Geo-Refer: Geographical Referencing Resources for Social Scientists

Samantha Cockings & Samuel Leung
School of Geography, University of Southampton

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Overview

- Social science and the need for geographical referencing
- Geo-Refer project
- Presenting geographical referencing through adaptive online learning
- Resources available

Social science and the need for geographical referencing

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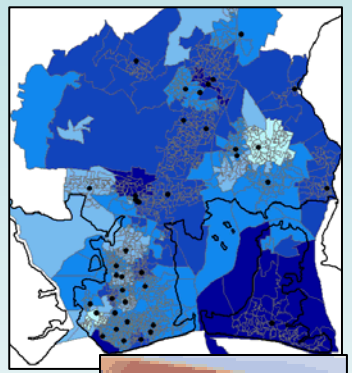
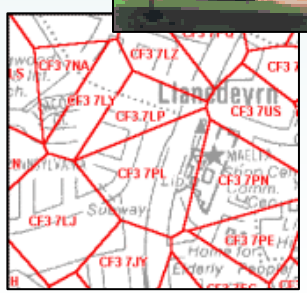
Geographical referencing examples

- Link survey results to census data
- Produce shaded area map of census results
- Associate postcoded patient records to Indices of Deprivation
- Allocate questionnaire responses to urban/rural neighbourhood types
- Link admin records to different geographies





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Learning needs

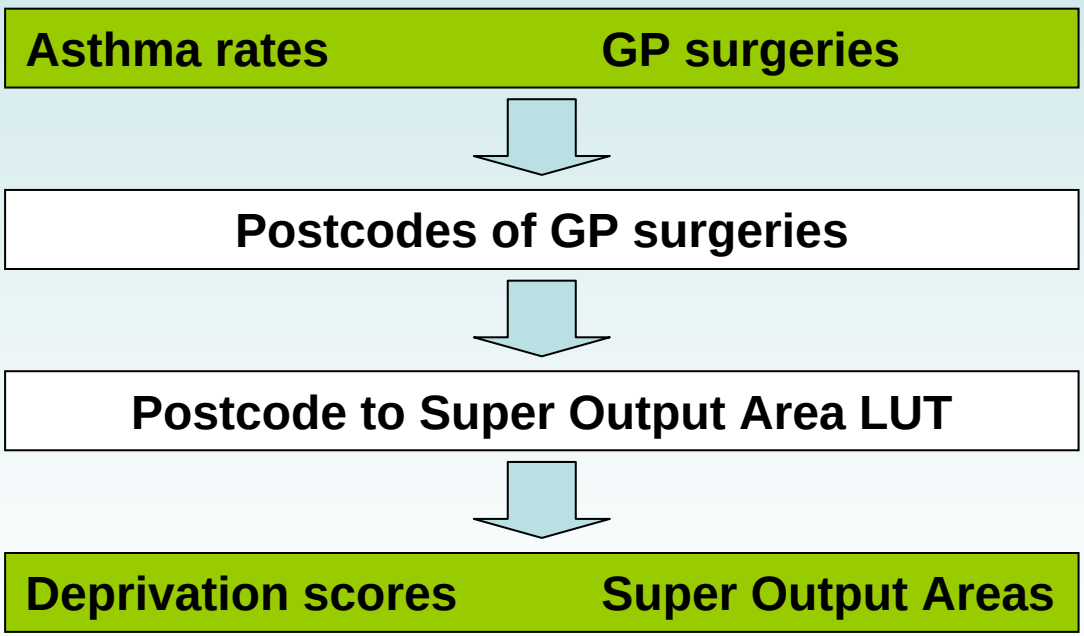
- Methodological vacuum: geographical referencing rarely included in general “research methods” courses
- Frequently needed by non-geographers but no obvious source of guidance (“phone a friend?”)
- Users often not able to articulate enquiries within a standard GIS education framework

Two recurring groups of tasks

- Data linkage (aspatial & spatial)
  - Record matching
  - Using geographical lookup tables
  - GIS operations
- Mapping
  - Point and thematic mapping

