

# PROJECT DEVELOPMENT PHASE

## SPRINT 4 CODING

Date	19 November 2022
Team ID	PNT2022TMID21909
Project Name	ESTIMATION OF CROP YIELD USING DATA ANALYTICS

## Registration Form

Name	
Email	
Password	

Register

## Login Form

Email
Password

Login

[Register](#)

## DATABASE

## CONNECTIVITY:CODING CSS COMPONENT

```
mat-card {
```

```
max-width:
600px;
margin:
2em auto;
text-align:
center;
max-
height:
600px;
}
```

```
.header{
  text-align: center;
}
```

```
.full-
width {
width:
80%;
}
```

```
.button-
row {
padding-
top: 5px;
}
```

```
.button-
row a {
margin-
right:
8px; text-
align:
center;
}
```

```

.forget-
  password
  {
    padding-
    left: 0px;
  }

.emailInput{
  padding-top: 10px;
}

.contentBody {
  padding: 60px
  1rem;
  background
  :#006064;
  display:
  block;
}

.aLink{
  float: right;

  padding-
  right: 60px;
  text-
  decoration:
  none;
}

```

## HTML COMPONENT:

```

<mat-card>
  <mat-card-content>
    <div class="header">
      <P>Sign Into Your Account </P>
    </div>
    <form (ngSubmit)="onLogin()" name="loginForm" [formGroup]="loginForm">
      <div class="emailInput">

```

```

<mat-form-field class="full-width" appearance="outline">
  <mat-label>Email</mat-label>
  <input
    FormControlName="email"
    matInput

    placeholder="Enter email address" required
  />
  <mat-error *ngIf="!loginForm.controls['email'].valid"> Email is
    required
  </mat-error>
</mat-form-field>
</div>

<div>
  <span>
    <a class="text-link" class="aLink" routerLink="/auth/forgot-
password">Forgot Password?</a>
  </span>
  <mat-form-field class="full-width" appearance="outline">
    <mat-label>Password</mat-label>
    <input FormControlName="password" matInput [type]=" hide ? 'password' :
'text'" required />
    <button mat-icon-button matSuffix (click)="hide = !hide" [attr.aria-
label]="Hide Password"
      [attr.aria-pressed]="hide">
      <mat-icon>
        {{hide ? 'visibility_off' : 'visibility'}}
      </mat-icon>
    </button>
    <mat-error *ngIf="!loginForm.controls['password'].valid"> Password is
      required
    </mat-error>
  </mat-form-field>
</div>
<button mat-flat-button color="primary">Login</button>
</form>

<div class="button-row">
  <p>Create New Account</p>
</div>
</mat-card-content>
</mat-card>

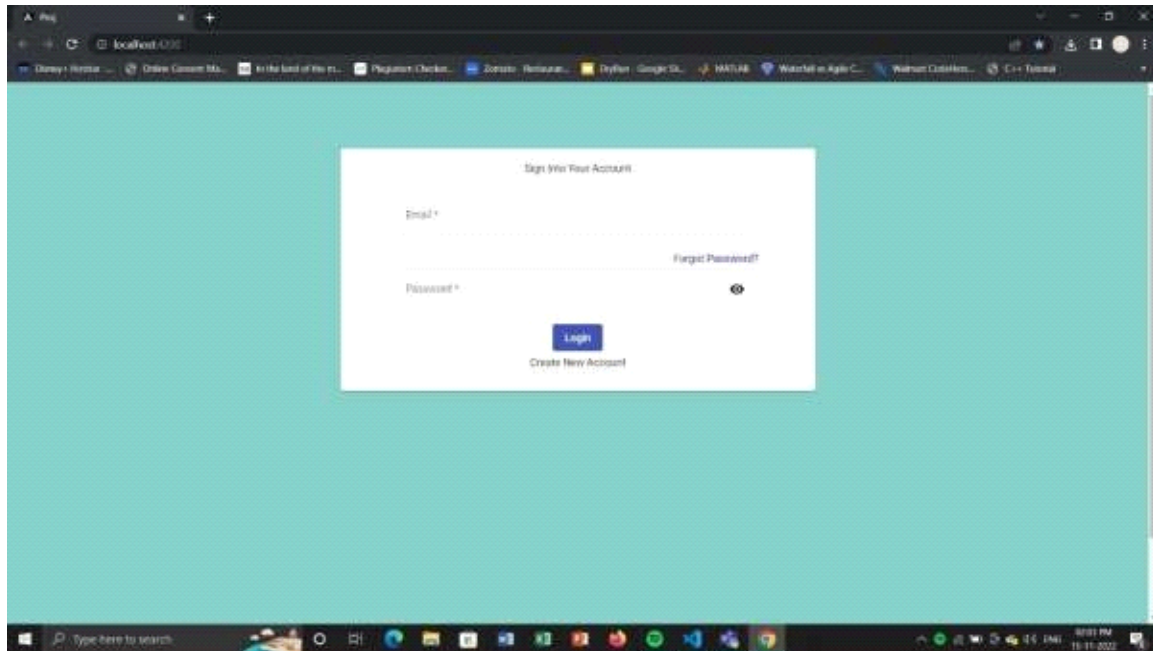
```

