University of BRISTOL

MAPPING THE MARCH

An RSE's adventures in time and space

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Mapping the March: Medieval Wales and England, c. 1282–1550 (MOWLIT)

- Funding: UKRI (originally an ERC Horizon 2020 project)
  - £2m budget
  - £175k for Research IT
- Project partners
  - University of Bristol
    - PI (Helen Fulton), 2 postdoctoral researchers, research administrator, Research IT
  - Royal Commission on Ancient and Historical Monuments in Wales (RCAHM)
- Timeline
  - Funded 2023–28
  - At least five years post-funding maintenance, i.e., 2028–32

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MAPPING THE MARCH

About me

- Senior Software Engineer, Research IT
- Worked at the University of Bristol since 2006
- Worked with Web technologies since ~1998 and mobile apps since ~2010 – Python, Perl, Java, Objective C, C, XML, XQuery, HTML, etc.
- BA in History (1993), MPhil in History (1998), MSc in Computing (2003)
- Associate Fellow of the Royal Historical Society
- A particular interest in supporting Digital Humanities projects

The main aims of the project

"Mapping the March: Medieval Wales and England, c. 1282–1550 aims to create the first holistic cultural history of the medieval March of Wales, the borderlands between Wales and England, occupied by a diverse population of Welsh and English speakers in the period between 1282 and 1550."

- Uncover and analyse the literary texts and manuscripts produced and circulated in the medieval March.
- Create an original series of digital maps of the Marcher lordships at various date points during the period.
- Link the texts and maps using prosopography
- Search, browse and visualise the texts, manuscripts and people via maps and network graphs

https://blog.mowlit.ac.uk/about/

The map is from H. Fulton and G. Evans, *Cambridge History of Welsh Literature* (Cambridge, 2019).

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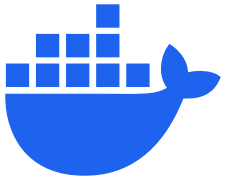
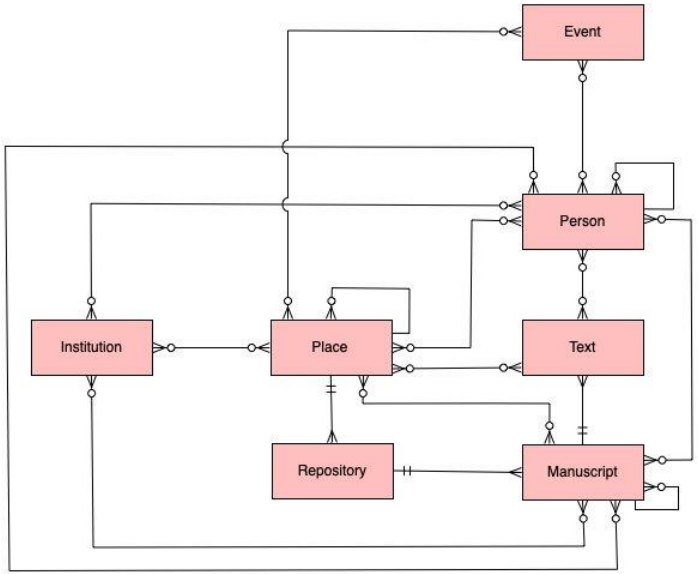
Research IT's role