Tabular data linkage example

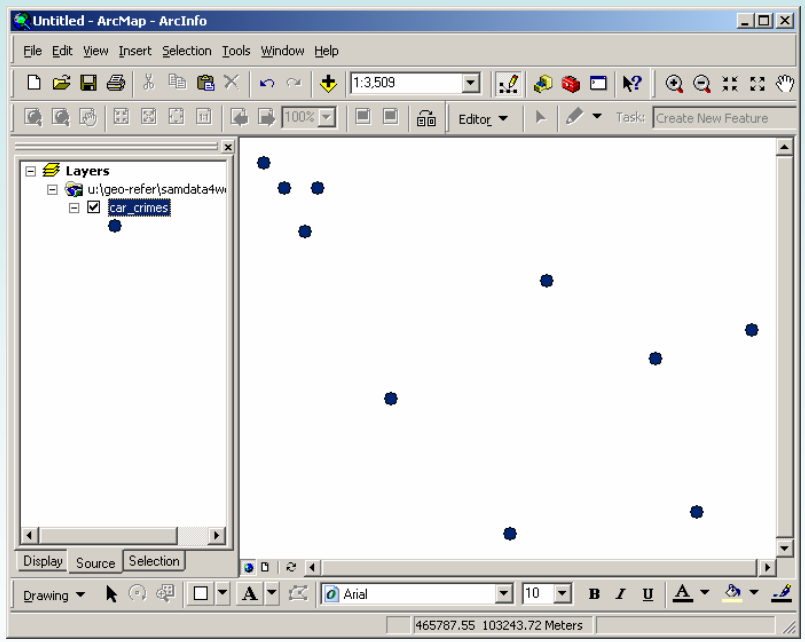
Tabular linkage requires lookup(s) between georeferences on two or more datasets



Mapping a set of points

Grid-refs of car crimes

465474,103429
465490,103409
465517,103409
465507,103374
465703,103334
465791,103271
465869,103294
465577,103238
465825,103146
465673,103129



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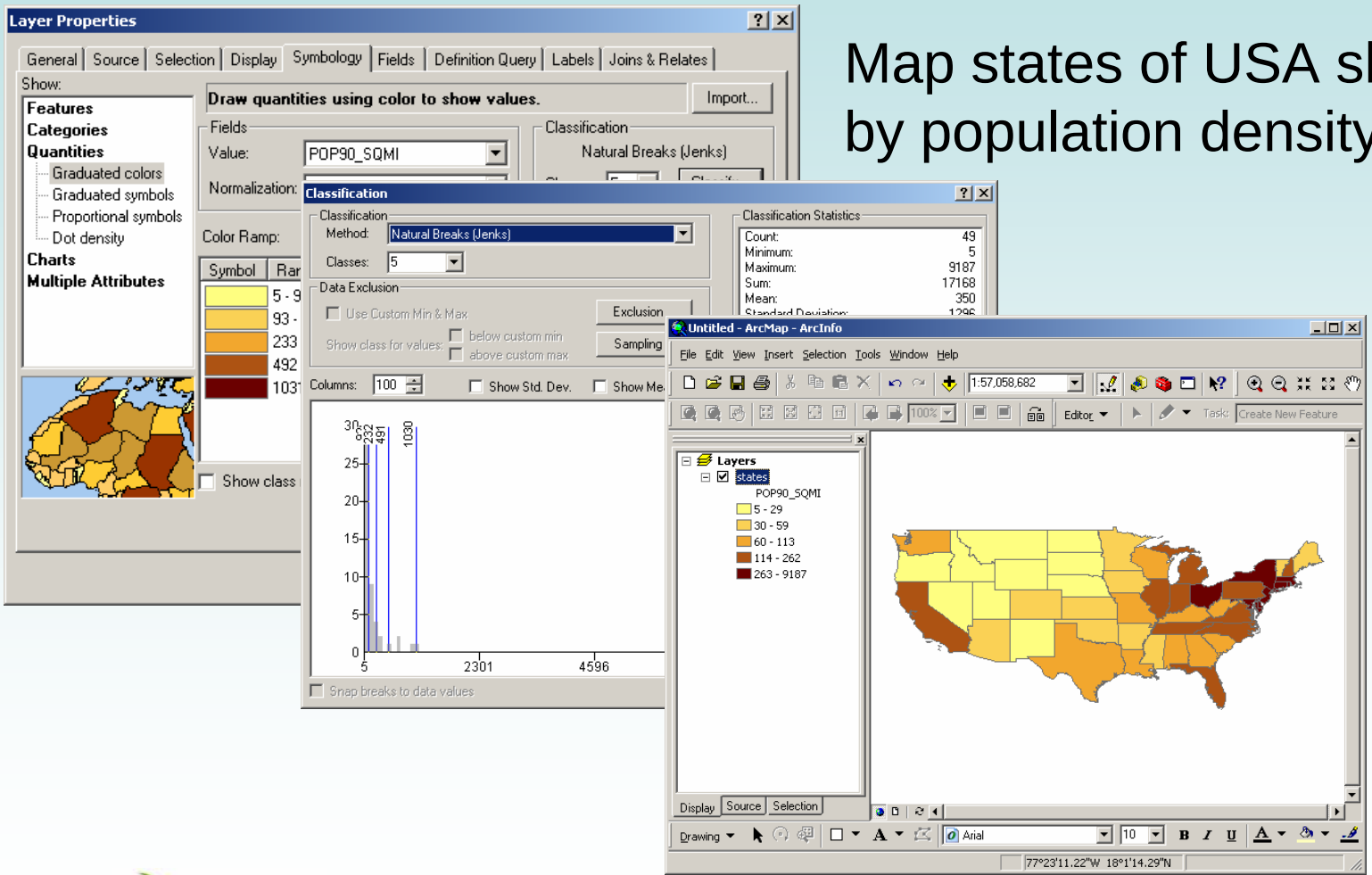
Mapping thematic data



