Built-in Continuous Color Scales in Python

A reference for the built-in named continuous (sequential, diverging and cyclical) color scales in Plotly.

New to Plotly?

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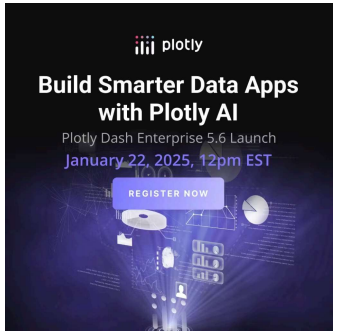

Using Built-In Continuous Color Scales

Many Plotly Express functions accept a color_continuous_scale argument and many trace types have a colorscale attribute in their schema. Plotly comes with a large number of built-in continuous color scales, which can be referred to in Python code when setting the above arguments, either by name in a case-insensitive string e.g. px.scatter(color_continuous_scale="Viridis") or by reference e.g. go.Scatter(marker_colorscale=plotly.colors.sequential.Viridis). They can also be reversed by adding _r at the end e.g. "Viridis_r" or plotly.colors.sequential.Viridis_r.

The plotly.colours module is also available under plotly.express.colors so you can refer to it as px.colors.

When using continuous color scales, you will often want to configure various aspects of its range and colorbar (/python/colorscales/).

Discrete Color Sequences

Plotly also comes with some built-in discrete color sequences (/python/discrete-color/) which are *not intended* to be used with the color_continuous_scale argument as they are not designed for interpolation to occur between adjacent colors.

Named Built-In Continuous Color Scales

You can use any of the following names as string values to set continuous_color_scale or colorscale arguments. These strings are case-insensitive and you can append _r to them to reverse the order of the scale.

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```
import plotly.express as px
from textwrap import wrap

named_colorscales = px.colors.named_colorscales()
print("\n".join(wrap("".join('{:<12}'.format(c) for c in named_colorscales), 96)))
```

```
aggrnyl   agsunset  blackbody  bluered   blues     blugrn    bluyl     brwnyl
bugn      bupu      burg       burgyl    cividis   darkmint  electric  emrld
gnbu      greens    greys      hot       inferno   jet       magenta   magma
mint      orrd      oranges    oryel     peach     pinkyl    plasma    plotly3
pubu      pubugn    purd       purp      purples   purpor    rainbow   rdbu
rdpu      redor     reds       sunset    sunsetdark teal     tealgrn   turbo
viridis   ylgn      ylgnbu     ylorbr    ylorrd    algae     amp       deep
dense     gray      haline     ice       matter    solar     speed     tempo
thermal   turbid    armyrose   brbg      earth     fall      geyser    prgn
piyg      picnic    portland   puor      rdgy      rdylbu    rdylgn    spectral
tealrose  temps     tropic     balance   curl      delta     oxy       edge
hsv       icefire   phase      twilight  mrybm     mygbm
```

Built-in color scales are stored as lists of CSS colors:

