Largest Companies Project

In this project you will learn how to structure your projects in Dash, use core components and use csv file with Dash.

1. Open Terminal or CMD
2. Create new project —> mkdir largestcompanies
3. Get into the largestcompanies directory cd largestcompanies
4. Pip install Install virtualenv
5. To Initialize virtualenv venv in the folder largestcompanies
6. Activate virtualenv source venv/bin/activate for venv/Scripts/activate
7. If virtual environment activated you should see (venv)
8. Install Dash -> pip install dash
9. Install dash-bootstrap -> pip install dash-bootstrap-components
10. Install pandas -> pip install pandas
11. Install Plotly -> pip install plotly
12. pip freeze will show all libraries installed in virtualenvironment
13. Write all the libraries into requirements.txt pip freeze > requirements.txt
14. Create main.py

15. In main.py import dash from dash import Dash

1. Import Bootstrap

import dash\_bootstrap\_componennts as dbc

1. Create function main
2. Initialize an instance of the app

def main():

app = Dash(external\_stylesheets=[dbc.themes.COSMO])

if \_\_name\_\_=="\_\_main\_\_":

main()

1. Add title

app.title = "Largest Companies"

1. Add

app.run()

1. Add layout

app.layout = html.H1("Hello!")

1. Python main.py to run local server
2. Open ip in the browser
3. Nest layout with more elements

app.layout = html.Div(

className="app-div",

children=[

html.H1("Hello!"),

html.Hr(),

html.H6("My new Dash app!")

]

)

1. Create layout.py

And move html.Div there

from dash import Dash, html

def create\_layout(app):

return html.Div(

className="app-div",

children=[

html.H1("Hello!"),

html.Hr(),

html.H6("My new Dash app!")

]

)

1. Import layout in main.py

from layout import create\_layout

1. Replace app.layout with create\_layout function

def main():

app = Dash(external\_stylesheets=[dbc.themes.COSMO])

app.title = "Chipotle project"

app.layout = create\_layout(app)

app.run()

1. Move LargestCompanies.csv to largestcompanies folder
2. Create new file call it util.py
3. Import pandas
4. create function get\_data()
5. import pandas as pd
6. PATH = r"/Users/n/largestcompanies/LargestCompanies.csv"
7. def get\_data(PATH):
8. df = pd.read\_csv(PATH)
9. print(df)
10. return df
11. Perform calculations:
12. get 10 largest contries by marketcap by trilllions
13. return df with two columns --> country market\_triilions
14. def get\_contries\_marketcap():
15. df = get\_data(PATH)
16. companies = df.groupby(['country'])['marketcap'].sum()
17. companies.sort\_values(ascending=False, inplace=True)
18. companies = companies.iloc[:10].to\_frame()
19. companies['trillions'] = round(companies['marketcap']/1000000000000,2)
20. companies.reset\_index(inplace=True)
21. return companies
22. Create pie\_chart.py -🡪 new component
23. import from util.py import get\_countries\_marketcap, print DataFrame

30. import

from dash import Dash, html, dcc

import plotly.express as px

from util import get\_contries\_marketcap

32. Create render function

33. Use data revenue to plot pie chart with plotly pie function

def render(app):

df = get\_contries\_marketcap()

fig = px.pie(df, values='trillions', names='country', title='Market cap by country')

return html.Div(dcc.Graph(figure=fig), id="pie\_chart")

35. Include component pie\_chart into layout file

Do not forget to import it

import pie\_chart

def create\_layout(app):

return html.Div(children=[

html.H1("Largest Companies",style={"color":"red"}),

pie\_chart.render(app)

])

37. Save everything

38. Run the server

39. create file bar\_chart.py import plotly.express as px

from dash import Dash, html, dcc

from util import get\_contries\_marketcap

def render\_bar(app):

df = get\_contries\_marketcap()

fig = px.bar(df, x='trillions', y='country', orientation='h')

return html.Div(dcc.Graph(figure=fig),id="Bar\_Chart")

40. add bar\_chart component to layout

from dash import Dash, html

import pie\_chart, bar\_chart

def create\_layout(app):

return html.Div(children=[

html.H1("Largest Companies",style={"color":"red"}),

pie\_chart.render(app),

bar\_chart.render(app)

])

41. create scatter\_chart.py

import plotly.express as px

from dash import Dash, html, dcc

from util import get\_contries\_marketcap

def render(app):

df = get\_contries\_marketcap()

df = df.iloc[1:]

x = df['trillions']

y = df['country']

c = df['marketcap']

s = df['marketcap']

fig = px.scatter(

x=x,

y=y,

color=c,

size=s)

return html.Div(dcc.Graph(figure=fig),id="scatter\_chart")

42. add scatter\_chart into layout

def create\_layout(app):

return html.Div(children=[

html.H1("Largest Companies",style={"color":"red"}),

pie\_chart.render(app),

bar\_chart.render(app),

scatter\_chart.render(app),

])

43. create bar\_v\_chart for vertical bar chart plot

import plotly.express as px

from dash import Dash, html, dcc

from util import get\_contries\_marketcap

def render(app):

df = get\_contries\_marketcap()

fig = px.bar(df, x='country', y='trillions')

return html.Div(dcc.Graph(figure=fig), id="barv\_chart")

44. Add bar\_v\_chart component to layout

from dash import Dash, html

import pie\_chart, bar\_chart,scatter\_chart, bar\_v\_chart

def create\_layout(app):

return html.Div(children=[

html.H1("Largest Companies",style={"color":"red"}),

pie\_chart.render(app),

bar\_chart.render(app),

scatter\_chart.render(app),

bar\_v\_chart.render(app),

])

45. In layout move all the components int components folder

from components import (

pie\_chart,

bar\_chart,

scatter\_chart,

bar\_v\_chart

)

46. Add Row and Col from Dash Bootstrap

from dash import Dash, html

import dash\_bootstrap\_components as dbc

from components import (

pie\_chart,

bar\_chart,

scatter\_chart,

bar\_v\_chart

)

def create\_layout(app):

return html.Div(children=[

dbc.Row([

dbc.Col(pie\_chart.render(app),lg=6),

dbc.Col(bar\_chart.render(app),lg=6),

],className="mt-4"),

dbc.Row([

dbc.Col(scatter\_chart.render(app),lg=6),

dbc.Col(bar\_v\_chart.render(app),lg=6),

], className="mt-4"),

])

47. Add heading and wrap everything in Container element

def create\_layout(app):

heading = html.H1("Largest Companies by Country", className="bg-primary text-white p-2 mb-3")

return dbc.Container(children=[

heading,

dbc.Row([

dbc.Col(pie\_chart.render(app),lg=6),

dbc.Col(bar\_chart.render(app),lg=6),

],className="mt-4"),

dbc.Row([

dbc.Col(scatter\_chart.render(app),lg=6),

dbc.Col(bar\_v\_chart.render(app),lg=6),

], className="mt-4"),

])