Map states of USA shaded by population density

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Geo-Refer project

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Geo-Refer project

- On-line learning resources for social scientists who are not geographers but who need to undertake some sort of geographical referencing
- ‘Intelligent’ assembly of materials: customisable to user’s research needs
- Re-usable, updatable, deliverable within multiple environments and portals

Geo-Refer and Geo-Refer2

- Geo-Refer (Feb 06 – Jan 08)
  - Created learning objects
  - Delivered general workshops
  - Gathered case studies & refined materials
  - Developed adaptive learning interface & database

- Geo-Refer2 (Feb 08 – Dec 08)
  - Adapt interfaces and workshops for specific communities (census, health, local government)
  - Explore and demonstrate sustainability of resources

Presenting geographical referencing through adaptive online learning

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4-way categorization of content

- Concepts
  e.g. the spatial nature of social science data
- Methods
  e.g. creating a point map in ArcGIS
- Datasets
  e.g. the National Statistics Postcode Directory
- Examples
  e.g. linking and mapping out of hours calls to GPs in Devon

Metadata/standards

- Objects coded according to 15 Dublin Core elements including:
  - Title (The National Statistics Postcode Directory)
  - Coverage: region (UK), time period (2005-2006)
  - Keywords (Link, Match, Postcode)
  - Technical requirements: software (GeoConvert)
  - Copyright (Yes; Athens)
  - Contributor: role (Author), organisation (UoS), date (16/06/08)

The tricky bit …!

Customised delivery specific to users' needs

- How to understand users' needs?
- User profiling …
  - "Speaking the language"
  - Knowing enough to articulate needs
  - Asking the right questions
  - "Leading by example"?
  - Learning from face-to-face experience, but still very difficult …

How might this work for an individual user?

I've got postcoded survey responses: how do I match them to the census and map the results?

We need to create a user profile

Tell us about:

- Geo-referencing operations?
- Data, spatial units?
- Dates – range?
- Study area?
- User's location/affiliation?
- Software?
- Discipline/domain?

