PROJECT DEVELOPMENT PHASE

SPRINT 4 CODING

Date	03 November 2022
Team ID	PNT2022TMID54302
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>
```

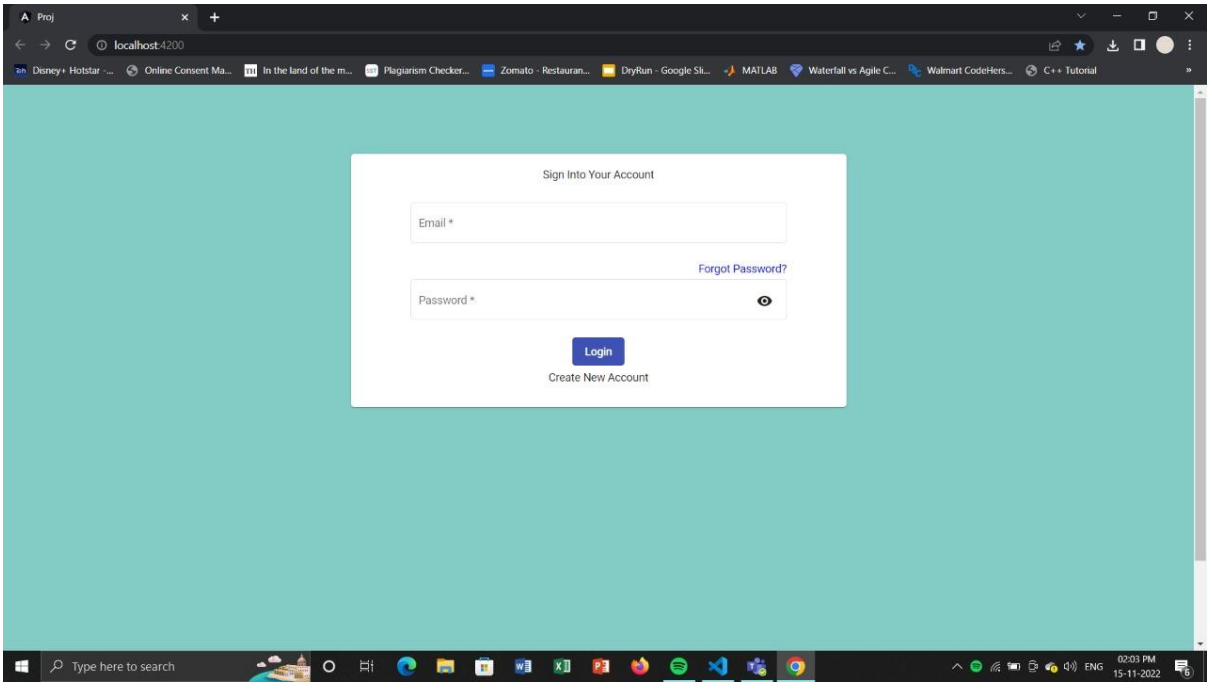
+

.SPEC.TS COMPONENT:

```
import { ComponentFixture, TestBed } from '@angular/core/testing';

import { LoginComponent } from './login.component';

describe('LoginComponent', () => {
  let component: LoginComponent;
  let fixture: ComponentFixture<LoginComponent>;
```

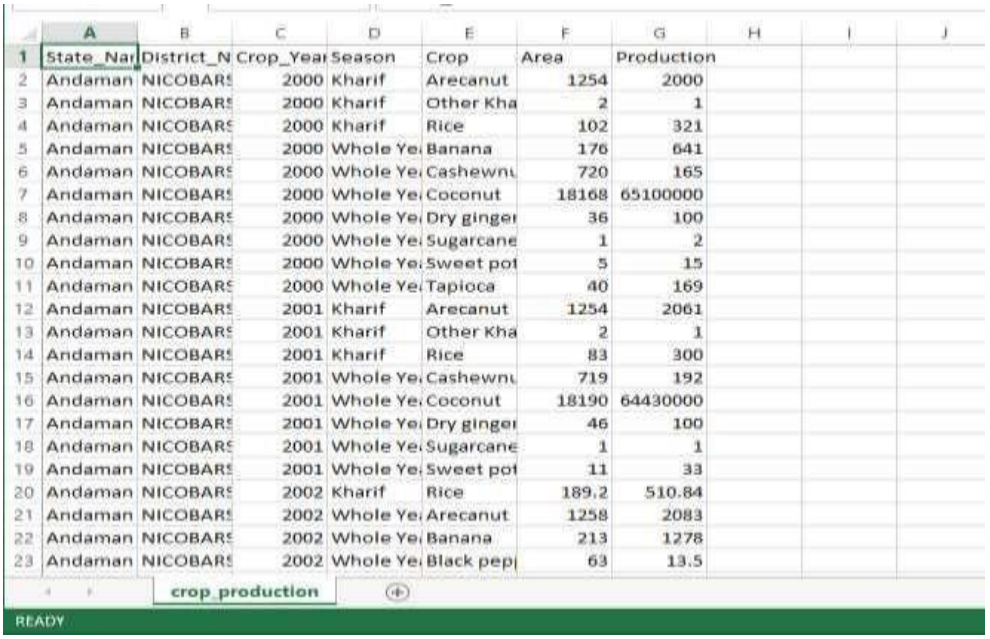
```
  beforeEach(async () => {
    await TestBed.configureTestingModule({
      declarations: [ LoginComponent ]
    })
    .compileComponents();

