



Gauge Charts in Python

How to make gauge meter charts in Python with Plotly.

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Basic Gauge

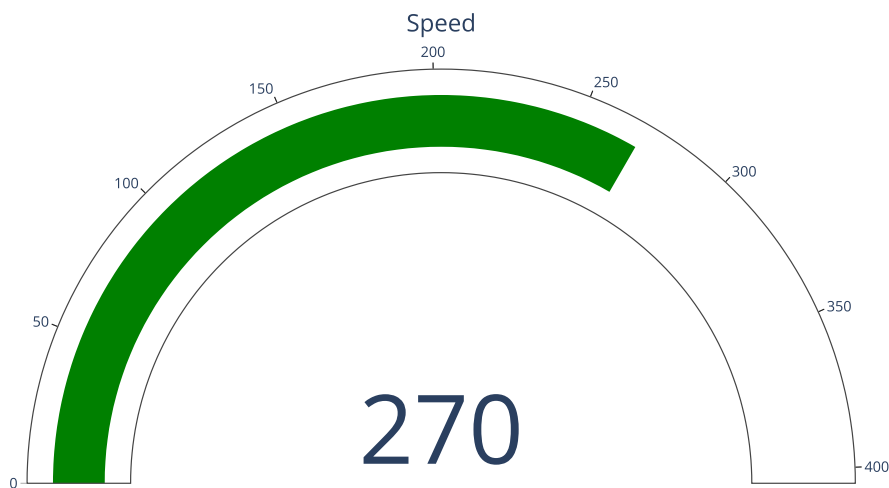
A radial gauge chart has a circular arc, which displays a single value to estimate progress toward a goal. The bar shows the target value, and the shading represents the progress toward that goal. Gauge charts, known as speedometer charts as well. This chart type is usually used to illustrate key business indicators.

The example below displays a basic gauge chart with default attributes. For more information about different added attributes check [indicator](https://plotly.com/python/indicator/) (<https://plotly.com/python/indicator/>) tutorial.

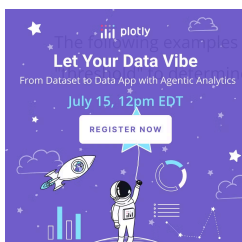
```
import plotly.graph_objects as go

fig = go.Figure(go.Indicator(
    mode = "gauge+number",
    value = 270,
    domain = {'x': [0, 1], 'y': [0, 1]},
    title = {'text': "Speed"}))

fig.show()
```



Add Steps, Threshold, and Delta

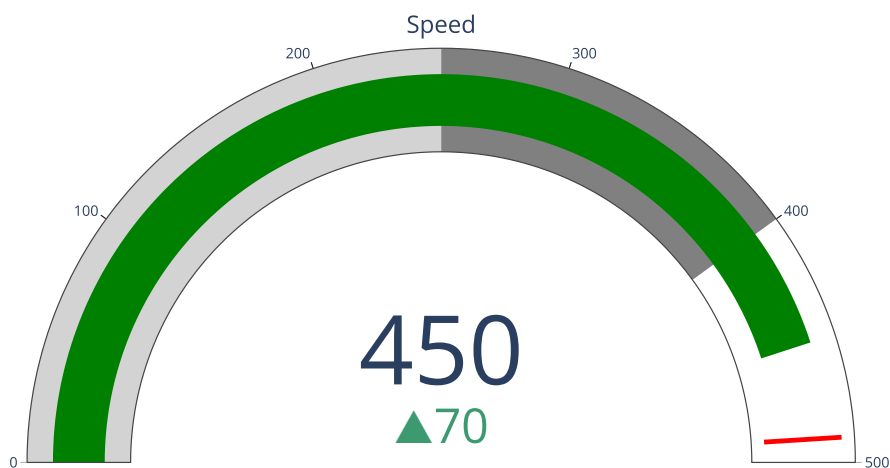


include "steps" attribute shown as shading inside the radial arc, "delta" which is the difference of the value and goal (reference - value), and "threshold" attribute which sets the boundaries that visually alert you if the value cross a defined threshold.

```
import plotly.graph_objects as go

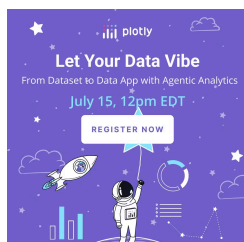
fig = go.Figure(go.Indicator(
    domain = {'x': [0, 1], 'y': [0, 1]},
    value = 450,
    mode = "gauge+number+delta",
    title = {'text': "Speed"},
    delta = {'reference': 380},
    gauge = {'axis': {'range': [None, 500]},
            'steps': [
                {'range': [0, 250], 'color': "lightgray"},
                {'range': [250, 400], 'color': "gray"},
            ],
            'threshold': {'line': {'color': "red", 'width': 4}, 'thickness': 0.75, 'value': 490}}))

fig.show()
```



Custom Gauge Chart

The following example shows how to style your gauge charts. For more information about all possible options check our [reference page](https://plotly.com/python/reference/indicator/) (<https://plotly.com/python/reference/indicator/>).