+

## **.SPEC.TS COMPONENT:**

```
import { ComponentFixture, TestBed } from '@angular/core/testing'; import {  
  
LoginComponent } from './login.component';  
  
describe('LoginComponent', () => { let  
  component: LoginComponent;  
  let fixture: ComponentFixture<LoginComponent>;  
  
  beforeEach(async () => {  
    await TestBed.configureTestingModule({ declarations: [  
      LoginComponent ]  
    })  
    .compileComponents();  
  
    fixture = TestBed.createComponent(LoginComponent);  
    component = fixture.componentInstance;  
    fixture.detectChanges();  
  });  
  
  it('should create', () => {  
    expect(component).toBeTruthy();  
  });  
});
```

## **SCREENSHOT :**



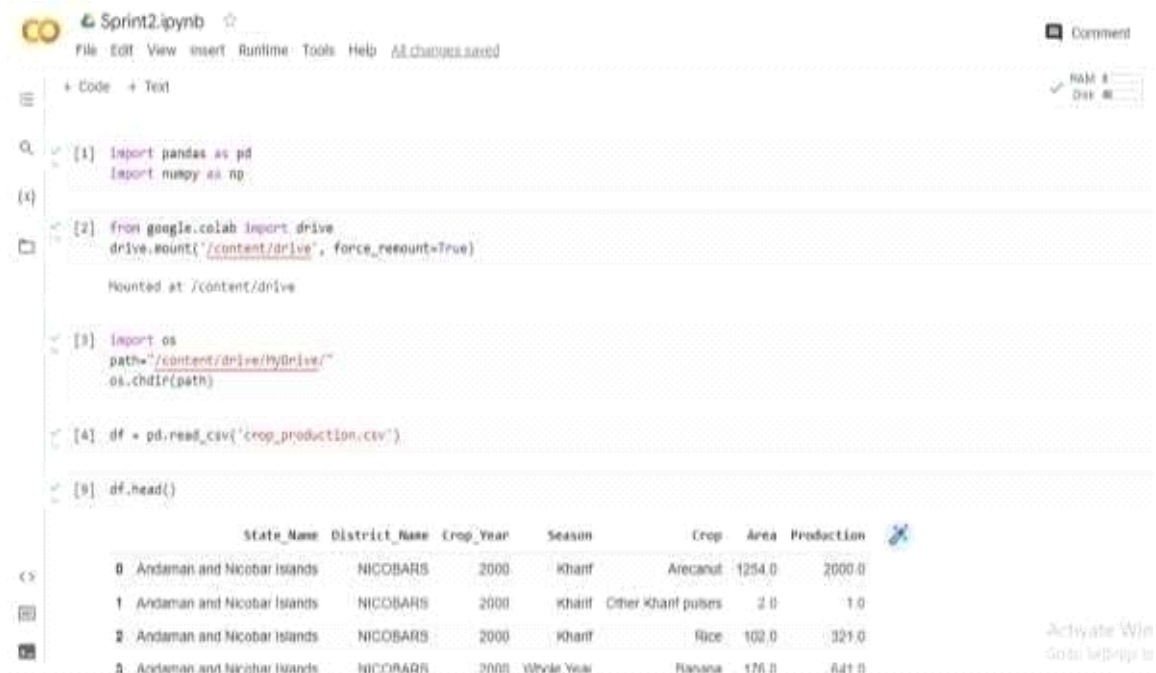
## WORKING WITH DATASETS:

- Dataset used is as follows,

	A	B	C	D	E	F	G	H	I	J
1	State_Na	District_N	Crop_Year	Season	Crop	Area	Production			
2	Andaman	NICOBARS	2000	Kharif	Areca nut	1254	2000			
3	Andaman	NICOBARS	2000	Kharif	Other Kha	2	1			
4	Andaman	NICOBARS	2000	Kharif	Rice	102	321			
5	Andaman	NICOBARS	2000	Whole Ye	Banana	176	641			
6	Andaman	NICOBARS	2000	Whole Ye	Cashewnu	720	165			
7	Andaman	NICOBARS	2000	Whole Ye	Coconut	18168	65100000			
8	Andaman	NICOBARS	2000	Whole Ye	Dry ginger	36	100			
9	Andaman	NICOBARS	2000	Whole Ye	Sugarcane	1	2			
10	Andaman	NICOBARS	2000	Whole Ye	Sweet pot	5	15			
11	Andaman	NICOBARS	2000	Whole Ye	Tapioca	40	169			
12	Andaman	NICOBARS	2001	Kharif	Areca nut	1254	2061			
13	Andaman	NICOBARS	2001	Kharif	Other Kha	2	1			
14	Andaman	NICOBARS	2001	Kharif	Rice	83	300			
15	Andaman	NICOBARS	2001	Whole Ye	Cashewnu	719	192			
16	Andaman	NICOBARS	2001	Whole Ye	Coconut	18190	64430000			
17	Andaman	NICOBARS	2001	Whole Ye	Dry ginger	46	100			
18	Andaman	NICOBARS	2001	Whole Ye	Sugarcane	1	1			
19	Andaman	NICOBARS	2001	Whole Ye	Sweet pot	11	33			
20	Andaman	NICOBARS	2002	Kharif	Rice	189.2	510.84			
21	Andaman	NICOBARS	2002	Whole Ye	Areca nut	1258	2083			
22	Andaman	NICOBARS	2002	Whole Ye	Banana	213	1278			
23	Andaman	NICOBARS	2002	Whole Ye	Black pep	63	13.5			

This dataset consists of columns like State Name, District Name, Crop, Season, Crop year, Area and Production.

- Importing and cleaning the dataset in Google Colab platform,



The screenshot shows a Google Colab notebook titled 'Sprint2.ipynb'. The code is executed in five steps:

```
[1] import pandas as pd
import numpy as np

[2] from google.colab import drive
drive.mount('/content/drive', force_remount=True)

Mounted at /content/drive

[3] import os
path="/content/drive/MyDrive/"
os.chdir(path)

[4] df = pd.read_csv('crop_production.csv')

[5] df.head()
```

The output of the last step is a preview of the first five rows of the 'crop\_production.csv' dataset. The columns are: Index, State\_Name, District\_Name, Crop\_Year, Season, Crop, Area, and Production.

