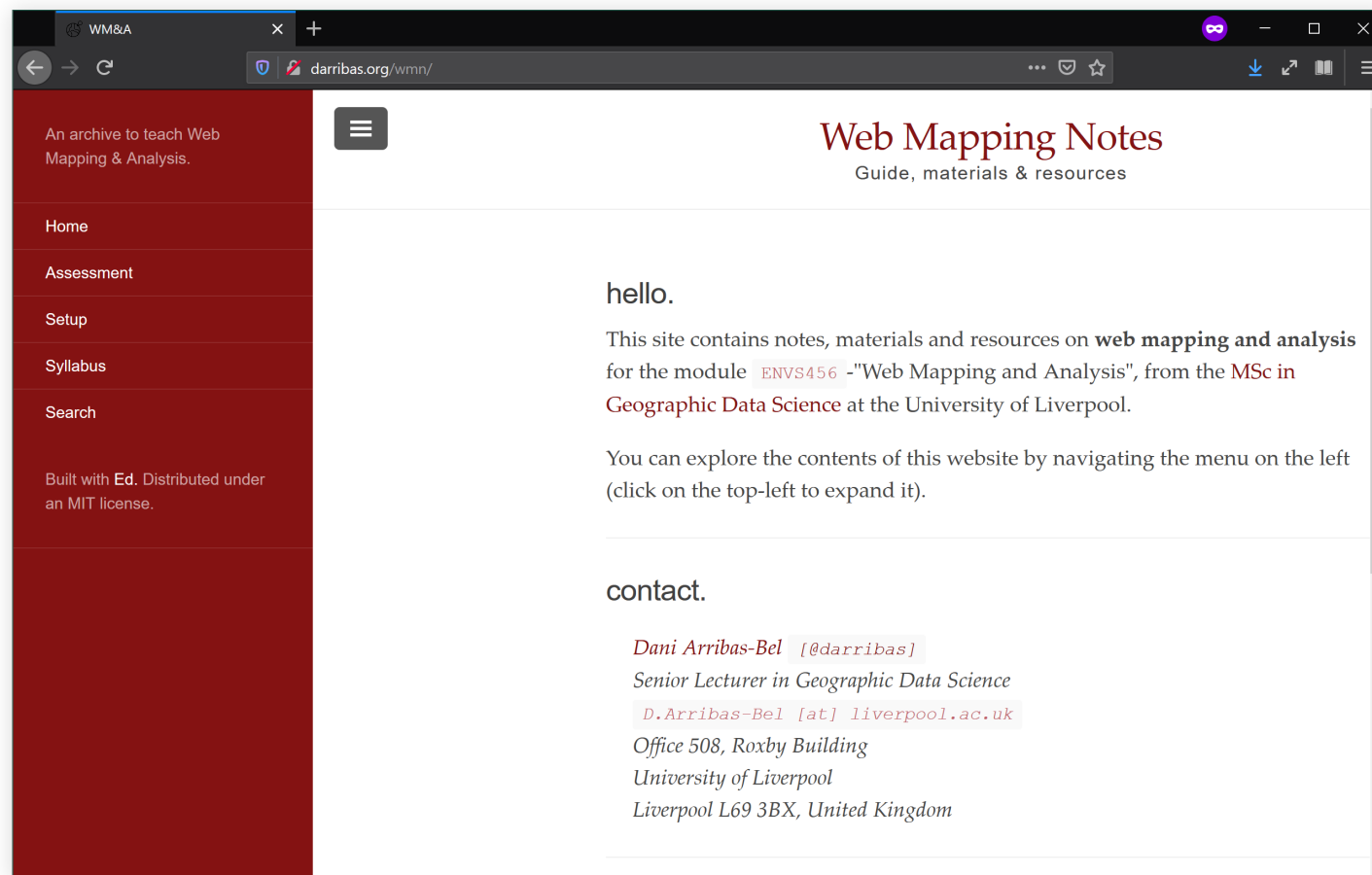
- **W1** Introduction & Context
- **W2 - 4:** Data Backends
- **W5:** Assignment I
- **W6 - 8:** Frontend Topics
- **W9:** Dashboards
- **W10:** Technology Gallery

Assessment

- Two pieces of coursework (50%/50%)
- *Equivalent* to 2,500 words each
- Due on W-6 and W-11
- Description in lectures + lab clinics