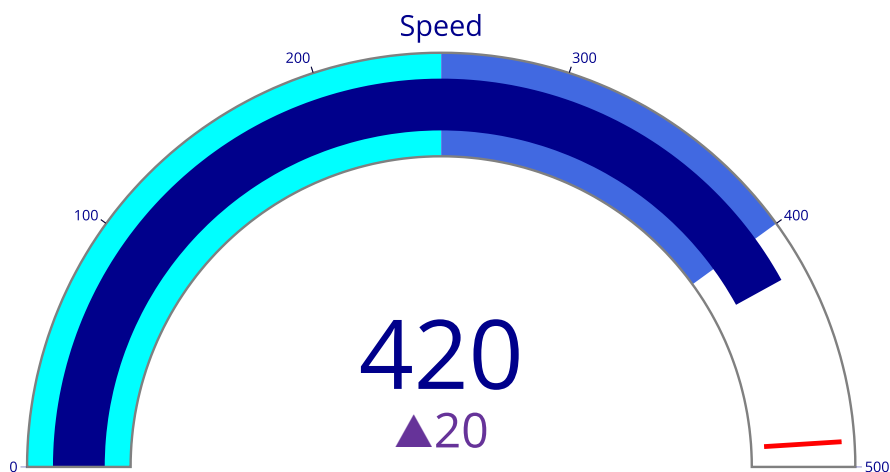


```
import plotly.graph_objects as go

fig = go.Figure(go.Indicator(
    mode = "gauge+number+delta",
    value = 420,
    domain = {'x': [0, 1], 'y': [0, 1]},
    title = {'text': "Speed", 'font': {'size': 24}},
    delta = {'reference': 400, 'increasing': {'color': "RebeccaPurple"}},
    gauge = {
        'axis': {'range': [None, 500], 'tickwidth': 1, 'tickcolor': "darkblue"},
        'bar': {'color': "darkblue"},
        'bgcolor': "white",
        'borderwidth': 2,
        'bordercolor': "gray",
        'steps': [
            {'range': [0, 250], 'color': 'cyan'},
            {'range': [250, 400], 'color': 'royalblue'}],
        'threshold': {
            'line': {'color': "red", 'width': 4},
            'thickness': 0.75,
            'value': 490}}))

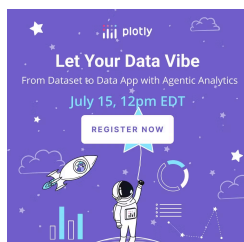
fig.update_layout(paper_bgcolor = "lavender", font = {'color': "darkblue", 'family': "Arial"})

fig.show()
```



Reference

See <https://plotly.com/python/reference/indicator/> (<https://plotly.com/python/reference/indicator/>) for more information and chart attribute options!



What About Dash?

Dash (<https://dash.plot.ly/>) is an open-source framework for building analytical applications, with no Javascript required, and it is tightly integrated with the Plotly graphing library.

Learn about how to install Dash at <https://dash.plot.ly/installation> (<https://dash.plot.ly/installation>).


Everywhere in this page that you see `fig.show()`, you can display the same figure in a Dash application by passing it to the `figure` argument of the `Graph` component (<https://dash.plot.ly/dash-core-components/graph>) from the built-in `dash_core_components` package like this:

```
import plotly.graph_objects as go # or plotly.express as px
fig = go.Figure() # or any Plotly Express function e.g. px.bar(...)
# fig.add_trace( ... )
# fig.update_layout( ... )

from dash import Dash, dcc, html

app = Dash()
app.layout = html.Div([
    dcc.Graph(figure=fig)
])

app.run(debug=True, use_reloader=False) # Turn off reloader if inside Jupyter
```



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pop

lifeExp

gdpPerCap

country	pop	continent	lifeExp	gdpPerCap
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Albania	3600523	Europe	76.423	5937.829525999999
Algeria	33333216	Africa	72.381	6223.367465
Angola	12420476	Africa	42.731	4707.231267
Argentina	40301927	Americas	75.32	12779.37964
Australia	20434176	Oceania	81.235	34435.367439999995
Austria	8199783	Europe	79.829	36126.4927
Bahrain	706573	Asia	75.635	29796.04834
Bangladesh	150448339	Asia	64.062	1701.253792
Belgium	10391226	Europe	79.441	33062.04908
Benin	8878314	Africa	56.728	1441.284873
Bolivia	9119152	Americas	65.554	3821.137884



(https://dash.plotly.com/tutorial?utm_medium=graphing_libraries&utm_content=python_footer)

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