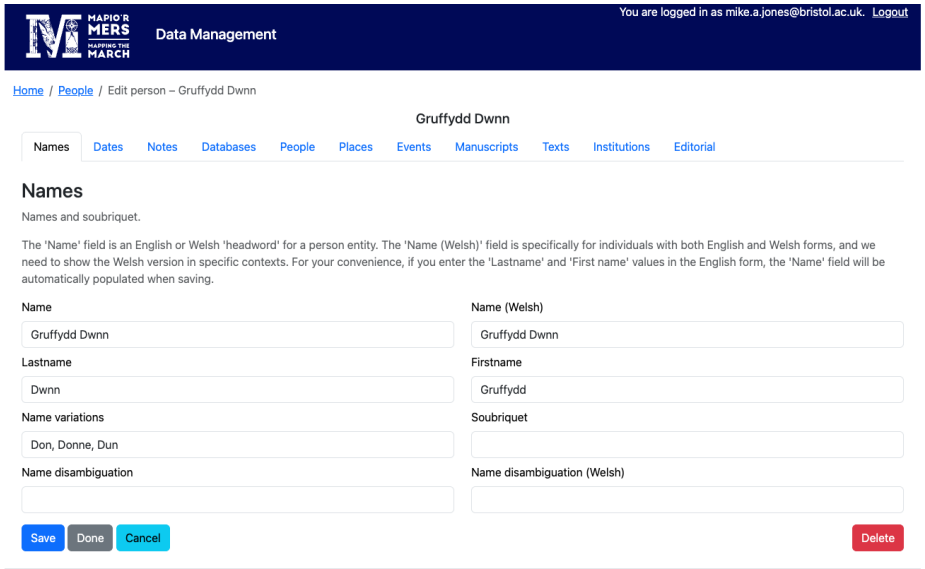
- By Research IT
  - Entity modelling (with postdocs)
  - Web application design and implementation – with 'private' data management and 'public' browse/search
  - Curated dataset modelling with postdocs and implementation, e.g., the creation of a linked data dataset with RDF
  - Help with data analysis and visualisations
- External contractors
  - User Experience (UX)
  - Graphic design/branding

