

# Advanced Programming with Python. Session 7

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<https://slides.com/pepegar/app-7/live>

# Dash

<https://dash.plot.ly>

Dash is a library for creating data visualizations

## Dash. Layout

We can create HTML layouts directly in Python with Dash

```
import dash_core_components as dcc
import dash_html_components as html

html.Div(children = [
    html.H1("title"),
    dcc.Dropdown(
        id="district",
        options=districts,
        multi=True,
        value=[districts[0]["value"]]
    )
])
```

## Dash. Graphs

```
import dash_core_components as dcc
import dash_html_components as html

dcc.Graph(
    id='first-graph',
    figure={
        'data': [
            {'x': [1, 2, 3], 'y': [4, 1, 2], 'type': 'bar'},
            {'x': [1, 2, 3], 'y': [2, 4, 5], 'type': 'bar'}
        ],
        'layout': {
            'title': 'Dash Data Visualization'
        }
    }
)
```

# Practice

see **session-7/example-1**

## Dash. Callbacks

**callbacks** make our Dash applications interactive. They're functions that whenever an **input** component changes, will change an **output** component

```
@app.callback(  
    Output(component_id="accidents-graph", component_property="val")  
    [Input(component_id="district", component_property="val")  
]  
)  
def update(districts):  
    pass
```

# Practice

let's see

**`example-2-callbacks/simple_callback.py`**



## Practice

But, callbacks can do much more than that, they can modify graphs whenever some component value is changed by the user

let's see

**`example-3-callbacks/more_callbacks.py`**

## Dash. More interesting example

All the examples we've seen so far fairly simple, let's see a more interesting example in

**example-3/server.py**

## Exercise

Modify example-3 so that it filters by  
accident type (**TIPO ACCIDENTE**) too