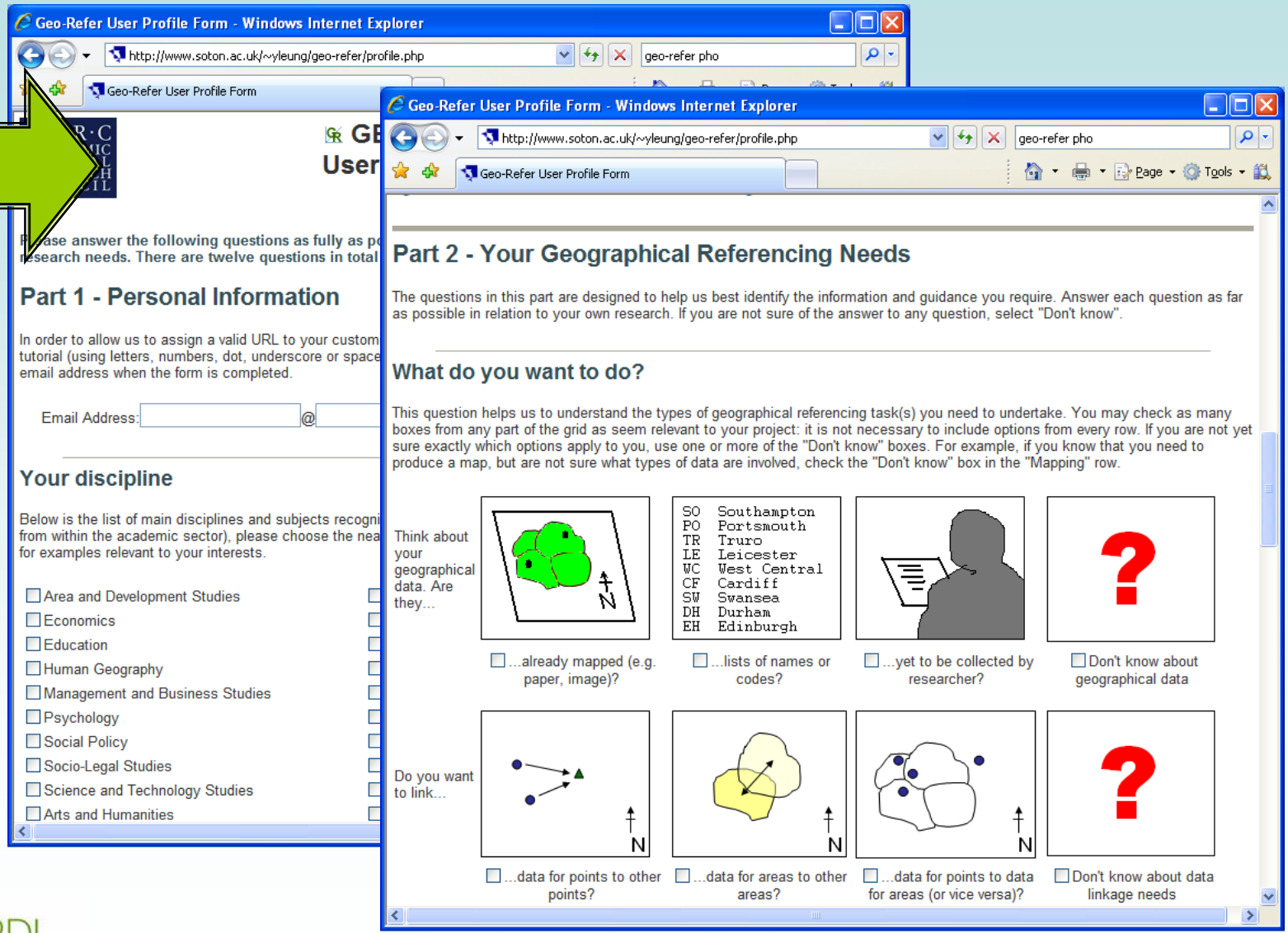
Jenny Bloggs

- Linkage, map
- Postcode, census
- 2001-6
- England
- UK Academic
- ArcGIS
- Health

On-line user profiling

Jenny Bloggs

User profile



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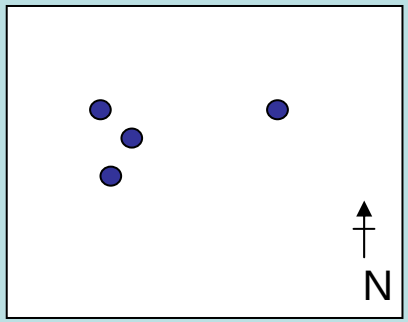
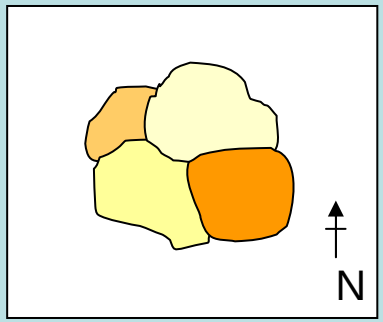
Visual examples

Map?

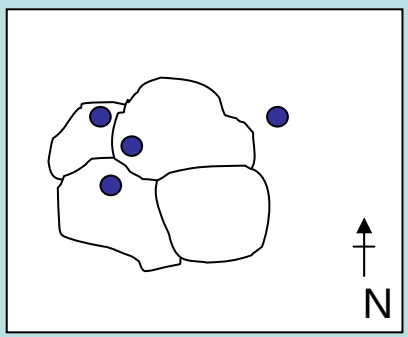


Map points ☑

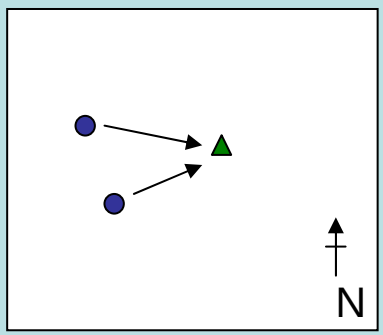


Map areas ☐

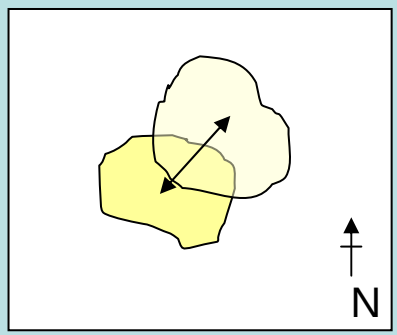
Link?