	State_Name	District_Name	Crop_Year	Season	Crop	Area	Production
0	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Areca nut	1254.0	2000.0
1	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Other Kharif pulses	2.0	1.0
2	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Rice	102.0	321.0
3	Andaman and Nicobar Islands	NICOBARS	2000	Winter Year	Banana	176.0	641.0

Sprint2.ipynb

File Edit View Insert Runtime Tools Help All changes saved

Code Text

[6] df.isnull().sum()

```
State_Name      0
District_Name   0
Crop_Year       0
Season          0
Crop            0
Area            0
Production      3730
dtype: int64
```

[7] df1 = df.dropna()

[8] df1.isnull().sum()

```
State_Name      0
District_Name   0
Crop_Year       0
Season          0
Crop            0
Area            0
Production       0
dtype: int64
```

df1.describe()

Crop\_Year Area Production

Sprint2.ipynb

File Edit View Insert Runtime Tools Help All changes saved

Code Text

[9] Production

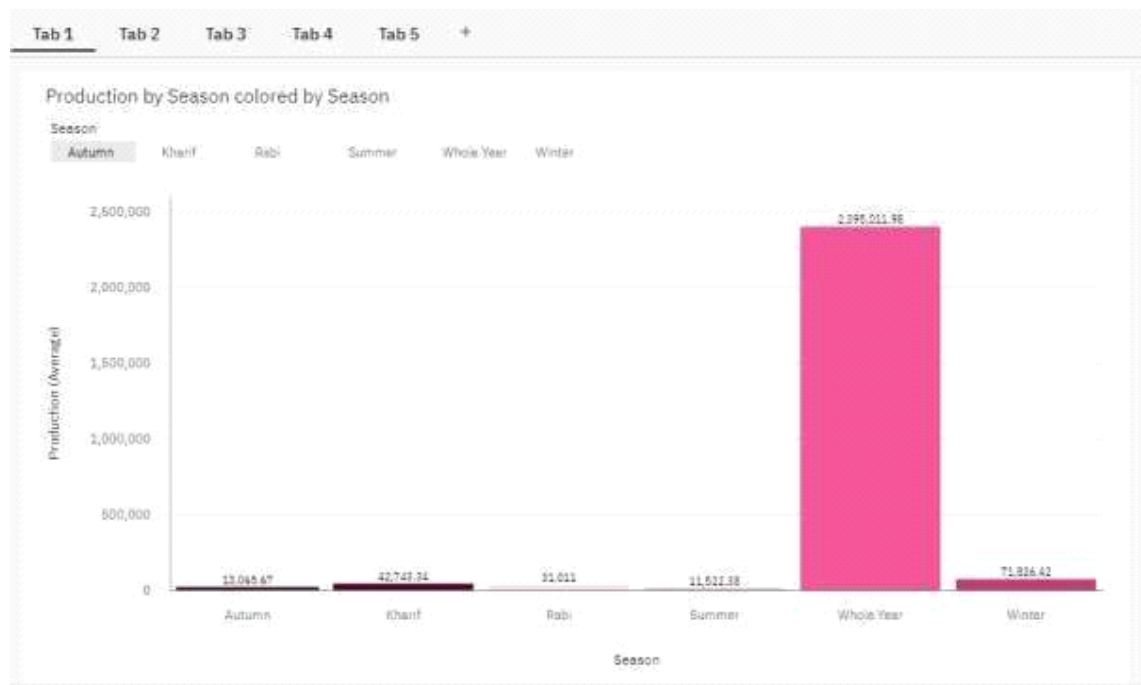
```
dtype: int64
```

[1] df1.describe()

	Crop_Year	Area	Production
count	242361.000000	2.423610e+05	2.423610e+05
mean	2005.626773	1.216741e+04	5.825034e+00
std	4.958205	5.085744e+04	1.706581e+07
min	1997.000000	1.000000e-01	0.000000e+00
25%	2002.000000	8.700000e+01	8.800000e+01
50%	2006.000000	6.030000e+02	7.290000e+02
75%	2010.000000	4.545000e+03	7.023000e+03
max	2015.000000	8.580100e+06	1.250800e+09