Logistics

Website



darribas.org/wmn

Lecture/Labs

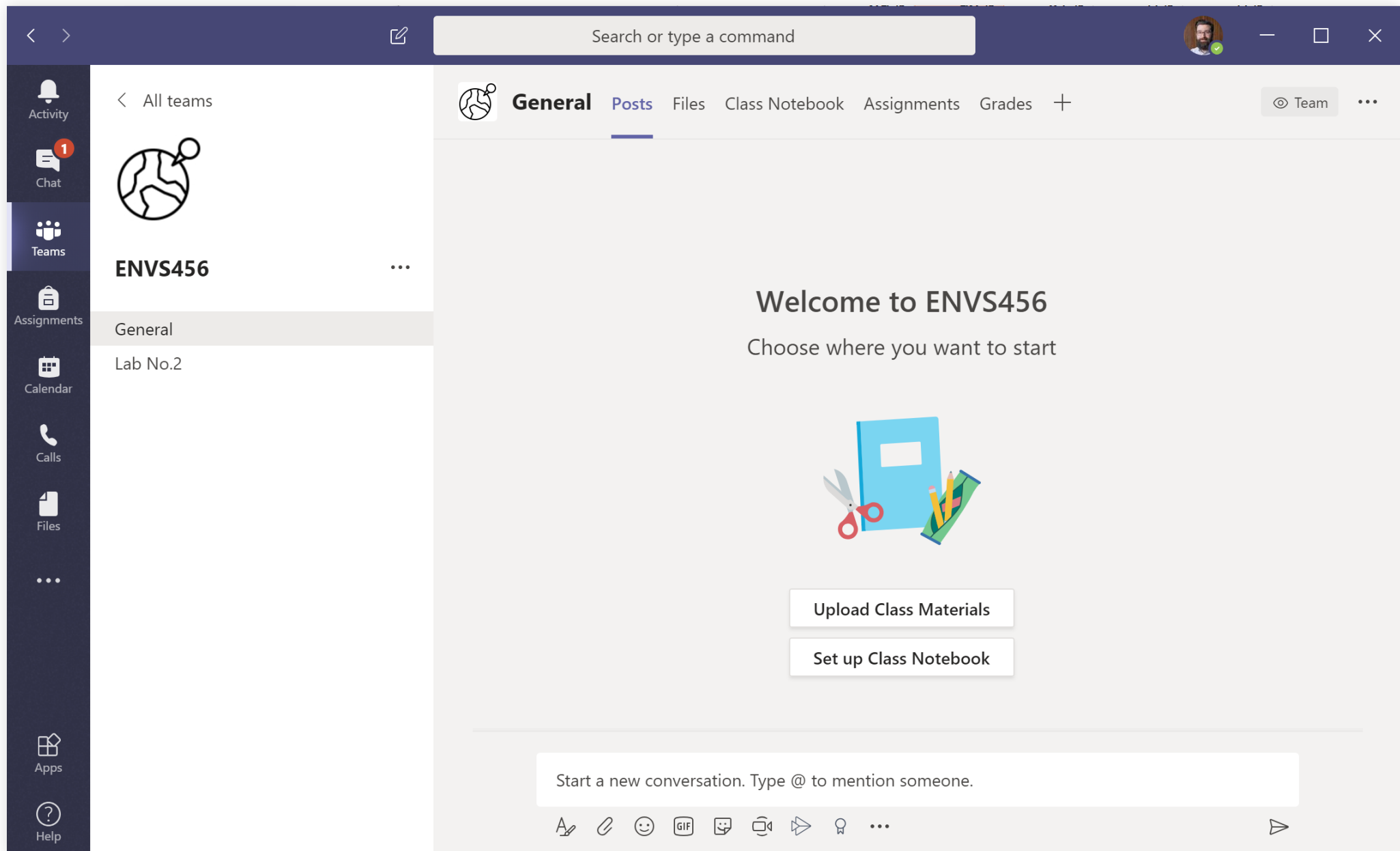
Lectures: *Fridays* 1pm-2pm @Teams

- Live streams + video archive
- Underlying concepts + Context

Labs: *Fridays* 3pm-5pm @Teams

- Hands on
- Interactive

Teams



Homework

- Bring at least one example of web mapping that you find compelling
- Contribute the link to Teams



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