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Dash-Python-IRIS

We are happy to share interesting information with you, as well as tell you why Python is good, where it is used.

Among the most used libraries are NumPy and Pandas. NumPy (Numerical Python) is used to sort large datasets. It simplifies mathematical operations and their vectorization on arrays. Pandas offers two data structures: Series (a list of elements) and Data Frames (a table with multiple columns). This library converts data into a Data Frame, allowing you to remove and add new columns, as well as perform various operations.

Python offers countless tools for data analysis projects and can help with any task along the way.

Advantages and disadvantages of Python for data analysis:

It is almost impossible to find the perfect language for data analysis, as each has its own advantages and disadvantages. One is better for visualization, while the other works better with large amounts of data. The choice also depends on the personal preferences of the developer

Benefits of Python - Great Community:

Programming has never been easy and even developers with a lot of experience run into problems. Fortunately, every language has a community to help you find the right solutions. On GitHub, for example, there are more than 90,000 repositories with Python projects. Therefore, you can almost always find the answer to your question. The main framework used by this Dash application.

Backend

The main framework used by this Dash application. Dash downloaded 600,000 times per month, Dash is the original low-code framework for rapidly building data apps. Written on top of Plotly.js and React.js, Dash is ideal for building and deploying data apps with customized user interfaces. It's particularly suited for anyone who works with data. Through a couple of simple patterns, Dash abstracts away all of the technologies and protocols that are required to build a full-stack web app with interactive data visualization. Dash apps are rendered in the web browser. You can deploy your apps to VMs or Kubernetes clusters and then share them through URLs. Since Dash apps are viewed in the web browser, Dash is inherently cross-platform and mobile ready.

Example use IRIS and Dash:

```
import iris
import plotly.express as px

query = "SELECT location, CAST(total_cases AS int) as total_cases FROM Data.Covid19 WHERE continent != ''"
df = iris.sql.exec(query).dataframe().sort_values(by=['total_cases'], ascending=False)

fig = px.bar(df.head(10), x="location", y="total_cases", barmode="group", text_auto='.3s')
fig.update_traces(textfont_size=12, textangle=0, textposition="outside", cliponaxis=False)
fig.update_layout(height=330)
fig.show()
```
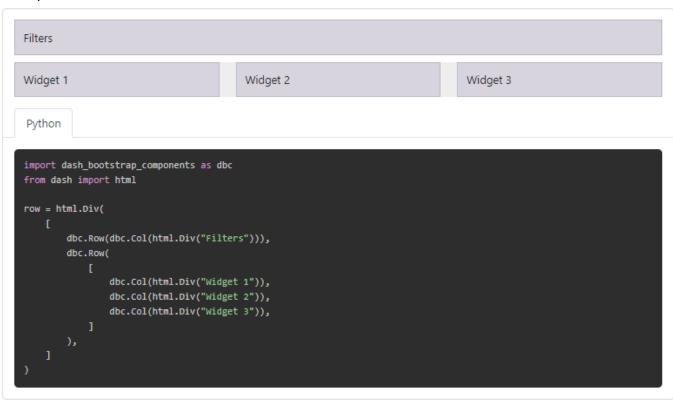
Frontend

For the frontend, the "dash-bootstrap-components" library was used. Dash-bootstrap-components is a library of Bootstrap components for Plotly Dash, that makes it easier to build consistently styled apps with complex, responsive layouts.

Example:

```python
import dash_bootstrap_components as dbc
from dash import html

row = html.Div(
    [
        dbc.Row(dbc.Col(html.Div("Filters"))),
        dbc.Row(
            [
                dbc.Col(html.Div("Widget 1")),
                dbc.Col(html.Div("Widget 2")),
                dbc.Col(html.Div("Widget 3")),
            ]
        ),
    ]
)
```

#Dashboards #Embedded Python #IRIS Analytics Architect #Python #InterSystems IRIS

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Source URL: https://community.intersystems.com/post/dash-python-iris