## DATA VISUALIZATION CHARTS:





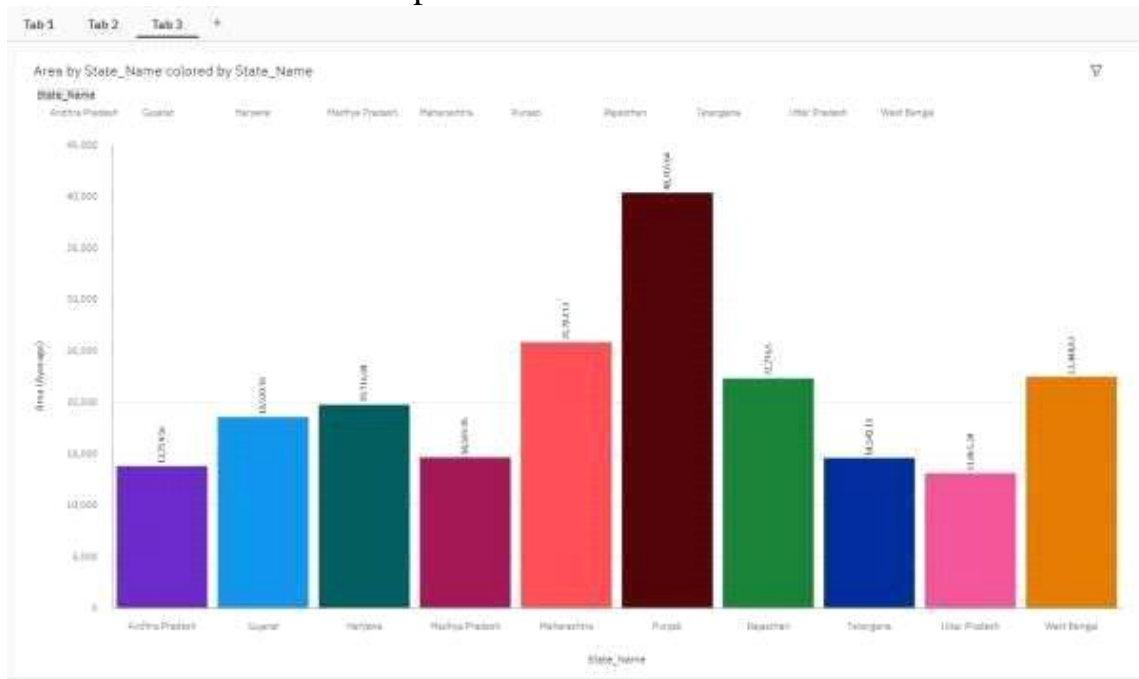
Visualization on Seasons with average Production



