Sprint 3

Crop Yield Analysis and Visualization

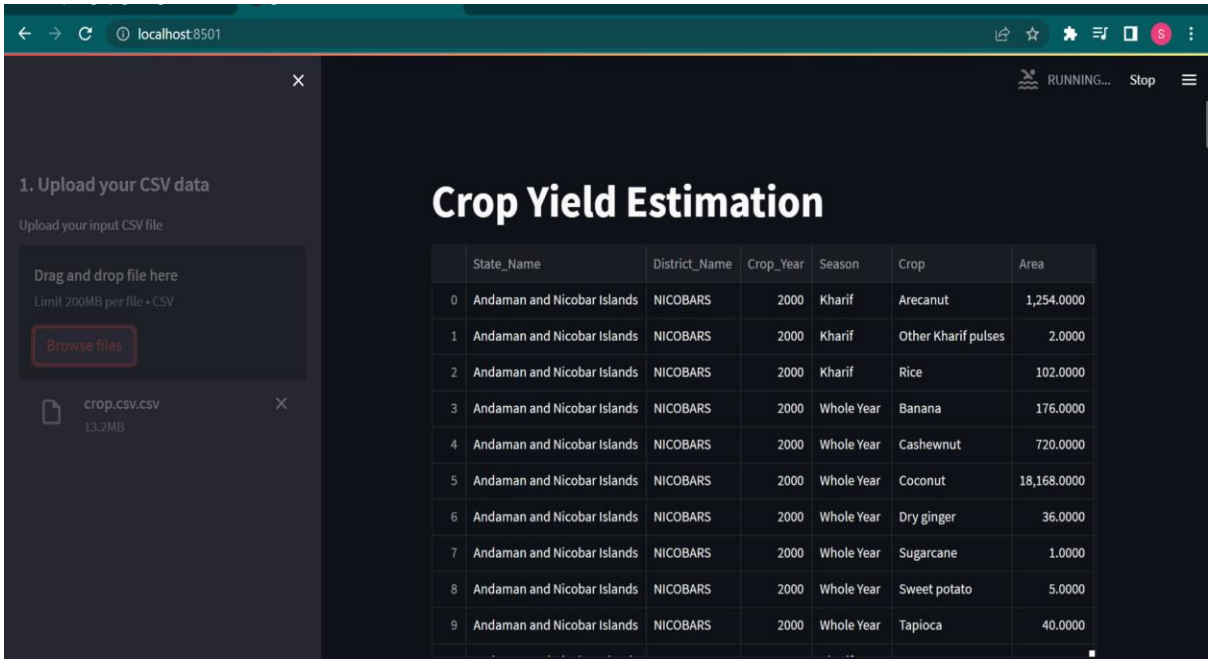
Code:

```
import streamlit as st
import numpy as np
import pandas as pd
#import plotly.figure_factory as ff
import plotly.express as px
import matplotlib.pyplot as plt
import seaborn as sns
from pandas_profiling import ProfileReport
from streamlit_pandas_profiling import
st_profile_report
import pickle
from pathlib import Path
import streamlit_authenticator as stauth  # pip install
streamlit-authenticator

def main():

    st.title("Crop Yield Estimation")
    df=pd.read_csv("crop.csv.csv")
    st.dataframe(df)
    fig1=plt.figure(figsize =(10, 4))
```

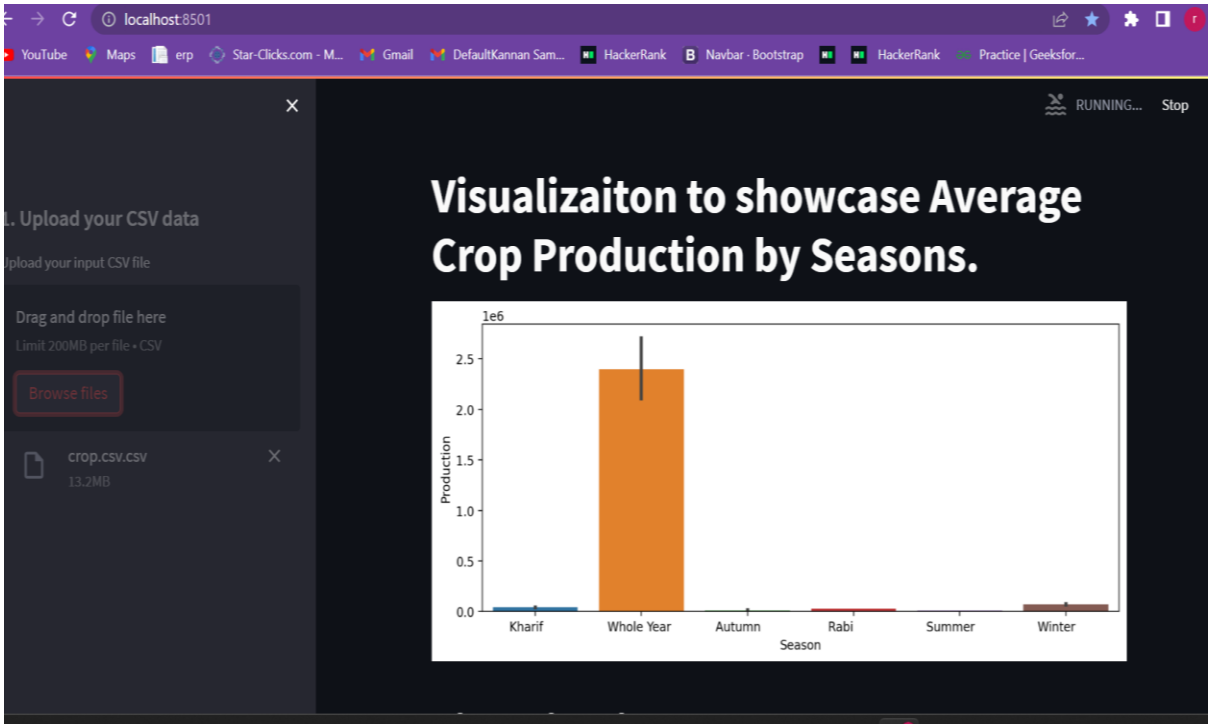
```
    st.title("Visualizaiton to showcase Average Crop
Production by Seasons.")
    sns.barplot(x="Season",y="Production",data=df)
    st.pyplot(fig1)
     grouped_single.sort_values(("Area", "sum"))
