Mapping Museums: VISUALISATIONS SPECIFICATION, 9/11/2018

A. FIRST SET OF VISUALISATIONS

THESE ARE SELECTABLE AS FOLLOWS FROM THE LEFT-HAND SIDE MENU:

Number of museums
- **open at a given time**
- **that opened up to given time**
- **that closed up to a given time**
- **open over time**
- **openings over time**
- **closings over time**
- **openings and closings over time**

DESCRIPTION OF EACH ONE:

1. **open at a given time [Bar Chart]**

- All
- For each Governance
    - For each Governance subtype of a Governance
- For each Subject
    - For each sub-subject of a Subject
- For each Size
- For each geographical Location
    - For each sub-location of a location
        - For each sub-sub location of a location

Default point in time is the current year.

A temporal slider on the bottom of the display allows you to move back and forth in time – the granularity is 1 year:

←----------→

1960 CURRENT YEAR

Logic: Suppose the time selected is t; for each museum with an opening date (fo,to) and a closing date (fc,tc), we add to the museums count for time t as follows:

If t < fo then 0

If fo <= t <= to then t-fo+1 / to-fo+1

If to < t < fc then 1

If fc <= t <= tc then tc-t+1 / tc-fc+1

If t> tc then 0

2. **that opened up to a given time [Bar Chart]**

- All
- For each Governance
    - For each Governance subtype of a Governance
- For each Subject
    - For each sub-subject of a Subject
- For each Size
- For each geographical Location
    - For each sub-location of a location
        - For each sub-sub location of a location

Default point in time is the current year.

A temporal slider on the bottom of the display allows you to move back and forth in time – the granularity is 1 year.

Logic: Suppose the time selected is t; for each museum with an opening date (fo,to) we add to the museums count for time t as follows:

If t < fo then 0

If fo <= t <= to then t-fo+1 / to-fo+1

If to < t then 1

3. **that closed up to a given time [Bar Chart]**

As above for navigating the choices in the LHS menu, the default point in time, and the temporal slider.

Logic: Suppose the time selected is t; for each museum with an closing date (fc,tc) we add to the museums count for time t as follows:

If t < fc then 0

If fc <= t <= tc then t-fc+1 / tc-fc+1

If tc < t then 1

4. **open over time [Line Graph]**

X axis is the year [from 1960 to the current year]

Y axis is the number of museums

(i) All

(ii) If the user selects a specific attribute, we split the number of museums according to the subcategories of the attribute, so that several lines are shown on the same graph. The attributes are as in 1-3 above. So we have:

- A line for each Governance
    - A line for each Governance subtype of a Governance
- A line for each Subject
    - A line for each sub-subject of a Subject
- A line for each Size
- A line for each geographical Location
    - A line for each sub-location of a location
        - A line for each sub-sub location of a location

Logic: same as in 1 above

5. openings over time [line graph]

X axis is the year [from 1960 to the current year]

Y axis is the number of museum openings

(i) All

(ii) If the user selects a specific attribute, we split the number of museum openings according to the subcategories of the attribute, so that several lines are shown on the same graph. So we have:

- A line for each Governance
    - A line for each Governance subtype of a Governance
- A line for each Subject
    - A line for each sub-subject of a Subject
- A line for each Size
- A line for each geographical Location
    - A line for each sub-location of a location
        - A line for each sub-sub location of a location

Logic: Suppose the time selected is t; for each museum with an opening date (fo,to) we add to the count of museum openings for time t as follows:

If t < fo then 0

If fo <= t <= to then 1 / to-fo+1

If to < t then 0

6. closings over time [line graph]

As in 5 (openings over time) for the X axis, Y axis, and splits of the number of museum closings according to the attribute selected.

Logic: Suppose the time selected is t; for each museum with a closing date (fc,tc) we add to the count of museum closings for time t as follows:

If t < fc then 0

If fc <= t <= tc then 1 / tc-fc+1

If tc < t then 0

7. openings and closings over time [line graph]

For this graph, we superimpose the two "All" lines from 5 and 6 above. No splits into attributes are supported.

Logic: combination of the logics for 5 and 6 above

B. SECOND SET OF VISUALISATIONS

These are all heat maps, with a time slider beneath each one. Each cell in the heatmap shows the number of museums open in the selected year that satisfy the two selected criteria on the X and the Y axis.

The default point in time for generating the numbers in the heat map is the current year. The year range in the temporal slider is 1960 to the current year.

Logic No. 1 above (for specifying the number of museums that are "open at a given time") is used to create a fractional count for a given year when a museum's opening/closing dates span an interval of years.

THE VISUALISATIONS ARE SELECTABLE BY CHOOSING AN X AND A Y VALUE FROM THE LEFT-HAND MENU:

Table

X

- **Governance**
  - **Governance subtypes**
- **Subject Matter**
  - **Subject subtypes**
- **Size**
- **Geodemographic group**
- **Geodemographic subgroup**
- **Deprivation index**
- **Location**
  - **sub-location of a Location**
    - **sub-sub locations**

Y – as for X, but without the choice of Location