```
import plotly.express as px

print(px.colors.sequential.Plasma)
```

```
['#0d0887', '#46039f', '#7201a8', '#9c179e', '#bd3786', '#d8576b', '#ed7953', '#fb9f3a', '#fdca26', '#f0f921']
```

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Continuous Color Scales in Dash

Dash (https://plotly.com/dash/) is the best way to build analytical apps in Python using Plotly figures. To run the app below, run pip install dash, click "Download" to get the code and run python app.py.

Get started with the official Dash docs (https://dash.plotly.com/installation) and **learn how to effortlessly** style (https://plotly.com/dash/design-kit/) **&** deploy (https://plotly.com/dash/app-manager/) **apps like this with** Dash Enterprise (https://plotly.com/dash/)**.**

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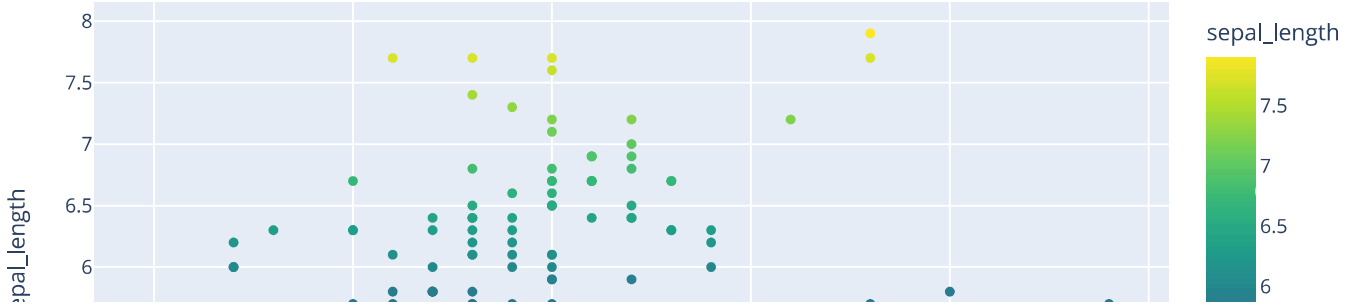
```
from dash import Dash, dcc, html, Input, Output
import plotly.express as px

colorscales = px.colors.named_colorscales()

app = Dash(__name__)


app.layout = html.Div([
    html.H4('Interactive Plotly Express color scale selection'),
    html.P("Color Scale"),
    dcc.Dropdown(
        id='dropdown',
        options=colorscales,
        value='viridis'
    ),
    dcc.Graph(id="graph"),
])


@app.callback(
    Output("graph", "figure"),
    Input("dropdown", "value"))
def change_colorscale(scale):
    df = px.data.iris() # replace with your own data source
```

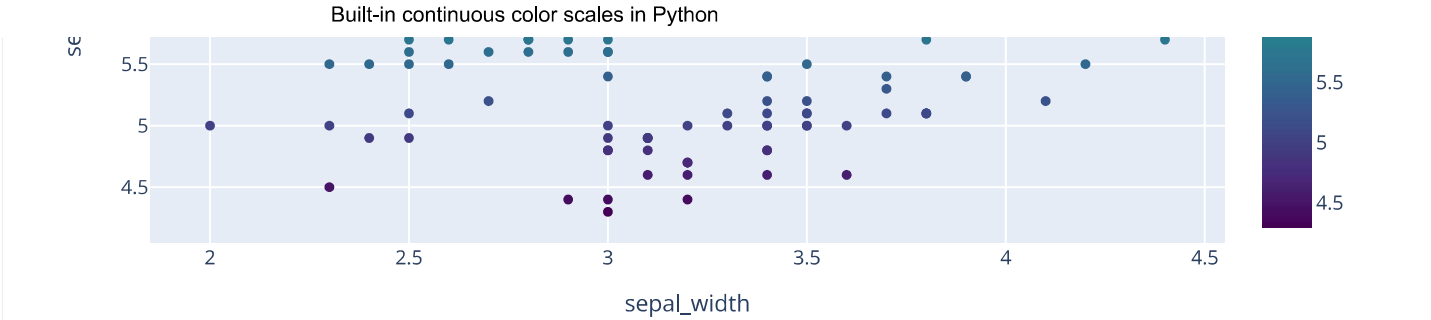
DOWNLOAD

Interactive Plotly Express color scale selection

Color Scale

viridis





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Built-In Sequential Color scales

A collection of predefined sequential colorscales is provided in the plotly.colors.sequential module. Sequential color scales are appropriate for most continuous data, but in some cases it can be helpful to use a diverging or cyclical color scale (see below).

Here are all the built-in scales in the plotly.colors.sequential module:

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```
import plotly.express as px

fig = px.colors.sequential.swatches_continuous()
fig.show()
```