Visualization with years usage of Area and Production



## □ Visualization on top 10 States with most Area

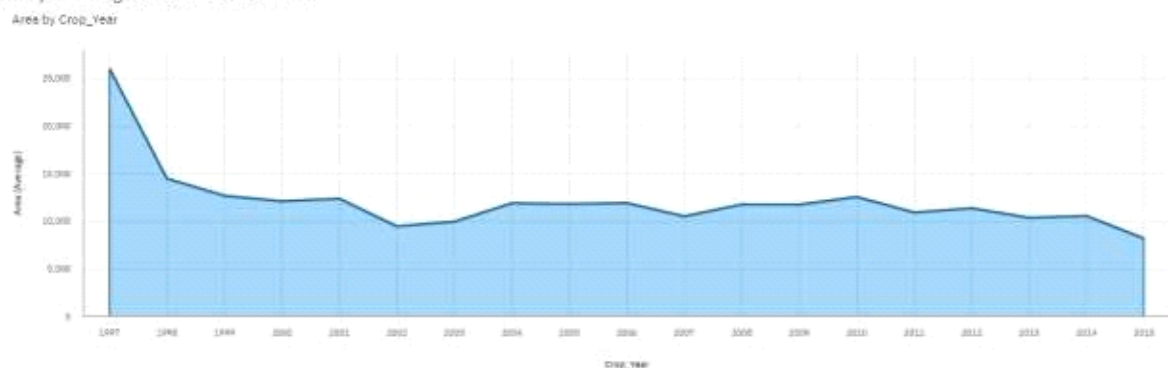


## Creating the dashboard in COGNOS analytics

Different data visualization charts are created using COGNOS analytics

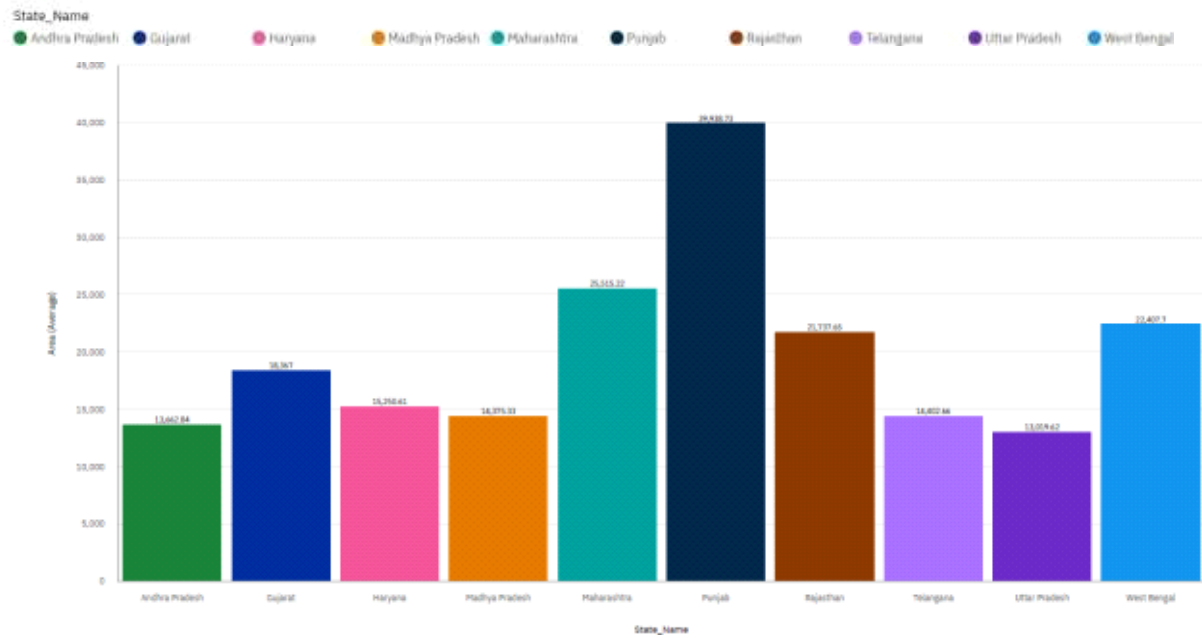
for different datasets and the production by season, area, year are estimated. DATASET 1

