# To create a dashboard with a proper database using Python, you can follow these steps:

## Step 1: Install necessary libraries

```
In [ ]:    pip install pandas
           pip install dash
           pip install dash-bootstrap-components
           pip install dash-daq
           pip install dash-html-components
           pip install dash-core-components
           pip install dash-table
           pip install flask
           pip install sqlalchemy
```

## Step 2: Create a database using SQLite and SQLAlchemy

```python
In [3]:    from sqlalchemy import create_engine, Column, Integer, String
           from sqlalchemy.ext.declarative import declarative_base

           Base = declarative_base()

           class Example(Base):
               __tablename__ = 'example'
               id = Column(Integer, primary_key=True)
               name = Column(String)
               value = Column(Integer)

           engine = create_engine('sqlite:///example.db')
           Base.metadata.create_all(engine)
```

# Step 3: Create a simple dashboard using Dash

In [8]:
```
pip install dash
```

```
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: dash in c:\users\purnangshu roy\appdata\roaming\python\python311\site-packages (2.18.1)
Requirement already satisfied: Flask<3.1,>=1.0.4 in c:\programdata\anaconda3\lib\site-packages (from dash) (2.2.2)
Requirement already satisfied: Werkzeug<3.1 in c:\programdata\anaconda3\lib\site-packages (from dash) (2.2.3)
Requirement already satisfied: plotly>=5.0.0 in c:\programdata\anaconda3\lib\site-packages (from dash) (5.9.0)
Requirement already satisfied: dash-html-components==2.0.0 in c:\users\purnangshu roy\appdata\roaming\python\python311\site-pack
ages (from dash) (2.0.0)
Requirement already satisfied: dash-core-components==2.0.0 in c:\users\purnangshu roy\appdata\roaming\python\python311\site-pack
ages (from dash) (2.0.0)
Requirement already satisfied: dash-table==5.0.0 in c:\users\purnangshu roy\appdata\roaming\python\python311\site-packages (from
dash) (5.0.0)
Requirement already satisfied: importlib-metadata in c:\programdata\anaconda3\lib\site-packages (from dash) (6.0.0)
Requirement already satisfied: typing-extensions>=4.1.1 in c:\programdata\anaconda3\lib\site-packages (from dash) (4.7.1)
Requirement already satisfied: requests in c:\users\purnangshu roy\appdata\roaming\python\python311\site-packages (from dash)
(2.32.3)
Requirement already satisfied: retrying in c:\users\purnangshu roy\appdata\roaming\python\python311\site-packages (from dash)
(1.3.4)
Requirement already satisfied: nest-asyncio in c:\programdata\anaconda3\lib\site-packages (from dash) (1.5.6)
Requirement already satisfied: setuptools in c:\programdata\anaconda3\lib\site-packages (from dash) (68.0.0)
Requirement already satisfied: Jinja2>=3.0 in c:\programdata\anaconda3\lib\site-packages (from Flask<3.1,>=1.0.4->dash) (3.1.2)
Requirement already satisfied: itsdangerous>=2.0 in c:\programdata\anaconda3\lib\site-packages (from Flask<3.1,>=1.0.4->dash)
(2.0.1)
Requirement already satisfied: click>=8.0 in c:\programdata\anaconda3\lib\site-packages (from Flask<3.1,>=1.0.4->dash) (8.0.4)
Requirement already satisfied: tenacity>=6.2.0 in c:\programdata\anaconda3\lib\site-packages (from plotly>=5.0.0->dash) (8.2.2)
Requirement already satisfied: MarkupSafe>=2.1.1 in c:\programdata\anaconda3\lib\site-packages (from Werkzeug<3.1->dash) (2.1.1)
Requirement already satisfied: zipp>=0.5 in c:\programdata\anaconda3\lib\site-packages (from importlib-metadata->dash) (3.11.0)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\programdata\anaconda3\lib\site-packages (from requests->dash) (2.
0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\programdata\anaconda3\lib\site-packages (from requests->dash) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\programdata\anaconda3\lib\site-packages (from requests->dash) (1.26.16)
Requirement already satisfied: certifi>=2017.4.17 in c:\programdata\anaconda3\lib\site-packages (from requests->dash) (2023.7.2
2)
Requirement already satisfied: six>=1.7.0 in c:\programdata\anaconda3\lib\site-packages (from retrying->dash) (1.16.0)
Requirement already satisfied: colorama in c:\programdata\anaconda3\lib\site-packages (from click>=8.0->Flask<3.1,>=1.0.4->dash)
(0.4.6)
Note: you may need to restart the kernel to use updated packages.
```

In [11]:
```python
import dash
from dash import html, dcc, Input, Output
import pandas as pd

app = dash.Dash(__name__)

app.layout = html.Div([
    html.H1('Dashboard with Database', style={'textAlign': 'center'}),

    dcc.Input(id='input-name', type='text', placeholder='Enter Name'),
    dcc.Input(id='input-value', type='number', placeholder='Enter Value'),
    html.Button('Submit', id='submit-button', n_clicks=0),

    html.Br(),

    html.Div(id='output-message'),
])

@app.callback(
    Output('output-message', 'children'),
    Input('submit-button', 'n_clicks'),
    [Input('input-name', 'value'), Input('input-value', 'value')]
)
def update_output(n_clicks, input_name, input_value):
    if n_clicks > 0:
        engine.execute(Example.__table__.insert(), [{'name': input_name, 'value': input_value}])
        return f'Data successfully added to database: Name - {input_name}, Value - {input_value}'
    else:
        return ''

if __name__ == '__main__':
    app.run_server(debug=True)
```

In [ ]: