carat

cut
color
clarity
depth
table
x
y
z
price These are the columns in my dataset give possible definition of these columns. Also I want to create a 2 page Power BI report using this data, suggest 5 KPIs for each page along with suitable charts to represent each KPI (Use DAX) Whereever required.

Here are definitions for each column in your diamonds dataset, along with detailed KPI and chart recommendations for a 2-page Power BI report using DAX for metrics where required.[1] [2] [3] [4] [5] [6]

Column Definitions

- **carat**: The weight of the diamond, measured in metric carats (1 carat = 0.2 grams). Higher carat generally means a larger diamond.[4] [6]
- **cut**: Indicates the quality of the diamond's craftsmanship and proportions, affecting how well the diamond reflects light (e.g., Excellent, Very Good, Good, Fair, Poor).[3] [5] [1]
- **color**: Describes how colorless the diamond is, typically graded from D (colorless) to Z (noticeable tint).[2] [6]
- **clarity**: A measure of imperfections in the diamond, ranging from Flawless (FL) to Included (I3). Inclusions and blemishes affect clarity grades.[7] [6]
- **depth**: Represents the height of the diamond (measured from the culet to the table) divided by the average diameter, often expressed as a percentage. Ideal depth contributes to better brilliance.[5]
- **table**: The width of the diamond's top facet (table) divided by average diameter, as a percentage. This affects the diamond's brightness.[5]
- **x**: Length of the diamond in millimeters.[4]
- **y**: Width of the diamond in millimeters.[4]
- **z**: Depth of the diamond in millimeters.[4]
- **price**: The retail or listed price of the diamond in currency.[6] [4]

Page 1: Diamond Quality KPIs

Recommended KPIs & DAX Expressions

1. **Average Carat Weight**
   KPI: Average carat size of diamonds
   DAX: `AverageCarat = AVERAGE(diamonds[carat])`
2. **Distribution of Diamond Cut Grades**
   KPI: Count of diamonds by cut
   Chart: Bar chart (Cut on X axis, Count on Y axis)
   DAX: `CutCount = COUNTROWS(diamonds)`
3. **Average Clarity Grade Score**
   KPI: If clarity is numeric, use average; if text, show count by category
   Chart: Column or pie chart
   DAX: (Assuming numeric clarity) `AvgClarity = AVERAGE(diamonds[clarity])`
4. **Color Grade Composition**
   KPI: Diamonds by color category (D-Z)
   Chart: Pie chart or stacked column chart
   DAX: `ColorCount = COUNTROWS(diamonds)`
5. **Average Depth Percentage**
   KPI: Average depth for ideal proportions
   DAX: `AvgDepth = AVERAGE(diamonds[depth])`
   Chart: KPI card or gauge

Suitable Charts

- Bar chart for counts of cuts and colors
- KPIs as cards for averages
- Pie chart for composition comparison

Page 2: Diamond Value & Dimensions KPIs

Recommended KPIs & DAX Expressions

1. **Average Price**
   KPI: Mean diamond price
   DAX: `AveragePrice = AVERAGE(diamonds[price])`
   Chart: KPI card
2. **Total Price by Cut**
   KPI: Sum of prices for each cut
   DAX: `PriceByCut = CALCULATE(SUM(diamonds[price]), GROUPBY(diamonds, diamonds[cut]))`
   Chart: Bar chart (Cut on X axis, Total Price on Y axis)
3. **Relationship between Carat and Price**
   KPI: Correlation/Trend

Chart: Scatter plot (Carat vs. Price)

4. **Average Table Percentage**
   KPI: Mean table facet width
   DAX: `AvgTable = AVERAGE(diamonds[table])`
   Chart: KPI card or line chart (if over time)
5. **Dimensions Distribution (x, y, z)**
   KPI: Distribution or median length, width, depth
   DAX: `AvgX = AVERAGE(diamonds[x])`, similarly for y and z
   Chart: Box plots or histograms

Suitable Charts

- KPI cards for averages
- Scatter plots to show correlations
- Bar charts for value totals by category
- Box plots/histograms for spread of dimension values

Each of these KPIs can be calculated in Power BI using DAX formulas and visualized with the chart types described above for clear insights on diamond quality and value attributes.[6] [5] [4]

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1. https://www.brilliantearth.com/diamond/buying-guide/
2. https://www.vummidi.com/blog/what-are-the-4-cs-of-diamonds/
3. https://hrdantwerp.com/4cs/
4. https://www.diamonds.pro/education/4cs-diamonds/
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