Link data for points to data for areas ☐

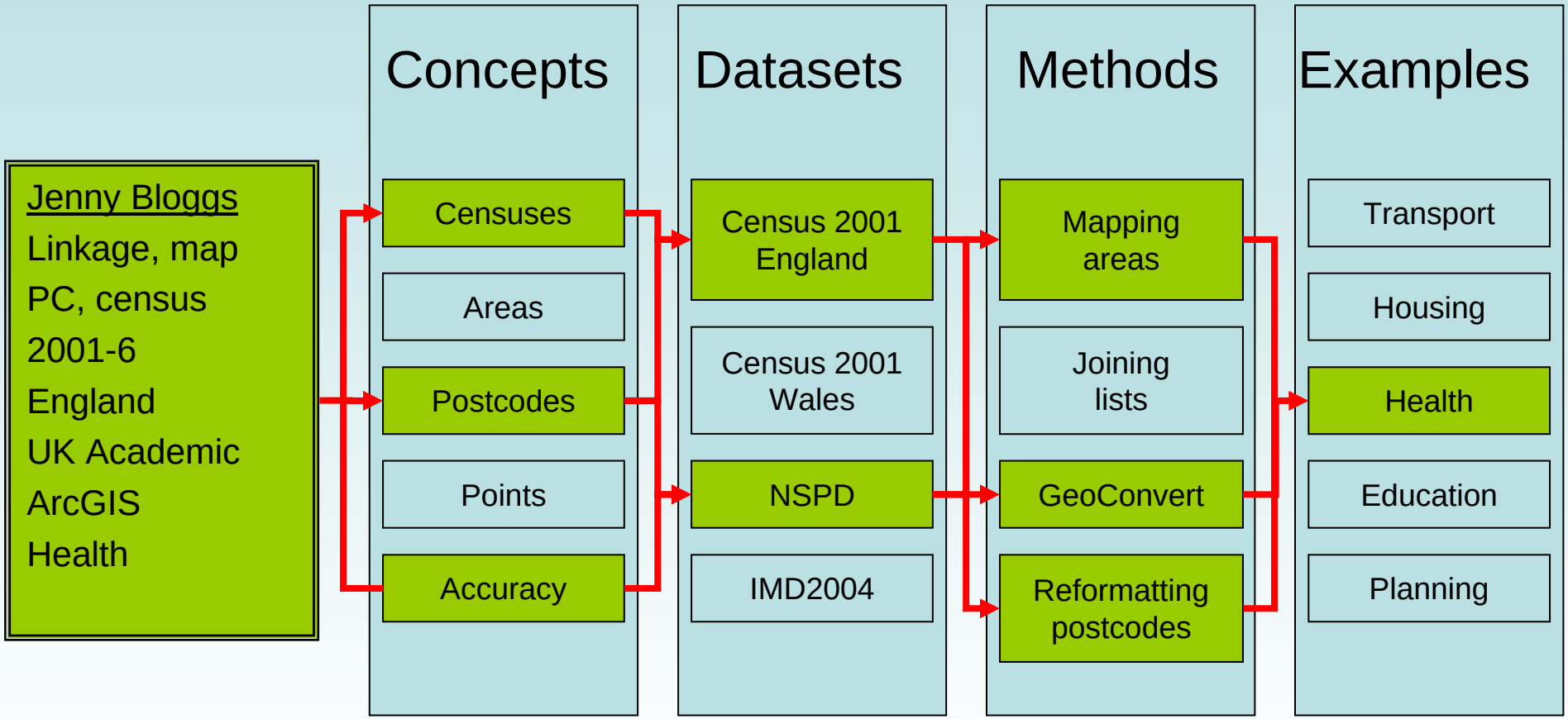


Link data for points to data for other points ☑



Link data for areas to data for other areas ☐

Customised set of learning resources