Key Technologies

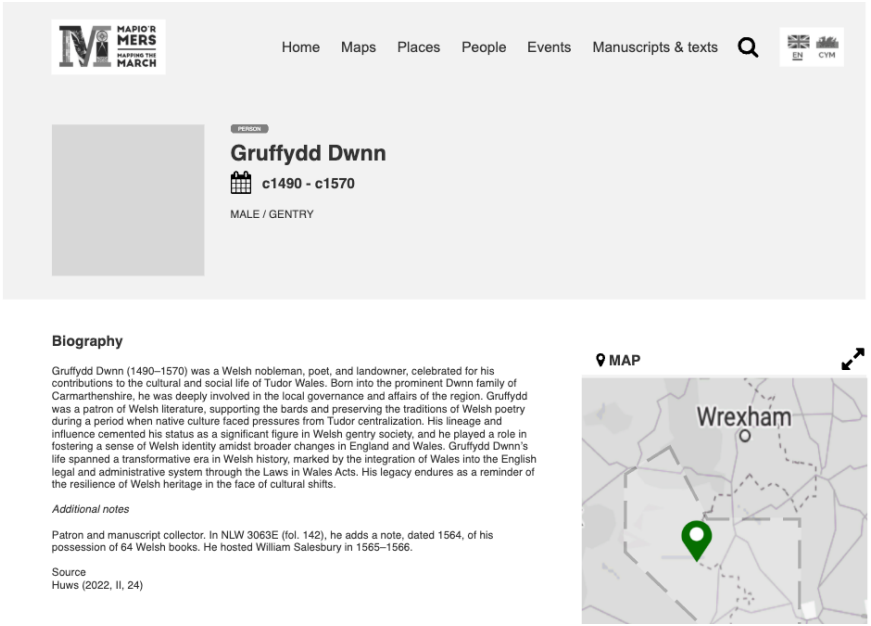


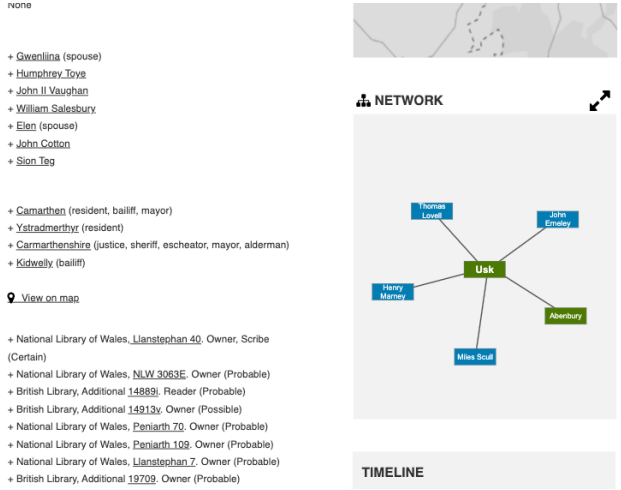
Data management





User Experience (UX) and design





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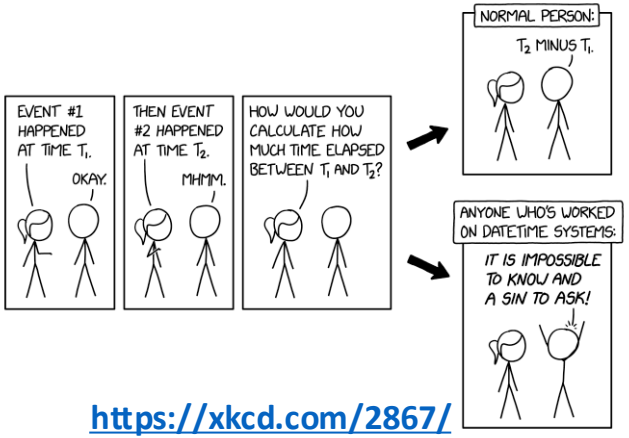
https://researchit.blogs.bristol.ac.uk/2025/06/03/thinking-about-digital-design-why-it-matters-for-your-academic-research-project/

Dates are hard! (1)

- Some of the dates and date ranges the project deals with are vague, e.g., ‘early thirteenth century’ or ‘c.1500’ or ‘<1500’
- Using a calendar widget to define dates isn’t going to be practical
- Until 1752, England and Wales used the Julian calendar
- The default Python `datetime` module uses the Gregorian calendar

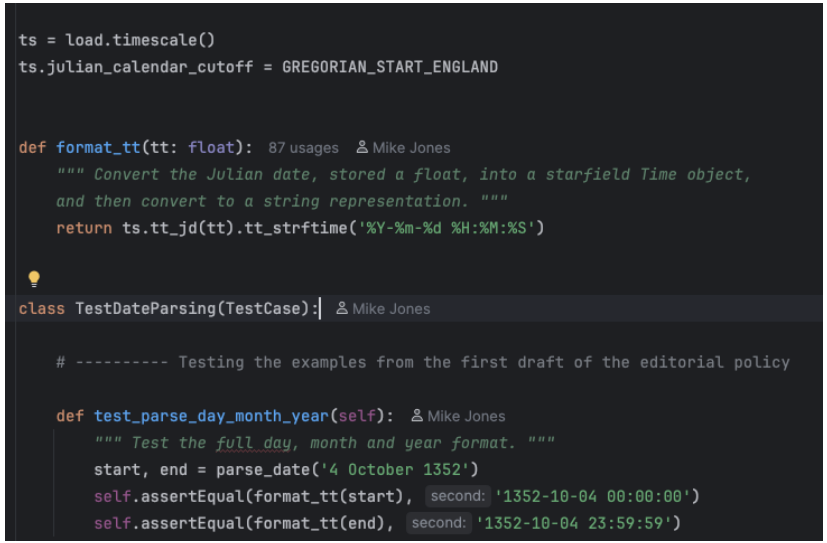


https://xkcd.com/2867/

https://xkcd.com/1179/

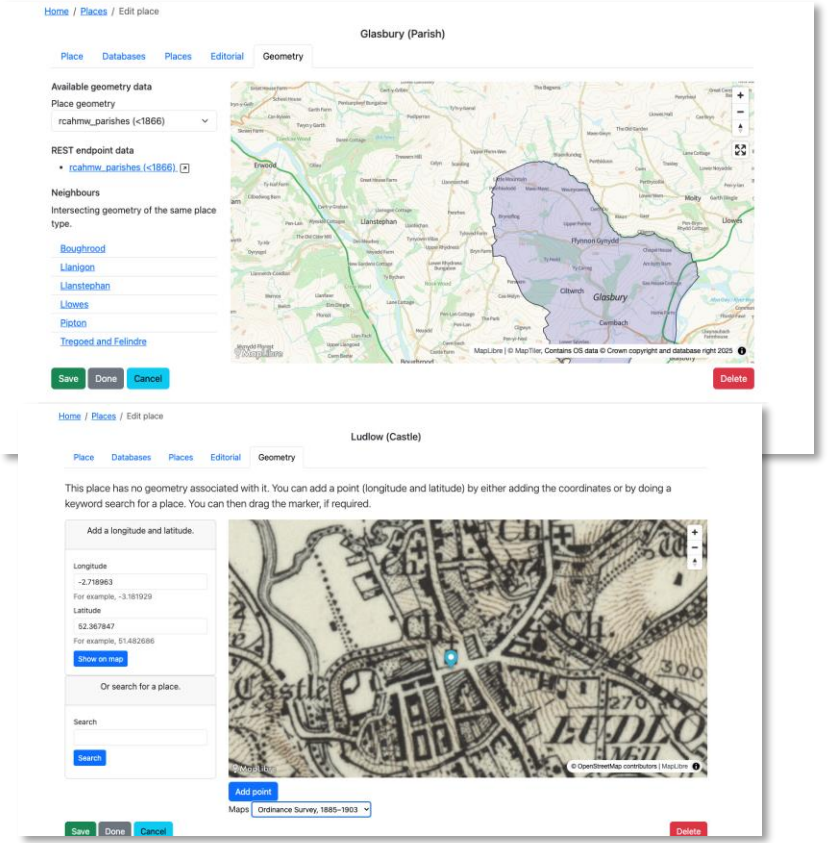
Dates are hard! (2)