    fixture = TestBed.createComponent(LoginComponent);
    component = fixture.componentInstance;
    fixture.detectChanges();
  });

  it('should create', () => {
    expect(component).toBeTruthy();
  });
});
```

SCREENSHOT :



WORKING WITH DATASETS:

- Dataset used is as follows,



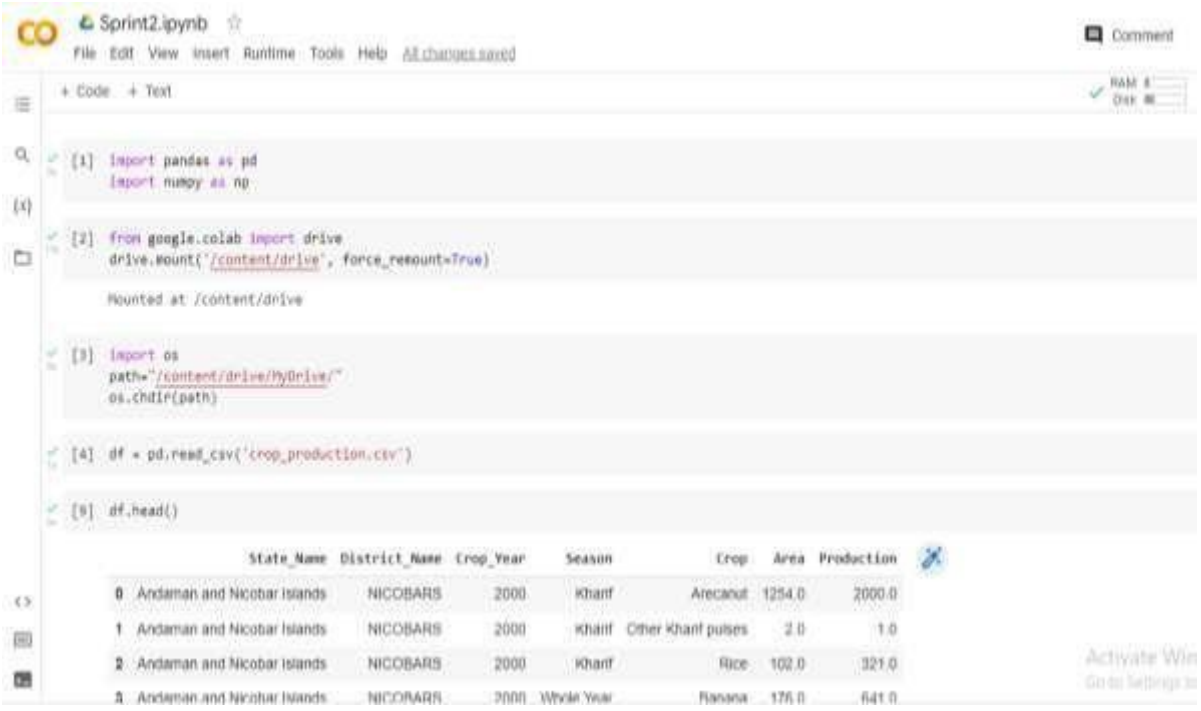
	A	B	C	D	E	F	G	H	I	J
1	State_Nar	District_N	Crop_Year	Season	Crop	Area	Production			
2	Andaman	NICOBARS	2000	Kharif	Arecanut	1254	2000			
3	Andaman	NICOBARS	2000	Kharif	Other Kha	2	1			
4	Andaman	NICOBARS	2000	Kharif	Rice	102	321			