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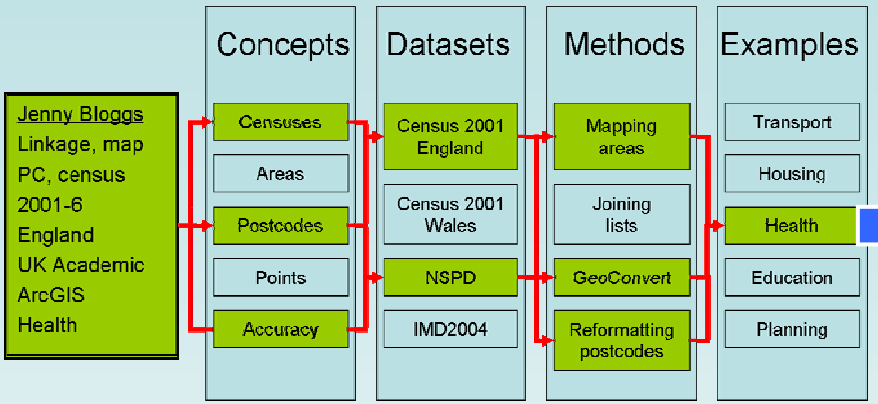
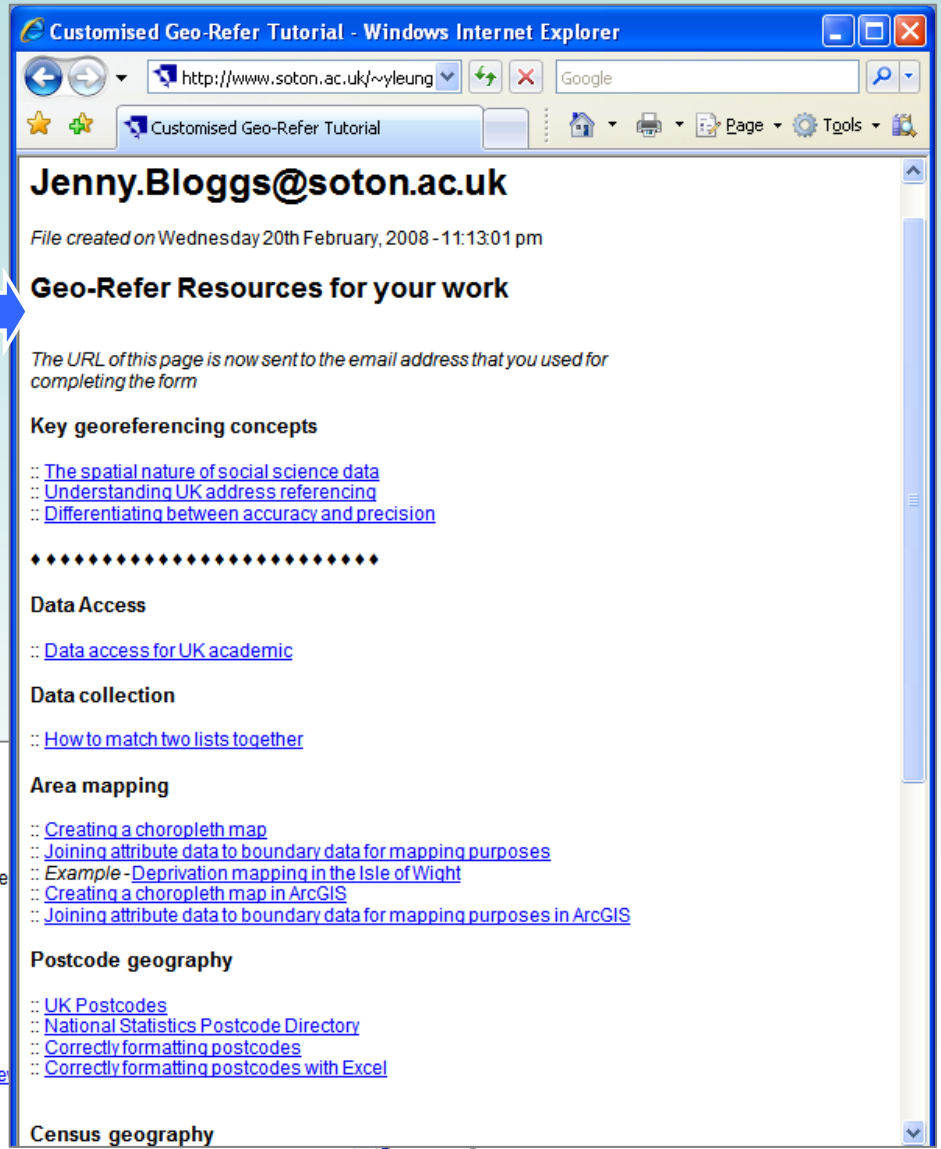
Customised online tutorial





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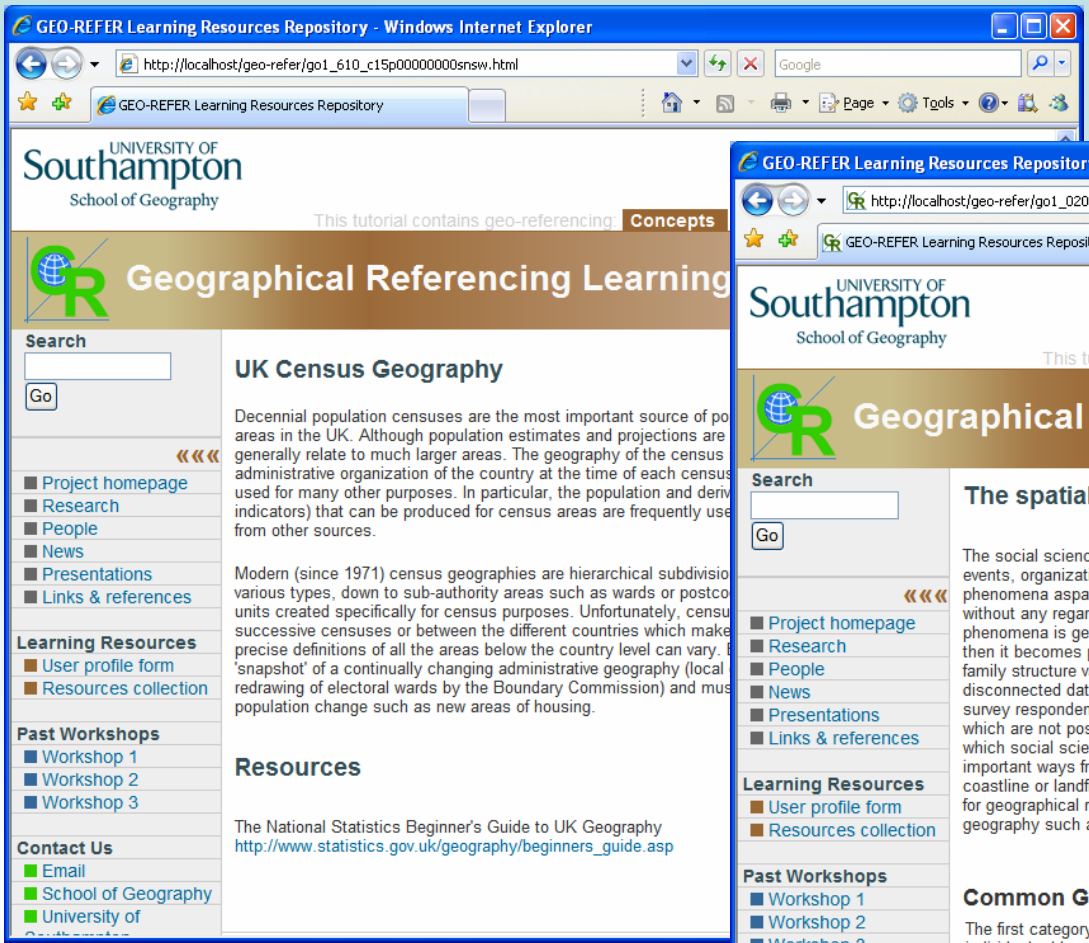
e.g. Concepts