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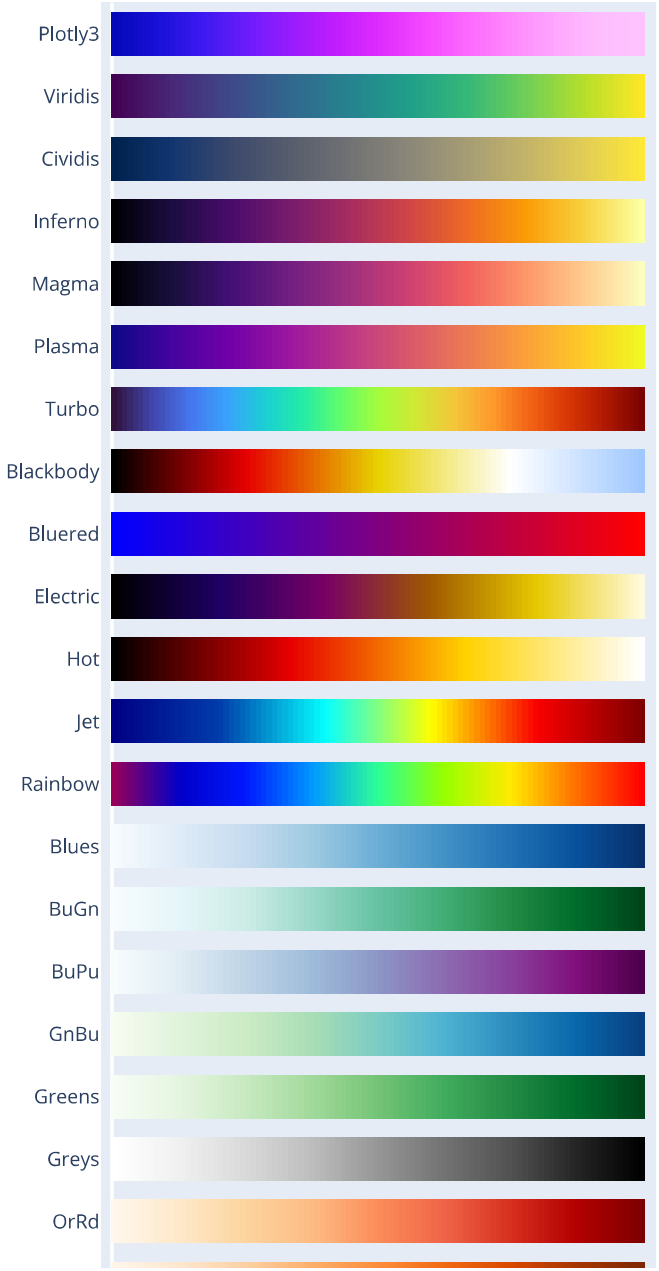
plotly.colors.sequential