5	Andaman	NICOBARS	2000	Whole Ye	Banana	176	641			
6	Andaman	NICOBARS	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	Arecanut	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	Arecanut	1258	2083			
22	Andaman	NICOBARS	2002	Whole Ye	Banana	213	1278			
23	Andaman	NICOBARS	2002	Whole Ye	Black pep	63	13.5			

crop_production

READY

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,



Sprint2.ipynb

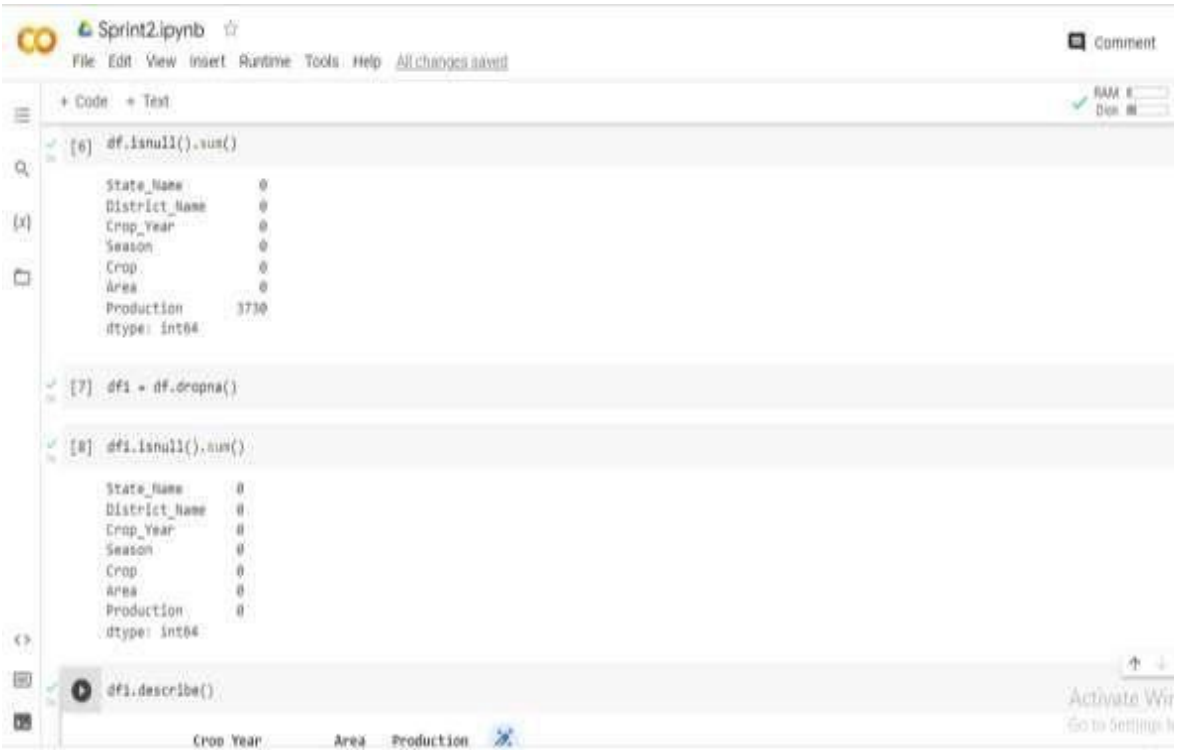
File Edit View Insert Runtime Tools Help All changes saved

Comment

+ Code + Text

