

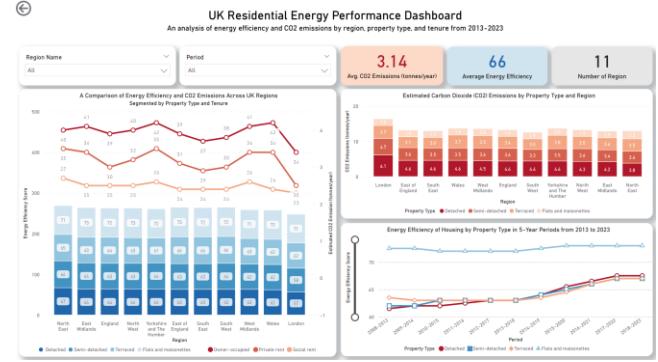
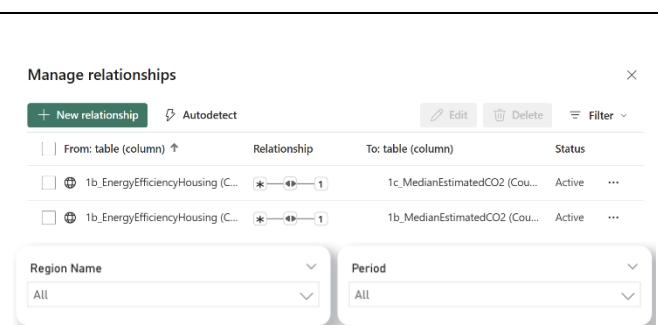
Coursework Description Sheet

Name: Fauzi.

Question	Description	Figure																																																												
Fit to Task/User needs	<p>Location task - How does the visualization allow users to access the spread of carbon dioxide emissions across the UK based on the property type?</p> <p>The graph shows estimated carbon dioxide (CO₂) emissions by property type and region in the UK, displayed as a stacked bar chart. This visualization provides an overview of total emissions for each region, stacked by property type. According to Munzner (2015), a stacked bar chart is suitable for visualizing this type of data because it is quantitative and has one categorical parameter. The advantage is that it allows for viewing of values and identifying trends at the same time.</p> <p>The data used is estimated CO₂ emissions by property type and region, up to the financial year ending March 2023, sourced from The Office for National Statistics (ONS), specifically shown in Table 1b. The x-axis in the graph displays the distribution of regions in the UK, allowing users to identify differences in estimated CO₂ emissions between regions. Furthermore, the y-axis represents the estimated CO₂ emissions in tonnes/year.</p> <p>Each bar in this chart is segmented based on four property types: detached, semi-detached, terraced, and flats and maisonettes. This is suitable for comparing the CO₂ emissions generated by each property type.</p>	<table border="1"> <caption>Data extracted from the Stacked Bar Chart</caption> <thead> <tr> <th>Region</th> <th>Detached</th> <th>Semi-detached</th> <th>Terraced</th> <th>Flats and maisonettes</th> </tr> </thead> <tbody> <tr><td>London</td><td>6.1</td><td>4.7</td><td>3.7</td><td>1.9</td></tr> <tr><td>East of England</td><td>4.6</td><td>3.6</td><td>3.1</td><td>1.9</td></tr> <tr><td>South East</td><td>4.6</td><td>3.5</td><td>3.0</td><td>1.9</td></tr> <tr><td>Wales</td><td>4.6</td><td>3.5</td><td>3.7</td><td>1.9</td></tr> <tr><td>West Midlands</td><td>4.5</td><td>3.6</td><td>3.5</td><td>2.0</td></tr> <tr><td>England</td><td>4.4</td><td>3.6</td><td>3.4</td><td>1.8</td></tr> <tr><td>South West</td><td>4.4</td><td>3.3</td><td>3.0</td><td>1.9</td></tr> <tr><td>Yorkshire and The Humber</td><td>4.4</td><td>3.5</td><td>3.8</td><td>2.0</td></tr> <tr><td>North West</td><td>4.3</td><td>3.6</td><td>3.5</td><td>1.9</td></tr> <tr><td>East Midlands</td><td>4.2</td><td>3.4</td><td>3.4</td><td>1.9</td></tr> <tr><td>North East</td><td>3.8</td><td>3.5</td><td>3.4</td><td>2.3</td></tr> </tbody> </table>	Region	Detached	Semi-detached	Terraced	Flats and maisonettes	London	6.1	4.7	3.7	1.9	East of England	4.6	3.6	3.1	1.9	South East	4.6	3.5	3.0	1.9	Wales	4.6	3.5	3.7	1.9	West Midlands	4.5	3.6	3.5	2.0	England	4.4	3.6	3.4	1.8	South West	4.4	3.3	3.0	1.9	Yorkshire and The Humber	4.4	3.5	3.8	2.0	North West	4.3	3.6	3.5	1.9	East Midlands	4.2	3.4	3.4	1.9	North East	3.8	3.5	3.4	2.3