With years usage of Area and Production

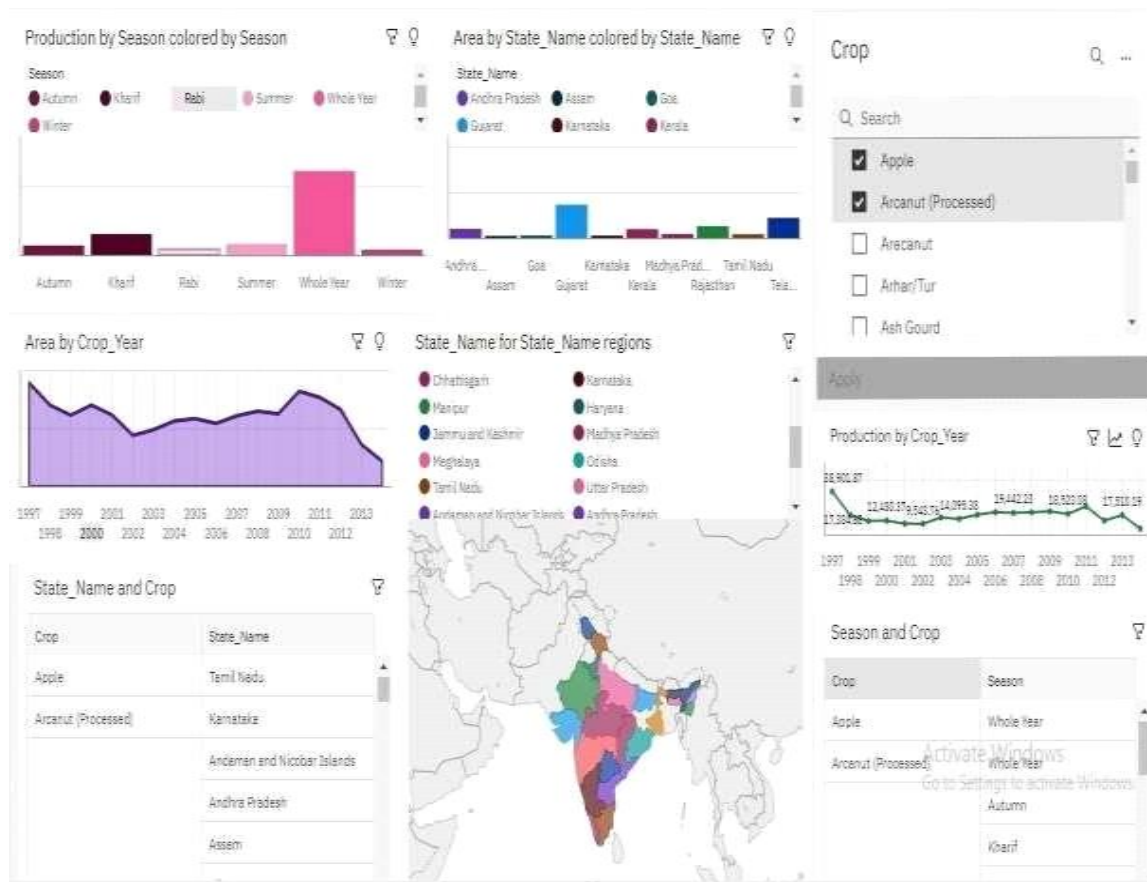


## Top 10 States With Most Area

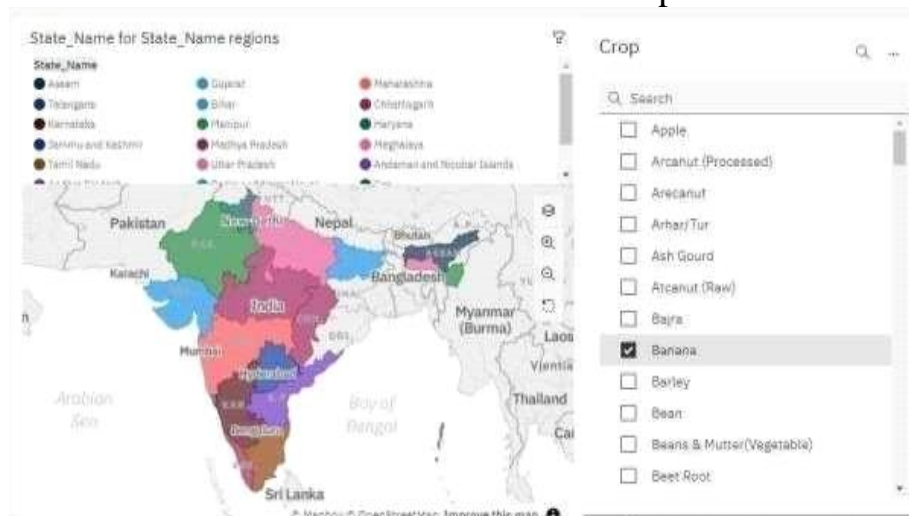
Area by State\_Name colored by State\_Name



DATASET 2



- Visualization on State with Crop Production



- Visualization on States with the Crop Production along with Season

State\_Name and Crop

Crop	State_Name
Grapes	Tamil Nadu
	Andhra Pradesh
	Maharashtra
	Karnataka
	Madhya Pradesh
	Uttar Pradesh
	Rajasthan
	Tamil Nadu
	Telangana



Season and Crop



Crop	Season
Apple	Whole Year
Grapes	Winter
	Whole Year