    last=grouped_single.sort_values(("Area",
"sum")).tail(10)
    fig2=plt.figure(figsize =(10, 4))
    courses=["Punjab","Bihar","Andhra
Pradesh","Gujarat","Karnataka","West
Bengal","Rajasthan","Maharashtra","Madhya
Pradesh","Uttar Pradesh"]


values=[4.336316e+08,3.298131e+08,3.222062e+08,2.
720249e+08,2.154052e+08,2.029101e+08,1.549440e+
08,1.315458e+08,1.282720e+08,1.267256e+08]
    st.title(" visualization to show case top 10 States in
Crop Yeild Production by Area.")
    sns.barplot(x=courses,y=values)
    #plt.title("Top 10 States With Most
Area",fontsize=20)


    st.pyplot(fig2)


    fig3 = plt.figure(figsize =(10, 4))
```

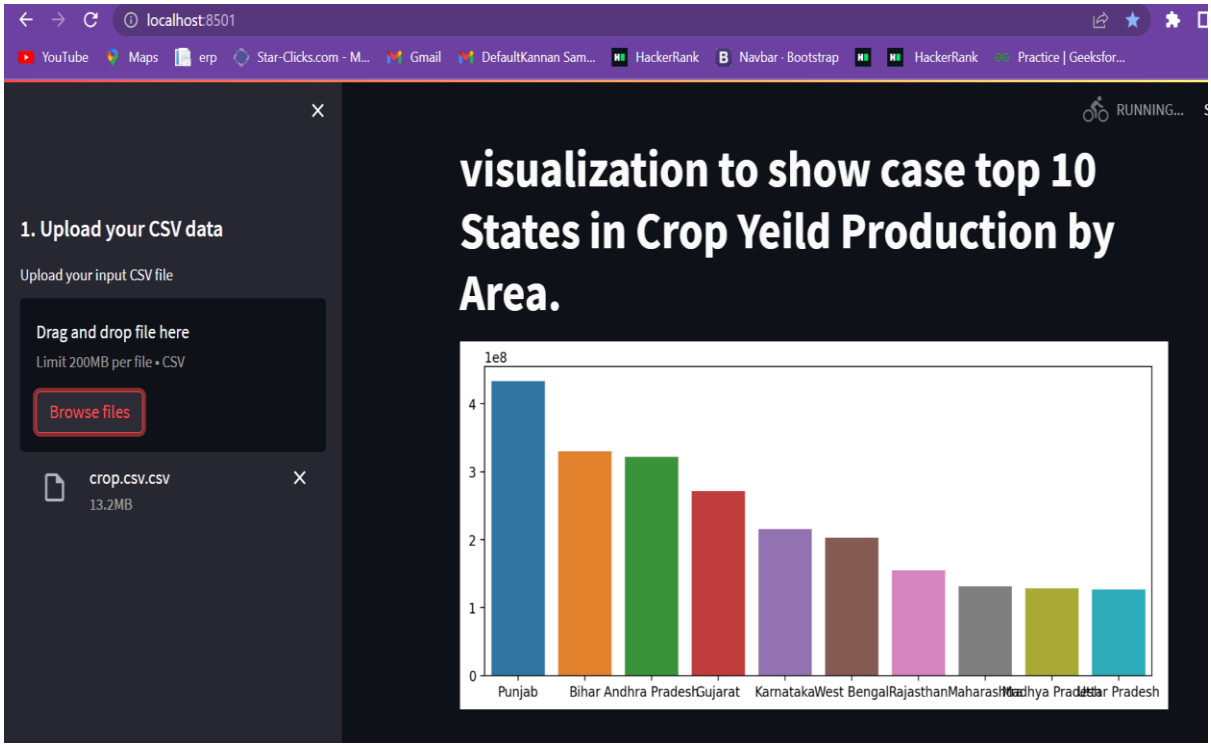
```
    sns.lineplot(df['Crop_Year'],df['Production'])
    st.title("Yearly usage of Area in Crop Production.")
    st.pyplot(fig3)


    fig4 = plt.figure(figsize =(10, 4))
    grp =
df.groupby("Crop_Year")["Area"].sum().sort_index(asc