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Time task - How does the visualization allow user to understand the evolution of energy efficiency based on the property type, and location?	<p>The visualization shows the development of energy efficiency every five years from 2008 - 2013 to 2018 - 2023, using a multi-line chart. The multi-line chart is used to display qualitative parameters, namely property type, so that changes in energy efficiency for each property type can be seen over time.</p>																																																													

	<p>The horizontal axis shows five-year rolling periods in ascending order, left to right, making this display a time series chart. Furthermore, the vertical axis shows the energy efficiency score of housing, ranging from 1 to 91. However, this graph only displays scores from 60 to 74 due to the data distribution within that range. The "Property type" category creates four different lines, each visualized by several unique colors and marker shapes for easy identification and accessibility.</p> <p>Users can easily identify the evolution of energy efficiency based on property type by viewing this graph. Line charts are the standard and most effective method for this type of data (Munzner, 2015). This design also implements color and shape as visual channels to make it easier for users to compare and separate data based on property type.</p>	<table border="1"> <thead> <tr> <th>Period</th> <th>Detached</th> <th>Semi-detached</th> <th>Terraced</th> <th>Flats and maisonettes</th> </tr> </thead> <tbody> <tr><td>2008-2013</td><td>62</td><td>63</td><td>64</td><td>72</td></tr> <tr><td>2009-2014</td><td>63</td><td>64</td><td>65</td><td>73</td></tr> <tr><td>2010-2015</td><td>64</td><td>65</td><td>66</td><td>72</td></tr> <tr><td>2011-2016</td><td>65</td><td>66</td><td>67</td><td>72</td></tr> <tr><td>2012-2017</td><td>66</td><td>67</td><td>68</td><td>72</td></tr> <tr><td>2013-2018</td><td>67</td><td>68</td><td>69</td><td>72</td></tr> <tr><td>2014-2019</td><td>68</td><td>69</td><td>70</td><td>73</td></tr> <tr><td>2015-2020</td><td>69</td><td>70</td><td>71</td><td>73</td></tr> <tr><td>2016-2021</td><td>70</td><td>71</td><td>72</td><td>74</td></tr> <tr><td>2017-2022</td><td>71</td><td>72</td><td>73</td><td>74</td></tr> <tr><td>2018-2023</td><td>72</td><td>73</td><td>74</td><td>74</td></tr> </tbody> </table>	Period	Detached	Semi-detached	Terraced	Flats and maisonettes	2008-2013	62	63	64	72	2009-2014	63	64	65	73	2010-2015	64	65	66	72	2011-2016	65	66	67	72	2012-2017	66	67	68	72	2013-2018	67	68	69	72	2014-2019	68	69	70	73	2015-2020	69	70	71	73	2016-2021	70	71	72	74	2017-2022	71	72	73	74	2018-2023	72	73	74	74																																				
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<p>Multi-dimentional data task</p> <ul style="list-style-type: none"> - How does the visualization allow user to identify correlation amongst at least three of the following parameters: property type, tenure, location, energy efficiency, and carbon dioxide emission? 	