Scatter graph code comments

pythonCopy code

```
import          as     import                    as     import          as
```

This code imports the necessary libraries: **pandas** for data manipulation, **matplotlib.pyplot** for creating plots, and **numpy** for numerical operations.

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```
          "planet_name"    "Proxima Centauri b"  "TRAPPIST-1e"  "Kepler-186f"  "kepler 22b"  "kepler
452b"  "Gliese 667Cc"   "radius_earth"    1.17  0.92  1.11  2.4  1.6  4.5
```

This dictionary **data** holds information about the names of planets and their radii in Earth units. It's a representation of the data that will be used in the visualization.

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```

```

This line uses the **pandas** library to create a DataFrame **df** from the **data** dictionary. This DataFrame holds the planet names and radii as columns.

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```
                1.0
```

Here, the Earth's radius is defined as a constant value for reference.

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```
                  10  6
```

This creates a new figure for the plot with a specified size of 10 inches in width and 6 inches in height.

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```
             "planet_name"      "radius_earth"          'blue'          'o'          'Planets'
```

This line creates a scatter plot using planet names on the x-axis and their corresponding radii on the y-axis. Each data point is represented as a blue circle (**marker='o'**), and a label "Planets" is assigned for the legend.

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```
                                    'green'            '--'          'Earth'
```

This adds a horizontal dashed green line representing Earth's radius. The label "Earth" is assigned for the legend.

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```
          "Radius of Planets Compared to Earth"            "Planet"            "Radius (Earth radii)"
```

These lines set the title, x-axis label, y-axis label, and legend for the plot.

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```
0.5  5.5  0.5                    f"{x:.1f}" for   in
```

This section customizes the y-axis ticks by specifying their positions and formatting them to one decimal place.

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```
45
```

This rotates the x-axis labels by 45 degrees for better readability.

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```
True
```

This adds grid lines to the plot.

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This optimizes the layout to prevent elements from overlapping.

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Finally, this command displays the plot in the interactive environment.

The entire code creates a scatter plot comparing the radii of different planets to Earth's radius, enhancing it with visual elements like markers, lines, labels, and gridlines to make the visualization informative and engaging.