ending=True)
    grp.plot(kind = 'area')
    st.title(" Area plot.")
    plt.xlabel("Year",fontsize=20)
    plt.ylabel("Area",fontsize=20)
    st.pyplot(fig4)


    fig5 =px.sunburst(df, path=['State_Name', 'Crop'],
values='Production')
    plt.figure(figsize =(10, 4))

    st.plotly_chart(fig5)
    plt.title("State With Crop Production",fontsize=20)
```

Output



	State_Name	District_Name	Crop_Year	Season	Crop	Area
0	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Arecanut	1,254.0000
1	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Other Kharif pulses	2.0000
2	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Rice	102.0000
3	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Banana	176.0000
4	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Cashewnut	720.0000
5	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Coconut	18,168.0000
6	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Dry ginger	36.0000
7	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Sugarcane	1.0000
8	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Sweet potato	5.0000
9	Andaman and Nicobar Islands	NICOBARS	2000	Whole Year	Tapioca	40.0000

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HackerRank
Navbar · Bootstrap
HackerRank
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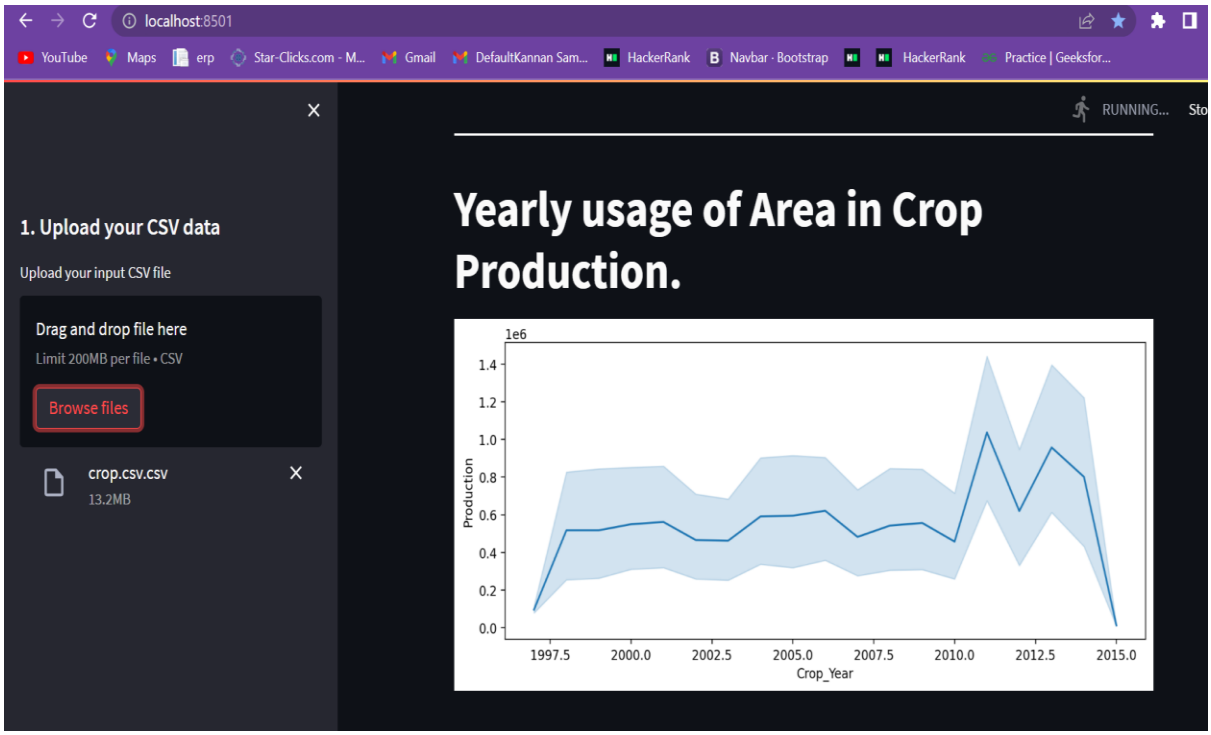
RUNNING...
1. Upload your CSV data
Upload your input CSV file
Drag and drop file here
Limit 200MB per file • CSV
Browse files
crop.csv.csv
13.2MB
visualization to show case top 10 States in Crop Yeild Production by Area.
1e8
4
3
2
1
0
Punjab
Bihar
Andhra Pradesh
Gujarat
Karnataka
West Bengal
Rajasthan
Maharashtra
Madhya Pradesh
Uttar Pradesh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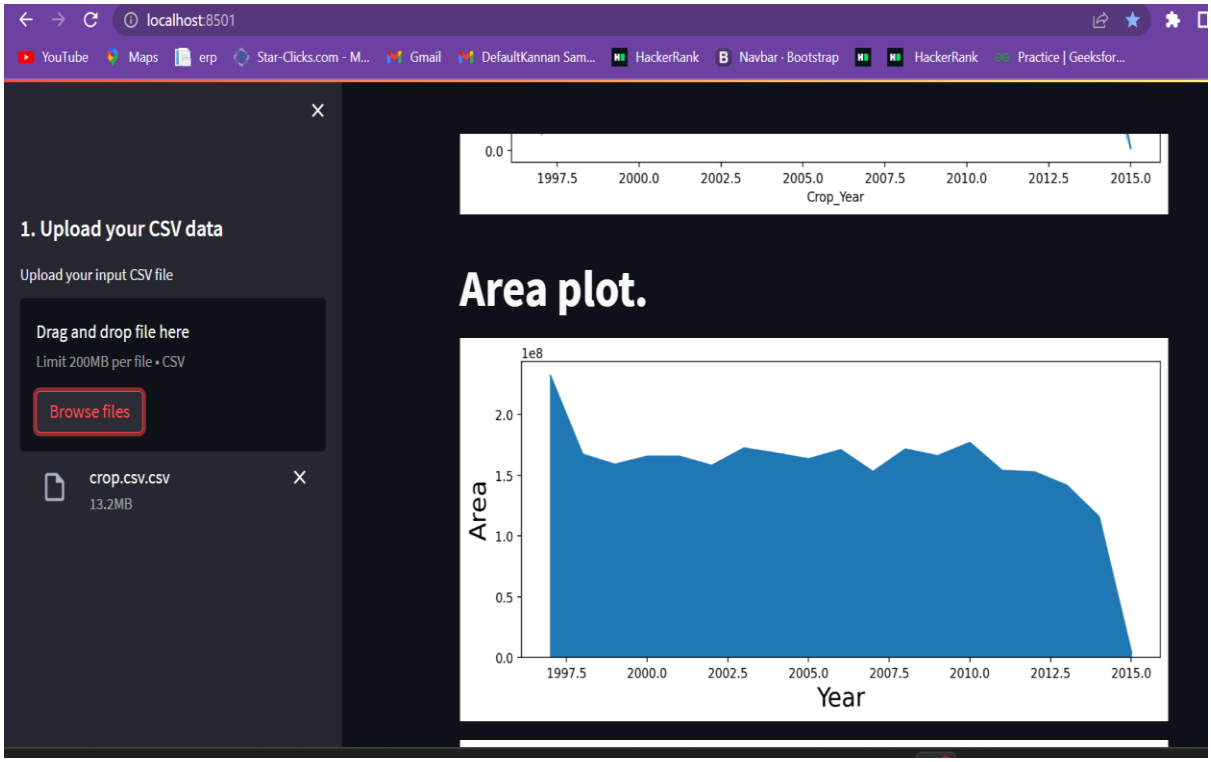
RUNNING...