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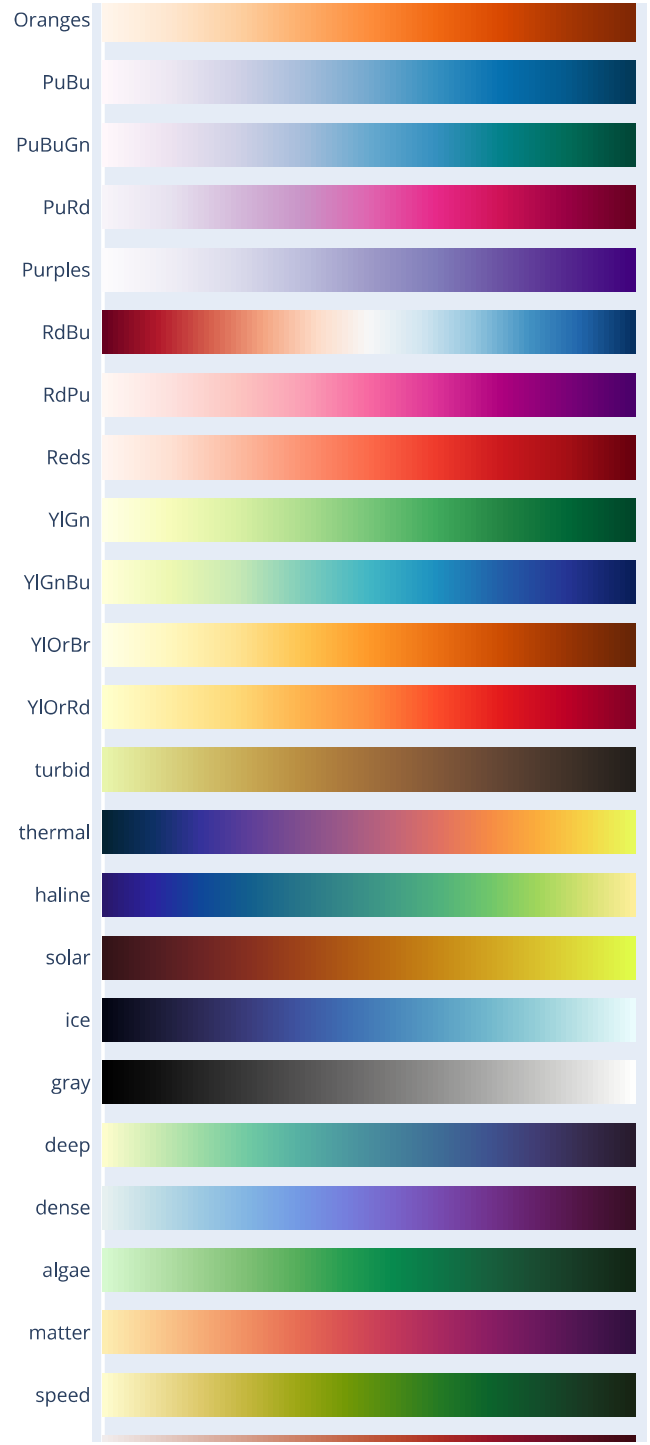

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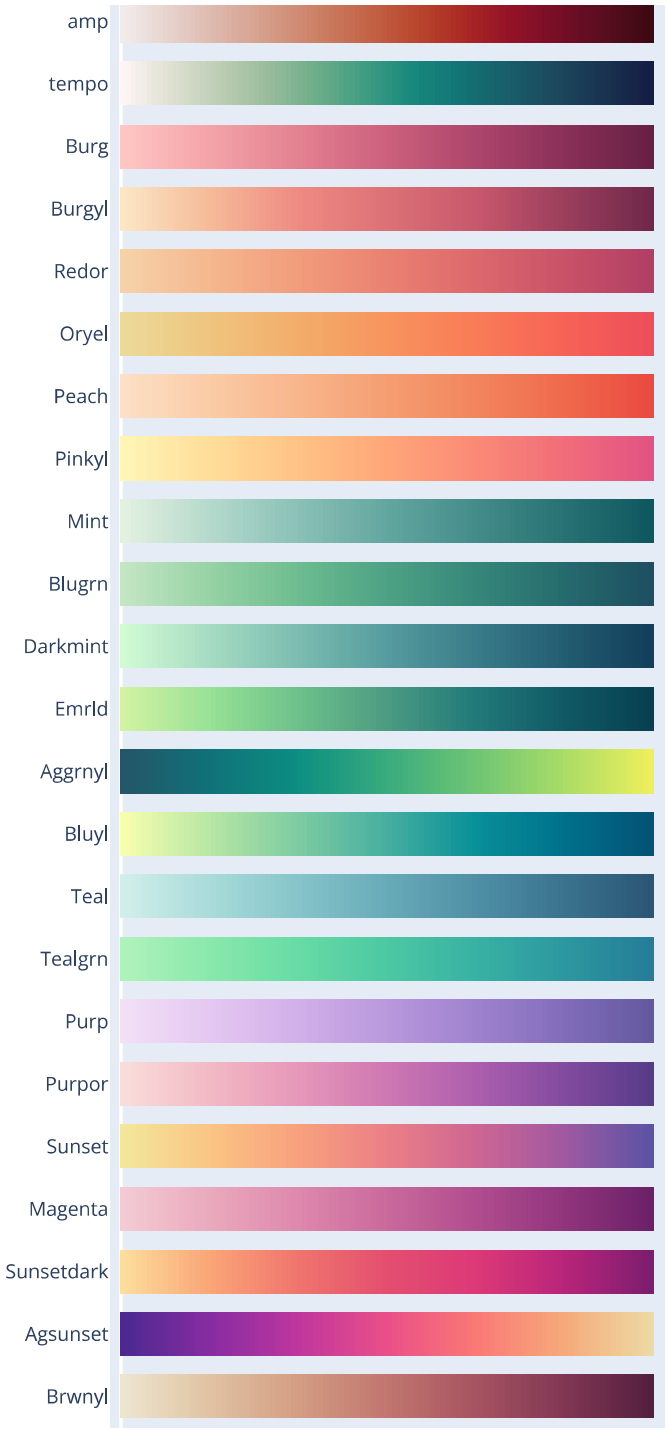

