

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")
    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))

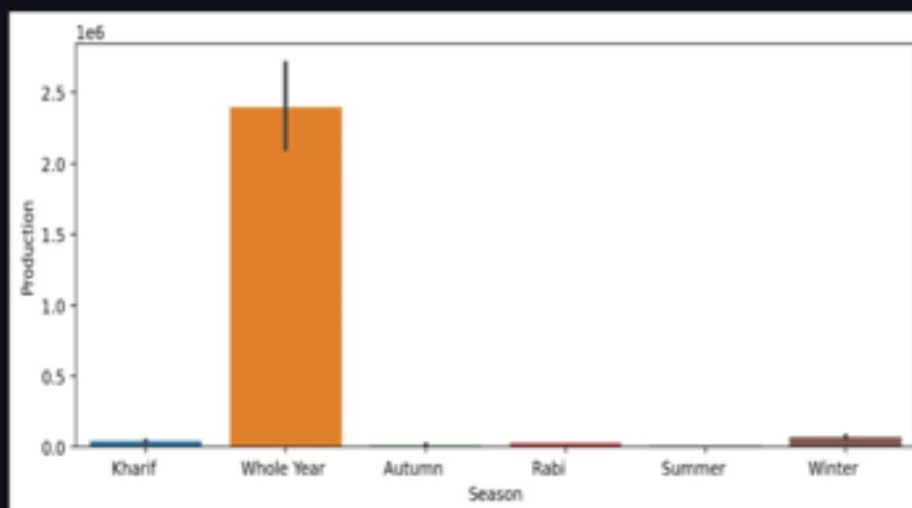
st.plotly_chart(fig5)
plt.title("State With Crop Production",fontsize=20)
```

Output

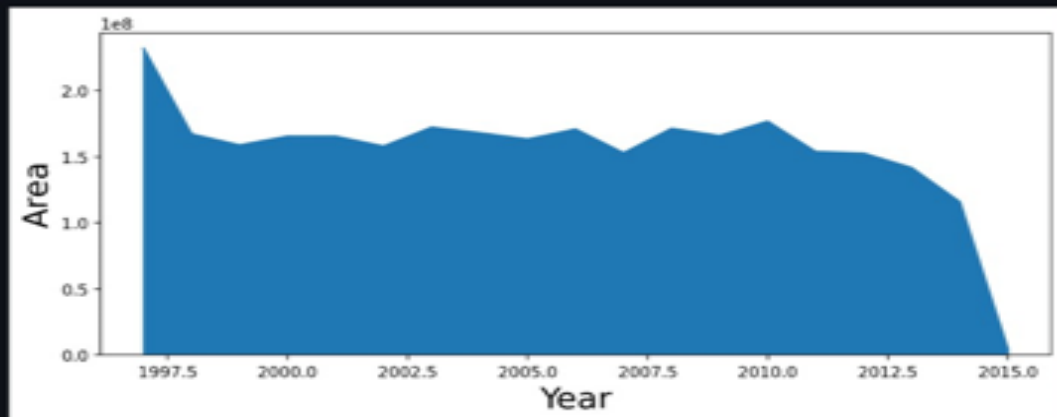
Crop Yield Estimation

	State_Name	District_Name	Crop_Year	Season	Crop	Area
0	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Areca nut	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	175.0000
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

Visualizaiton to showcase Average Crop Production by Seasons.



Area plot.



label=Coconut
Production=0.700000e+10
parent=Kerala
id=Kerala/Coconut