```
[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()
```

	State_Name	District_Name	Crop_Year	Season	Crop	Area	Production
0	Andaman and Nicobar Islands	NICOBARS	2000	Kharif	Arecanut	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	Whole Year	Banana	176.0	641.0



Sprint2.ipynb

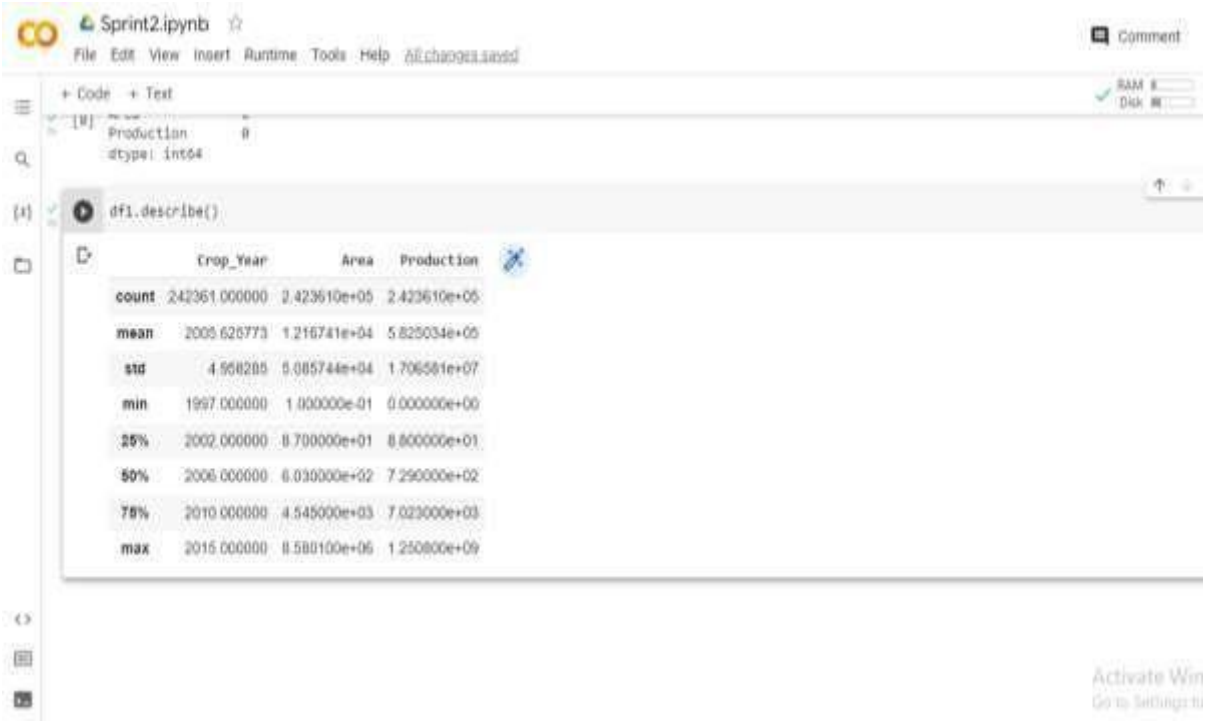
File Edit View Insert Runtime Tools Help All changes saved

Comment

+ Code + Text

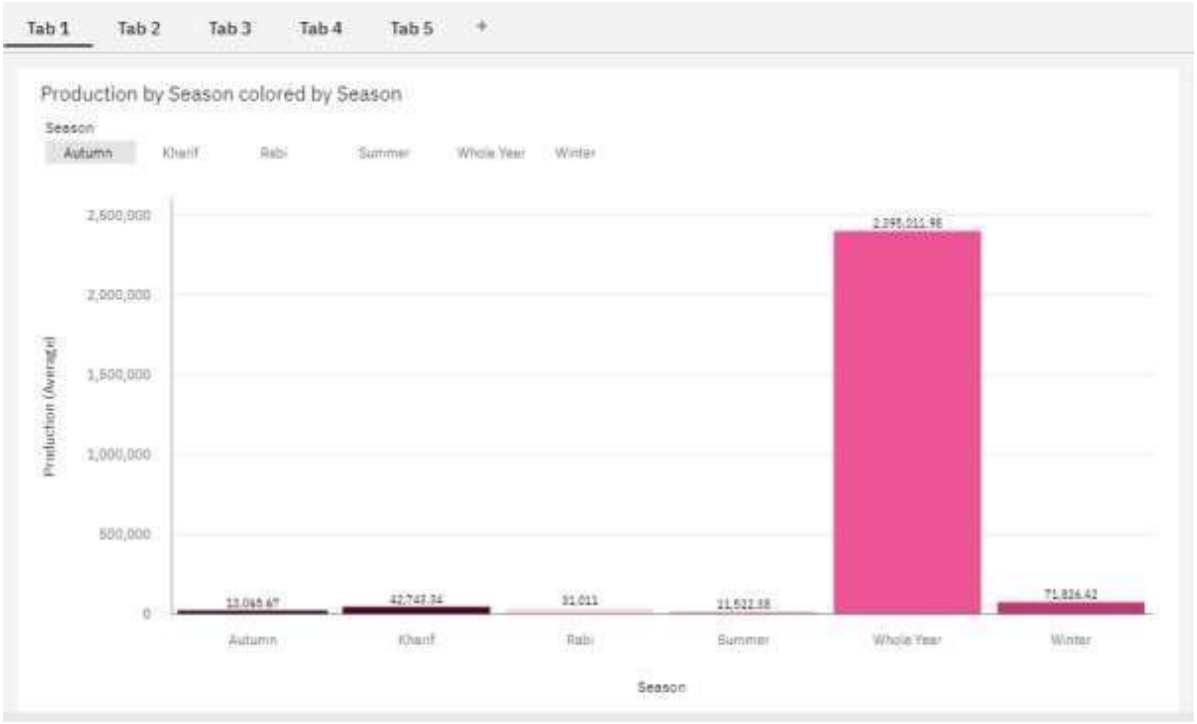
```
[6] df.isnull().sum()