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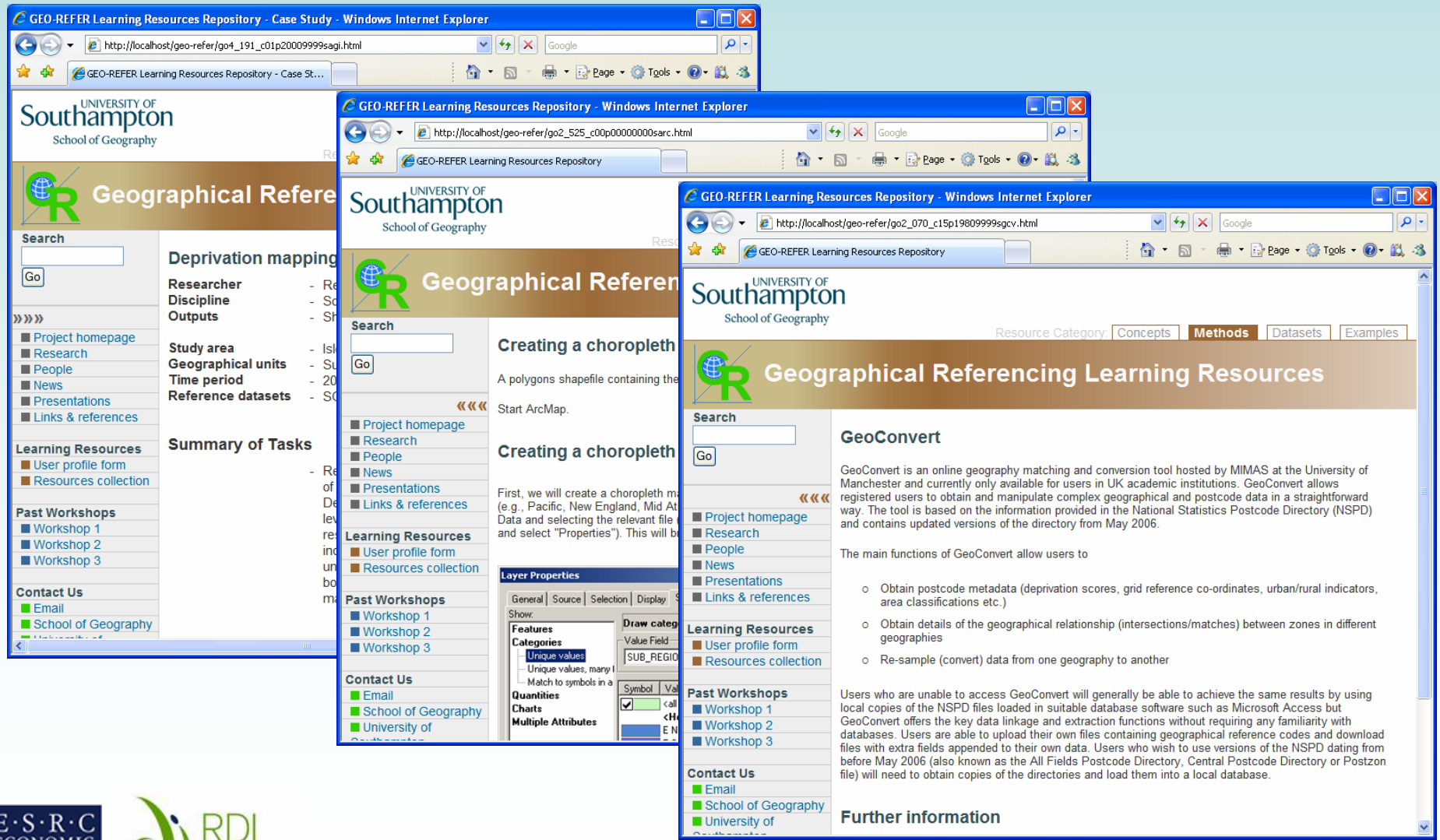
e.g. Methods and Examples