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Note: RdBu was included in the sequential module by mistake, even though it is a diverging color scale. It is intentionally left in for backwards-compatibility reasons.

Built-In Diverging Color scales

A collection of predefined diverging color scales is provided in the plotly.colors.diverging module. Diverging color scales are appropriate for continuous data that has a natural midpoint other otherwise informative special value, such as 0 altitude, or the boiling point of a liquid. These scales are intended to be used when explicitly setting the midpoint of the scale (/python/colorscales/#setting-the-midpoint-of-a-color-range-for-a-diverging-color-scale).

Here are all the built-in scales in the plotly.colors.diverging module:

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```
import plotly.express as px

fig = px.colors.diverging.swatches_continuous()
fig.show()
```

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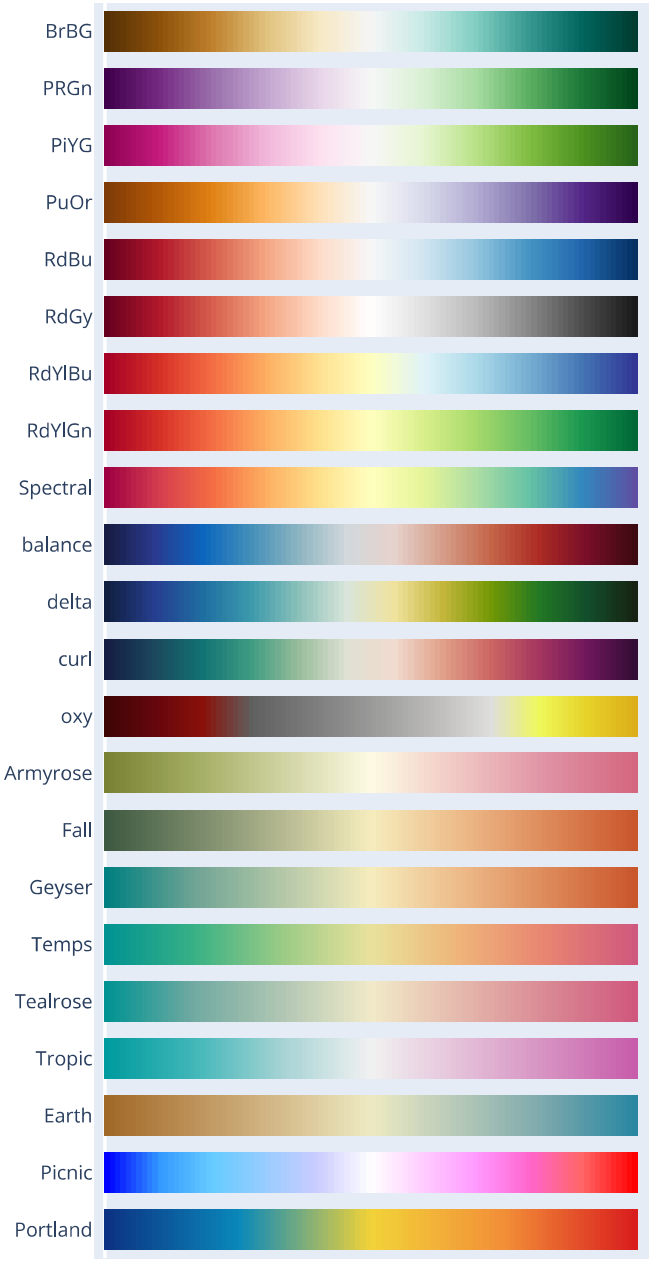
plotly.colors.diverging



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Built-In Cyclical Color scales

A collection of predefined cyclical color scales is provided in the plotly.colors.cyclical module. Cyclical color scales are appropriate for continuous data that has a natural cyclical structure, such as temporal data (hour of day, day of week, day of year, seasons) or complex numbers or other phase or angular data.

Here are all the built-in scales in the plotly.colors.cyclical module:

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```
import plotly.express as px

fig = px.colors.cyclical.swatches_cyclical()
fig.show()

fig = px.colors.cyclical.swatches_continuous()
fig.show()
```