<p>The line and stacked column chart illustrate the comparison between energy efficiency and estimated CO₂ emissions across UK regions, which is segmented by property type and tenure. This type of diagram combines a line chart showing the energy efficiency score on the left y-axis, segmented by property type, with a multi-series line chart on the right y-axis showing estimated CO₂ emissions, consisting of 3 types of tenure (owner-occupied, private rent, and social rent). By using this diagram approach, it is hoped that users can easily identify correlations between parameters.</p> <p>Looking at the bar chart, users can easily see the energy efficiency scores of each property type in each UK region, as they are labeled with values. Meanwhile, by following the line chart above, they can easily compare the three different tenure types. They can also identify which tenure contributes the most or least to CO₂ emissions in each location.</p> <p>The strength of the visualization is its integrated design. By placing two different parameters in the same area for each region, the chart takes advantage of the principle of proximity, which encourages viewers to connect the information and look for relationships</p>	<table border="1"> <thead> <tr> <th>Region</th> <th>Detached</th> <th>Semi-detached</th> <th>Terraced</th> <th>Flats and maisonettes</th> <th>Owner-occupied</th> <th>Private rent</th> <th>Social rent</th> </tr> </thead> <tbody> <tr><td>North East</td><td>71</td><td>65</td><td>67</td><td>66</td><td>4.0</td><td>3.5</td><td>2.7</td></tr> <tr><td>East Midlands</td><td>73</td><td>63</td><td>64</td><td>64</td><td>4.1</td><td>3.4</td><td>2.5</td></tr> <tr><td>England</td><td>72</td><td>64</td><td>63</td><td>63</td><td>3.9</td><td>2.5</td><td>2.5</td></tr> <tr><td>North West</td><td>73</td><td>63</td><td>64</td><td>64</td><td>4.0</td><td>3.2</td><td>2.5</td></tr> <tr><td>Yorkshire and The Humber</td><td>72</td><td>64</td><td>64</td><td>64</td><td>4.2</td><td>3.5</td><td>2.6</td></tr> <tr><td>East of England</td><td>73</td><td>66</td><td>63</td><td>63</td><td>3.9</td><td>3.1</td><td>2.4</td></tr> <tr><td>South East</td><td>72</td><td>66</td><td>63</td><td>63</td><td>3.8</td><td>3.7</td><td>2.4</td></tr> <tr><td>South West</td><td>72</td><td>66</td><td>63</td><td>63</td><td>3.4</td><td>2.9</td><td>2.4</td></tr> <tr><td>West Midlands</td><td>71</td><td>66</td><td>63</td><td>63</td><td>4.1</td><td>3.4</td><td>2.6</td></tr> <tr><td>Wales</td><td>72</td><td>62</td><td>62</td><td>62</td><td>4.2</td><td>3.4</td><td>2.4</td></tr> <tr><td>London</td><td>71</td><td>62</td><td>58</td><td>57</td><td>3.4</td><td>2.5</td><td>2.3</td></tr> </tbody> </table>	Region	Detached	Semi-detached	Terraced	Flats and maisonettes	Owner-occupied	Private rent	Social rent	North East	71	65	67	66	4.0	3.5	2.7	East Midlands	73	63	64	64	4.1	3.4	2.5	England	72	64	63	63	3.9	2.5	2.5	North West	73	63	64	64	4.0	3.2	2.5	Yorkshire and The Humber	72	64	64	64	4.2	3.5	2.6	East of England	73	66	63	63	3.9	3.1	2.4	South East	72	66	63	63	3.8	3.7	2.4	South West	72	66	63	63	3.4	2.9	2.4	West Midlands	71	66	63	63	4.1	3.4	2.6	Wales	72	62	62	62	4.2	3.4	2.4	London	71	62	58	57	3.4	2.5	2.3
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	(Ware, 2022). As a result, users can explore correlations, such as regions with lower efficiency scores have higher emissions from certain tenure types and it is a helpful tool for analytical reasoning.	
