Weekly Challenge

Solve the challenge, share your solution and summit the ranks of our Community!

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IDEAS WANTED

We're actively looking for ideas on how to improve Weekly Challenges and would love to hear what you think!

SUBMIT FEEDBACK

Weekly Challenge

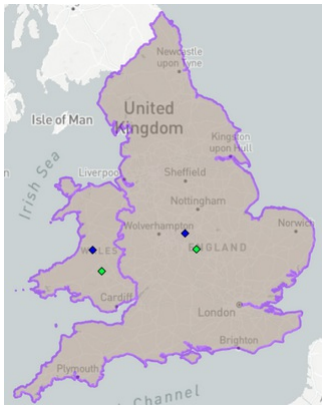
Challenge #269: Population DenCities

AYXAcademy
Alteryx

A solution to last week's challenge can be found here.

This week's challenge was submitted by @BeginnerMindset - Thank you for your submission!

When we're building spatial models or performing geospatial analysis, we often need to work with centroids; in general terms, this can be defined as the centre of mass for the polygon assuming uniform density. In other words, it's just "a dot in the middle" of whatever unit of geography we are using. However, it is usually important that we use a population-weighted centroid, which might be quite different. We're also interested in the demographics (eg. age, life-stage, affluence) - we want to know "who lives where" and ultimately "where do our target customers live?"



This is a three part challenge:
1. Map the (unweighted) centroids of each country in the UK (Beginner)
2. Map the population-weighted centroids for England and Wales. How far away are they from the unweighted centroids (in miles) and which cardinal direction? (Intermediate)
3. Investigate how the Over 65s are spread across England and Wales. (Advanced)
   a) First calculate the percent of Over 65s within each Local Authority (LA).
   b) Create a thematic map to pick out the patterns. Modify the settings (colours, bands, borders) to paint a clearer picture. Include a title and a footer for the ONS copyrights.
   c) How does the proportion of Over 65s correlate with population density. Create a scatterplot and calculate the Pearson and Spearman correlations. Is there a strong relationship? Is it linear?

Note: all the data is from the ONS (Office for National Statistics) and is released under the terms of an Open Government License, so it is vital to include any relevant copyright statements if reproducing any maps or analysis that utilise this data.
See full details here: https://www.ons.gov.uk/methodology/geography/licences

challenge_269_start_file.yxzp

challenge_269_solution.yxzp

Basic | Data Analysis | Difficult | Intermediate | Preparation | Spatial

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patrick_digan
17 - Castor

I've got the beginner and advanced so far.

Spoiler

challenge_269_start_file.yxmd

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Spoiler

269ks.yxzp

Share 0 LIKES Reply

AkimasaKajitani
15 - Aurora

My solution.

Spoiler

Workflow :

Spoiler

Result :

Spoiler

challenge_269_start_file_AK.yxzp

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PhilipMannering
15 - Aurora

Definitely feeling dense trying to get the answer. I also stopped at the intermediate answer.

Spoiler

challenge_269_start_file.yxmd

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DeanWest
9 - Comet

All three tasks completed!

Spoiler

challenge_269_solution_DeanWest.yxzp

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apathetichell
17 - Castor

Spoiler

All 3 done. Got lazy on the report... No one is going the generate rows route for population center? Some sanity exists...

269 solution.yxzp

Share Reply

0 LIKES

dsmdavid
11 - Bolide

There are some tools that I never remember... (looking at you, x)

Spoiler

david_269.yxzp

4023 KB

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Qiu
19 - Altair

Save the advanced for another day!😁
I think the key for Intermediate is understanding of how to calculate the population-weighted centroids.

Spoiler

challenge_269_start_file-Qiu.yxzp

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balajilolla
8 - Asteroid

Spoiler

Spoiler

Spoiler

challenge_269_start_file.yxmd

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