- Agreed on an **editorial policy on acceptable date formats** that can be entered, e.g. '4 October 1352', '4–10 October 1352', '1352', '1352–1358', '1352×1358, 'Early 13th century', '<1300'
- Dates are converted to a range, e.g. '1352' has a start date of '1352-01-01 00:00:00' and '1352-12-31 23:59:59'
- The start and end dates are stored as floating-point numbers that represent that date in the Julian calendar (using the `skyfield` package)
- Custom Django validators check that the dates entered match the editorial policy



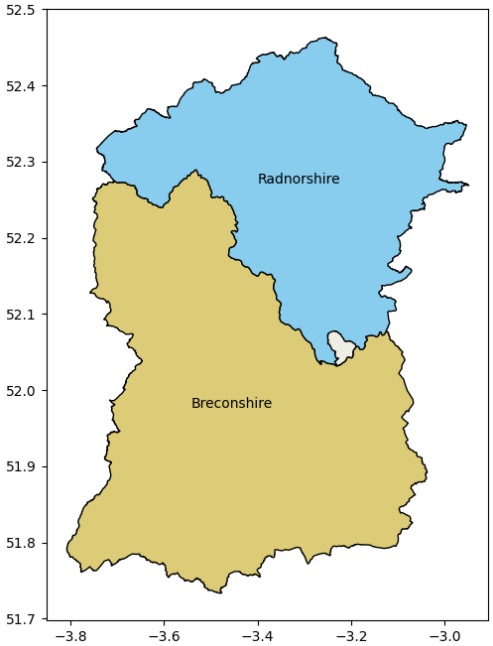
Geospatial data (1)

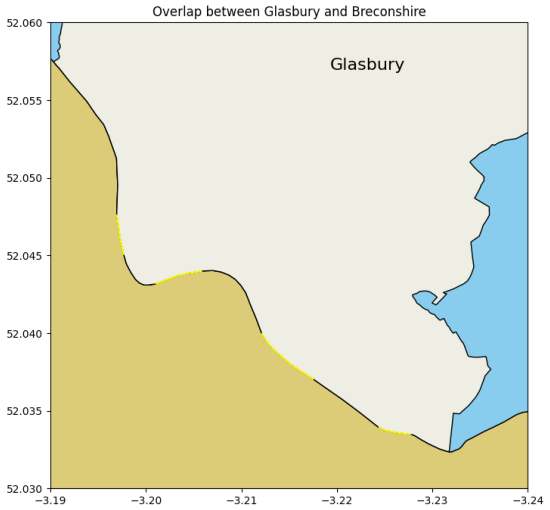
- We will be storing and querying Point, Polygons and MultiPolygons
- RCAHM and postdocs have created polygons of parishes, counties, hundreds, and townships – based on 1st edition Ordinance Survey maps
- The project will develop polygons for the marcher lordships and other administrative units
- Other types of places, a settlement within a parish, might be just represented by a point



Geospatial data (2)

- The coordinates have a high level of precision, which leads to large payloads
- Why is the parish of Glasbury not within Radnorshire?





https://historical-boundaries-of-wales-rcahmw.hub.arcgis.com/

Questions? ☺