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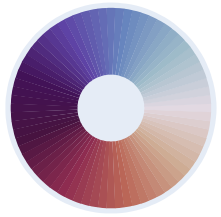
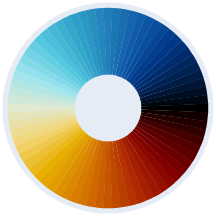
plotly.colors.cyclical

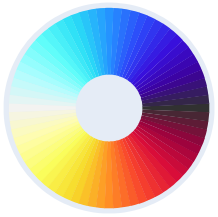
Twilight



IceFire

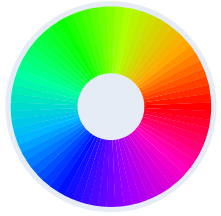


Edge

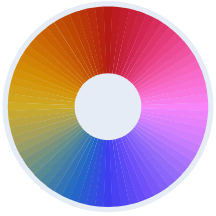


Phase

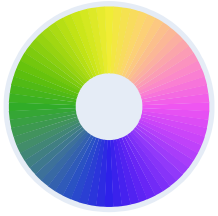
HSV



mrybm



mygbm



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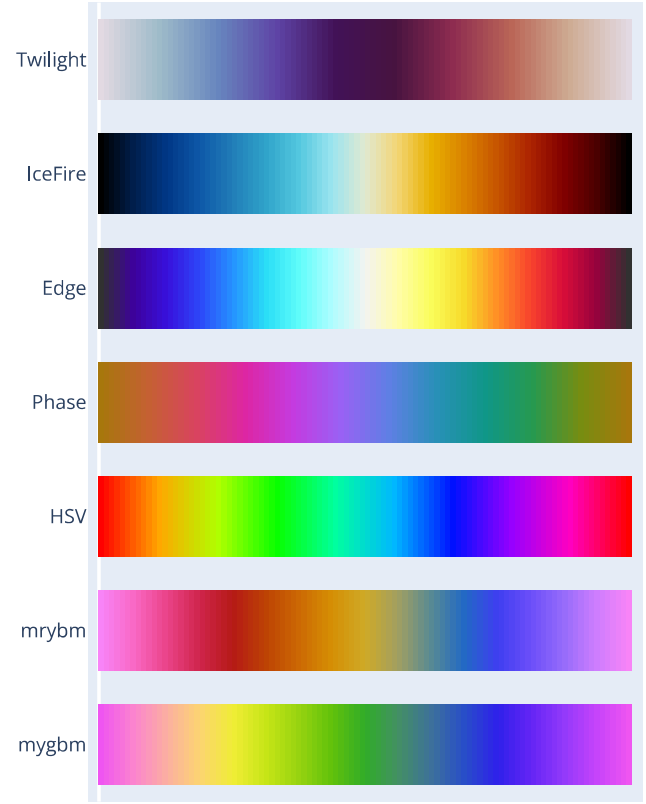
plotly.colors.cyclical



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

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