Visualisation Principles	<p>Use of colour - How does the use of colour in this dashboard enhance the readability and effectiveness of the data presentation?</p> <p>The dashboard uses a specific eight-class color palette that is safe for colorblind users and grayscale printing, created with ColorBrewer 2.0 (Brewer and Harrower, n.d.). Choosing a diverging scheme is key to the dashboard's readability. The use of two distinct colors, red and blue, instantly shows the user that the data has two opposing directions. For example, values below the midpoint appear in shades of red, while values above it show shades of blue.</p> <p>The choice of red for CO₂ emissions plays on a common cultural understanding that red signals warning, danger, or negative outcomes. Meanwhile, blue represents energy efficiency. Blue often conveys coolness, stability, or positive/neutral information.</p> <p>Different shades, from darker to lighter, serve as a qualitative tool to differentiate between distinct categories, making it safe for grayscale printing. Instead of using completely different colors for each property type, which can create a rainbow effect, the design employs several shades of blue. Similarly, the three tenure types are represented by three distinct shades of red. The rainbow color map grabs attention, but it does not effectively show data in a scientific way (Stoelzle and Stein, 2021).</p> <p>This color scheme creates a clean, organized, and professional look that helps users compare categories without being distracted by too much color variation. It was implemented systematically by creating a custom Power BI theme.</p>	

<p>Use of graphic design principles -How does the application of graphic design principles enhance the clarity and effectiveness of the data presentation in this dashboard?</p>	<p>Several graphic design principles used in this dashboard are proximity, continuity (Koffka, 2013), repetition, consistency, and white space. The design creates a visual structure that guides the user's attention, following the Z-pattern to reduce cognitive load.</p> <p>The law of proximity is used to group related elements. Each graph has a title at the top center and a legend always placed at the bottom center, making it easier for users to decode. Key Performance Indicators (KPIs) containing the average energy efficiency score and CO₂ emissions are grouped in the top right corner as well, allowing users to get the summary quickly.</p> <p>Furthermore, the law of continuity contributes to the clean design and structured layout. The main title and subtitle are centrally aligned, creating a formal and balanced header. Filters and KPIs are also aligned in neat rows and the same width. Also, the three main charts are aligned horizontally.</p> <p>In addition, repetition and consistency are applied in the font style and size for similar elements. Consistent in colors, such as shades of blue for Energy Efficiency and shades of red for CO₂ emissions, is also applied throughout this dashboard.</p> <p>Lastly, the dashboard uses white space as gaps between each element. So the goal is to avoid disorganization and help users focus on one chart at a time. Another purpose is to improve the user's readability.</p>	 <p>The dashboard features a main title "UK Residential Energy Performance Dashboard" and a subtitle "An analysis of energy efficiency and CO₂ emissions by region, property type, and tenure from 2013-2023". It includes a search bar for "Region Name" and a dropdown for "Period" set to "All". In the top right, there are three KPIs: "Avg CO₂ Emissions (tonnes/year)" at 3.14, "Average Energy Efficiency" at 66, and "Number of Region" at 11. Below these are two charts: a line chart titled "A Comparison of Energy Efficiency and CO₂ Emissions Across UK Regions Segmented by Property Type and Tenure" and a bar chart titled "Estimated Carbon Dioxide (CO₂) Emissions by Property Type and Region". The bottom section contains a line chart titled "Energy Efficiency of Housing by Property Type in 5-Year Periods from 2013 to 2023".</p>