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Resources available

Using the Geo-Refer resources

- Complete the user profile form
  - Specify own profile and Geo-Refer will best-match learning materials to provide customised tutorial (web-based index page, URL emailed)

- Browse the entire set of resources
  - Extensive list of c.70 objects: concepts, methods, datasets and examples

http://www.geog.soton.ac.uk/geo-refer/

Please …
use, experiment, feedback!

http://www.geog.soton.ac.uk/geo-refer/

Email: geo-refer@soton.ac.uk

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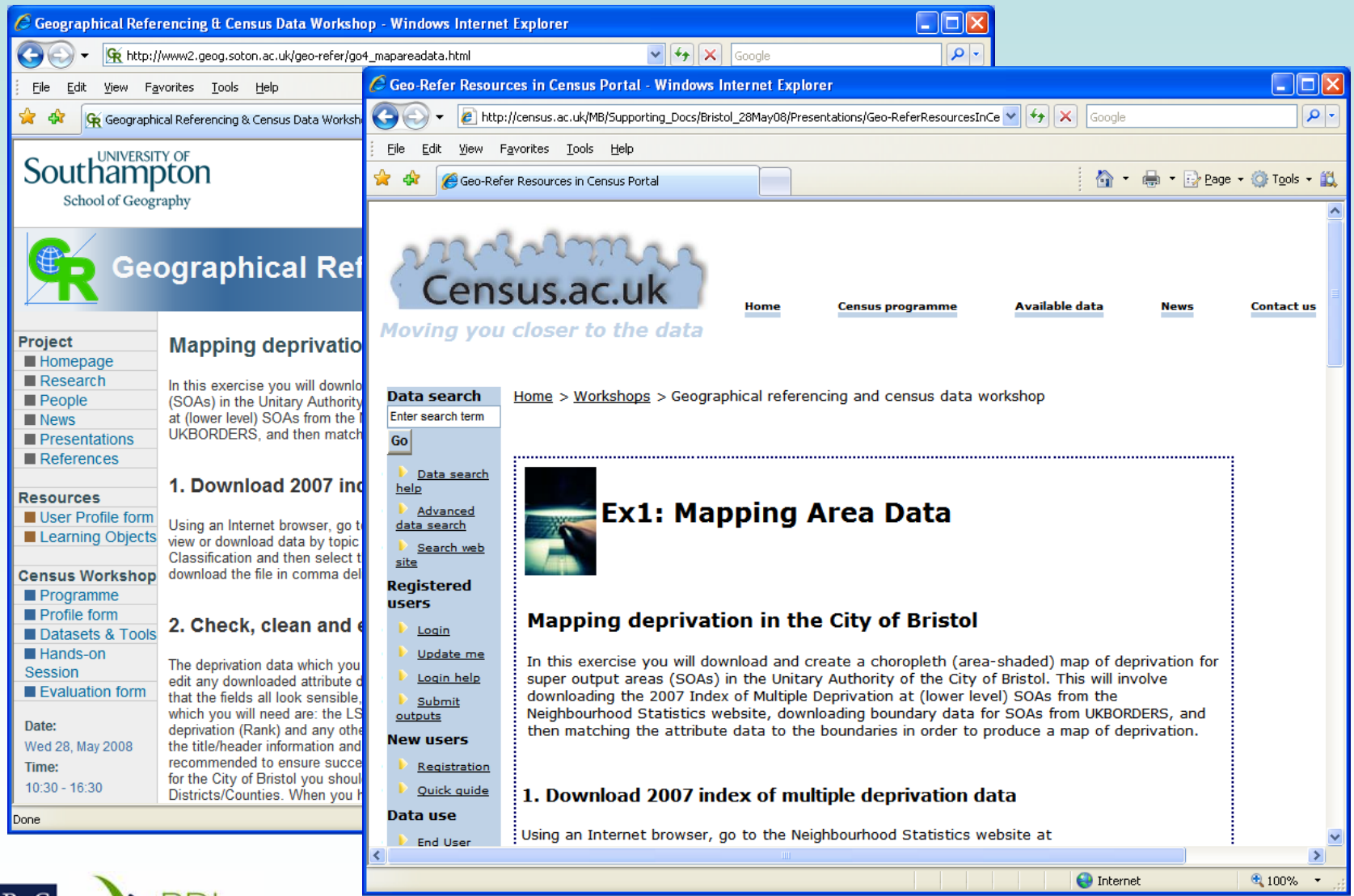
Integration with the Census Portal



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