1. Upload your CSV data
Upload your input CSV file
Drag and drop file here
Limit 200MB per file • CSV
Browse files
crop.csv.csv
13.2MB
Yearly usage of Area in Crop Production.
1e6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Production
1997.5
2000.0
2002.5
2005.0
2007.5
2010.0
2012.5
2015.0
Crop_Year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1. Upload your CSV data
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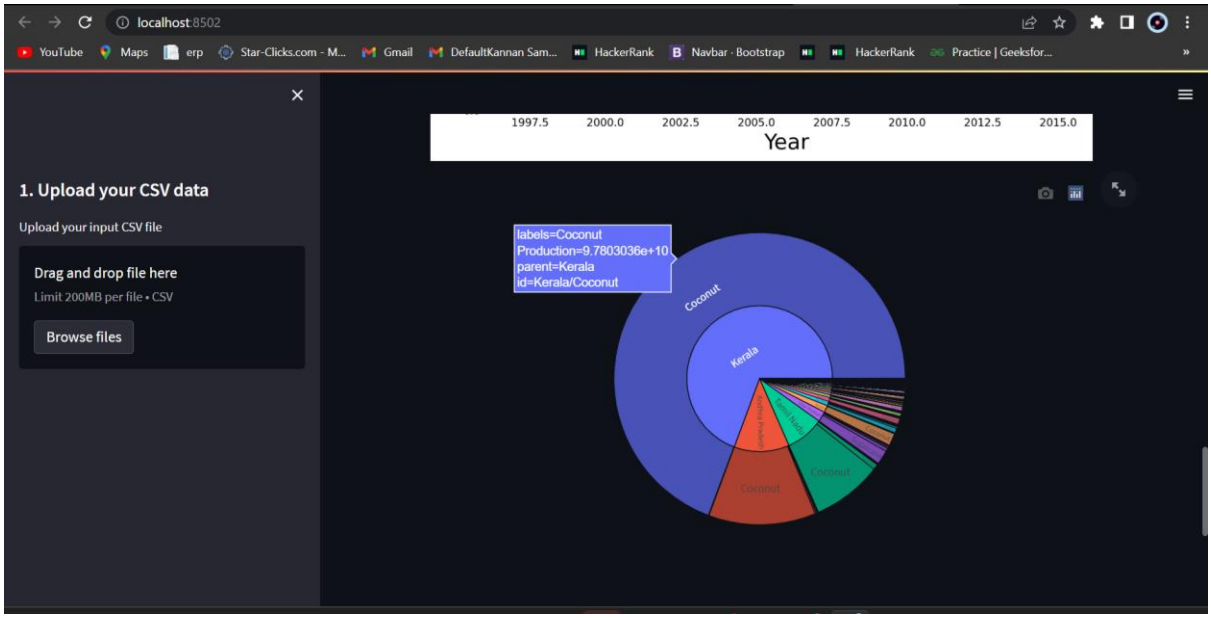
Limit 200MB per file • CSV
Browse files
crop.csv.csv
13.2MB
0.0
1997.5
2000.0
2002.5
2005.0
2007.5
2010.0
2012.5
2015.0
Crop_Year
Area plot.
1e8
2.0
1.5
1.0
0.5
0.0
Area
Year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HackerRank
Navbar · Bootstrap
HackerRank
Practice | Geeksfor...
1. Upload your CSV data
Upload your input CSV file
Drag and drop file here
Limit 200MB per file • CSV
Browse files
1997.5
2000.0
2002.5
2005.0
2007.5
2010.0
2012.5
2015.0
Year
labels=Coconut
Production=9.7803036e+10
parent=Kerala
id=Kerala/Coconut
Coconut
Kerala