<p>Use of interaction - How does the use of interactive design elements improve the user's ability to explore and interpret data on this dashboard?</p>	<p>Two datasets were used to create the dashboard: Energy efficiency of housing and median estimated CO₂ emissions. Relationships were established for both datasets/tables. This step is crucial for displaying correct information and ensuring the graphs are connected. The column used to create the relationship is the "Country or Region Code" column. In this case, the "Country or Region Name" column is not used to avoid mistypes that could lead to relationship failure. All interactions on each chart should be functional, such as clicking on a specific bar or line and using filters.</p>	 <p>The screenshot shows the "Manage relationships" interface with a table for defining relationships between tables. It includes columns for "From: table (column)", "Relationship", "To: table (column)", and "Status". Two relationships are listed:</p> <ul style="list-style-type: none"> From: 1b_EnergyEfficiencyHousing (Country or Region Code) to 1c_MedianEstimatedCO2 (Country or Region Code) with a 1-to-1 relationship, marked as Active. From: 1b_EnergyEfficiencyHousing (Country or Region Code) to 1b_MedianEstimatedCO2 (Country or Region Code) with a 1-to-1 relationship, marked as Active. <p>Below the table are dropdowns for "Region Name" and "Period", both currently set to "All".</p>

	<p>The dashboard utilizes two filters: region name and period, equipped with drop-down menus and multi-selection. This feature allows users to select one or more regions and specific periods for a more focused or detailed view. These filters affect the entire graph depending on the filter applied.</p> <p>Additionally, a zoom slider has been added to the vertical axis for the energy efficiency by property type in the five-year period graph. This is because label values are not displayed on the graph to avoid overwhelming. To address this issue, users can use the zoom slider feature provided to zoom in vertically to see the energy efficiency score for a specific property type.</p>	<p>Energy Efficiency of Housing by Property Type in 5-Year Periods from 2013 to 2023</p> <p>Y-axis: Energy Efficiency Score (61 to 64)</p> <p>X-axis: Period (2008-2013 to 2018-2023)</p> <p>Property Type: Detached (red circle), Semi-detached (blue square), Terraced (orange diamond), Flats and maisonettes (light blue triangle)</p> <table border="1"> <thead> <tr> <th>Period</th> <th>Detached</th> <th>Semi-detached</th> <th>Terraced</th> <th>Flats and maisonettes</th> </tr> </thead> <tbody> <tr><td>2008-2013</td><td>61.2</td><td>61.5</td><td>63.5</td><td></td></tr> <tr><td>2009-2014</td><td>61.5</td><td>61.8</td><td>63.2</td><td></td></tr> <tr><td>2010-2015</td><td>62.0</td><td>62.2</td><td>63.0</td><td></td></tr> <tr><td>2011-2016</td><td>62.5</td><td>62.8</td><td>63.0</td><td></td></tr> <tr><td>2012-2017</td><td>63.0</td><td>63.2</td><td>63.0</td><td></td></tr> <tr><td>2013-2018</td><td>63.5</td><td>63.5</td><td>63.0</td><td></td></tr> <tr><td>2014-2019</td><td>64.0</td><td>64.2</td><td>63.5</td><td></td></tr> <tr><td>2015-2020</td><td>64.5</td><td>64.8</td><td>64.0</td><td></td></tr> <tr><td>2016-2021</td><td>65.0</td><td>65.2</td><td>64.5</td><td></td></tr> <tr><td>2017-2022</td><td>65.5</td><td>65.8</td><td>65.0</td><td></td></tr> <tr><td>2018-2023</td><td>66.0</td><td>66.2</td><td>65.5</td><td></td></tr> </tbody> </table>	Period	Detached	Semi-detached	Terraced	Flats and maisonettes	2008-2013	61.2	61.5	63.5		2009-2014	61.5	61.8	63.2		2010-2015	62.0	62.2	63.0		2011-2016	62.5	62.8	63.0		2012-2017	63.0	63.2	63.0		2013-2018	63.5	63.5	63.0		2014-2019	64.0	64.2	63.5		2015-2020	64.5	64.8	64.0		2016-2021	65.0	65.2	64.5		2017-2022	65.5	65.8	65.0		2018-2023	66.0	66.2	65.5	
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<p>Use of text and legend - How do the use of text and legends contribute to the clarity and user comprehension of the data presented in this dashboard?</p>	<p>The text used in this dashboard is customized with a uniform font family and consistent font size. The legend is always placed on the same side of each chart and is complemented by clear colors and symbols to avoid user misunderstandings when interpreting the data.</p> <p>All text in this dashboard uses the DIN font family with two sub-fonts: DIN (Regular) and DIN Light. Using only two fonts within the same family is expected to make reading easier for users and reduce distractions, allowing them to focus more on the chart content. The font size is also customized. Three font sizes are used: 8 for all text in the charts except the title, which uses a size of 10. The 28 font size is used for three charts to summarize important information on three key parameters (average CO₂ emissions, average energy efficiency, and total region). Center alignment is also applied to each chart. Furthermore, all three charts use a legend placed at the bottom center. This legend indicates the data categories displayed in the chart, such as property type and tenure.</p> <p>Both the text and legend work together to create a clear and accurate user experience. Furthermore, consistency in text and legend is expected to make it easier for users to understand and analyze data.</p>	<p>3.14 Avg. CO₂ Emissions (tonnes/year)</p> <p>66 Average Energy Efficiency</p> <p>11 Number of Region</p> <p>Estimated Carbon Dioxide (CO₂) Emissions by Property Type and Region</p> <p>Y-axis: CO₂ Emissions (tonnes/year) (0 to 20)</p> <p>X-axis: Region (London, East of England, South East, Wales, West Midlands, England, South West, Yorkshire and The Humber, North West, East Midlands, North East)</p> <p>Property Type: Detached (dark red), Semi-detached (medium red), Terraced (light red), Flats and maisonettes (orange)</p> <table border="1"> <thead> <tr> <th>Region</th> <th>Detached</th> <th>Semi-detached</th> <th>Terraced</th> <th>Flats and maisonettes</th> </tr> </thead> <tbody> <tr><td>London</td><td>6.1</td><td>3.7</td><td>1.9</td><td>1.3</td></tr> <tr><td>East of England</td><td>4.7</td><td>3.1</td><td>1.7</td><td>1.9</td></tr> <tr><td>South East</td><td>4.6</td><td>3.6</td><td>1.9</td><td>1.9</td></tr> <tr><td>Wales</td><td>4.6</td><td>3.5</td><td>1.9</td><td>1.9</td></tr> <tr><td>West Midlands</td><td>4.5</td><td>3.5</td><td>2.0</td><td>1.9</td></tr> <tr><td>England</td><td>4.4</td><td>3.6</td><td>3.4</td><td>1.9</td></tr> <tr><td>South West</td><td>4.4</td><td>3.3</td><td>2.0</td><td>1.9</td></tr> <tr><td>Yorkshire and The Humber</td><td>4.4</td><td>3.5</td><td>3.8</td><td>1.9</td></tr> <tr><td>North West</td><td>4.3</td><td>3.6</td><td>3.5</td><td>1.9</td></tr> <tr><td>East Midlands</td><td>4.2</td><td>3.4</td><td>3.6</td><td>1.9</td></tr> <tr><td>North East</td><td>3.8</td><td>3.4</td><td>3.5</td><td>2.3</td></tr> </tbody> </table>	Region	Detached	Semi-detached	Terraced	Flats and maisonettes	London	6.1	3.7	1.9	1.3	East of England	4.7	3.1	1.7	1.9	South East	4.6	3.6	1.9	1.9	Wales	4.6	3.5	1.9	1.9	West Midlands	4.5	3.5	2.0	1.9	England	4.4	3.6	3.4	1.9	South West	4.4	3.3	2.0	1.9	Yorkshire and The Humber	4.4	3.5	3.8	1.9	North West	4.3	3.6	3.5	1.9	East Midlands	4.2	3.4	3.6	1.9	North East	3.8	3.4	3.5	2.3
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References

- Brewer, C.A. and Harrower, M.A. (n.d.). ColorBrewer 2.0 [online]. Available at: <https://colorbrewer2.org/?type=diverging&scheme=RdBu&n=8> (Accessed: 11 October 2025).
- Koffka, K. (1935) Principles of Gestalt Psychology. London: Routledge. doi: 10.4324/9781315009292.
- Munzner, T. (2015) Visualization analysis & design. Éamonn Maguire (ed.). Boca Raton, FL : CRC Press.
- Stoelzle, M. and Stein, L. (2021) 'Rainbow color map distorts and misleads research in hydrology – guidance for better visualizations and science communication', *Hydrology and Earth System Sciences*, 25, pp. 4549-4565. doi: 10.5194/hess-25-4549-2021.
- Ware, C. (2021) Visual thinking for information design. Second edition. Amsterdam : Morgan Kaufmann.