    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

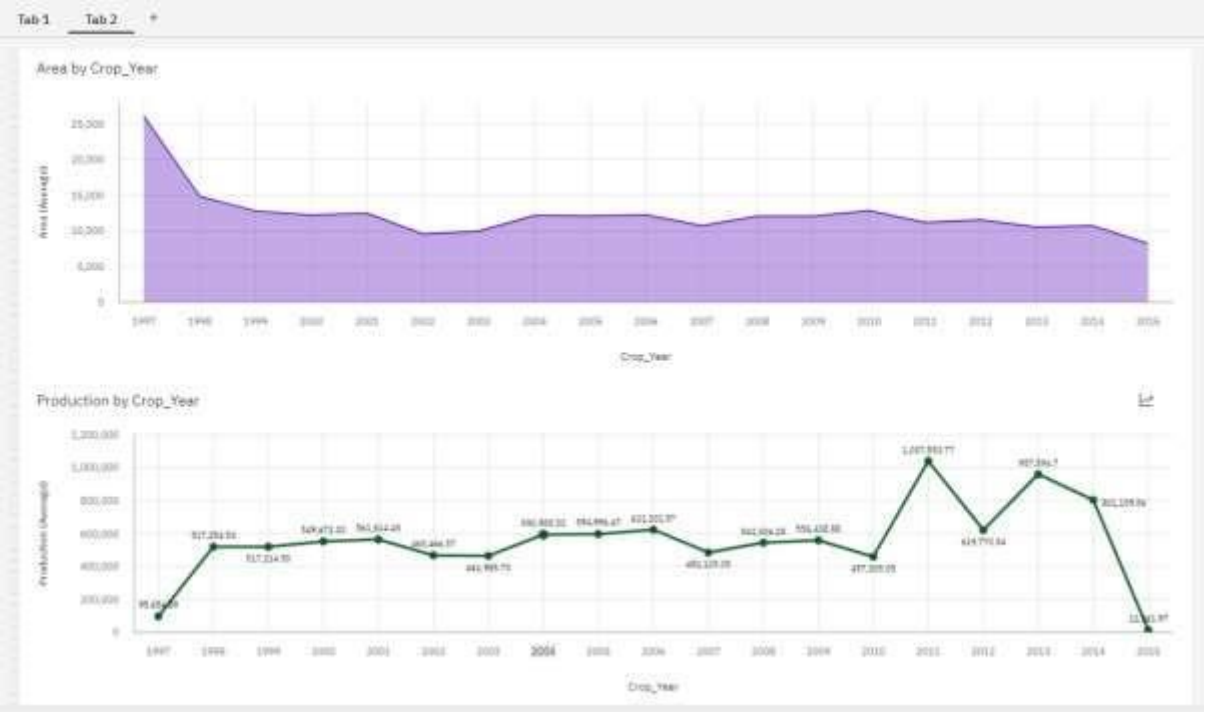


DATA VISUALIZATION CHARTS:

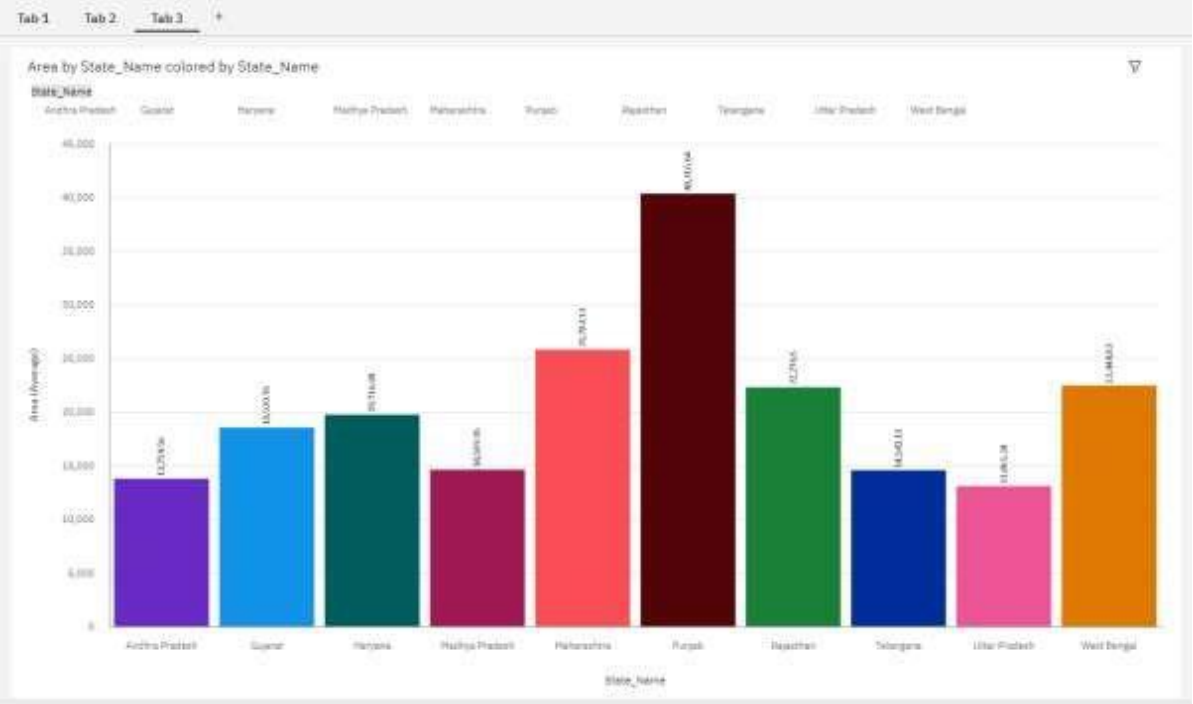
- Visualization on Seasons with average Production



- Visualization with years usage of Area and Production



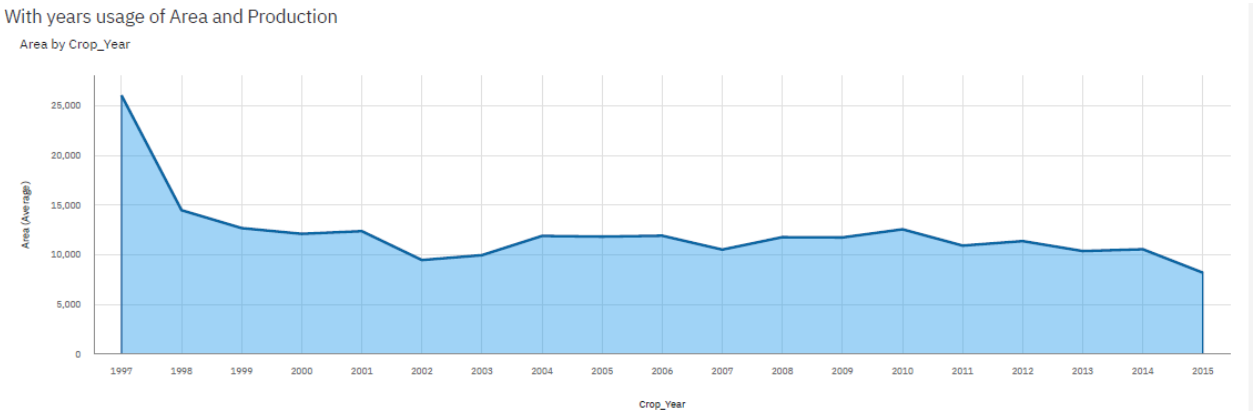
- Visualization on top 10 States with most Area

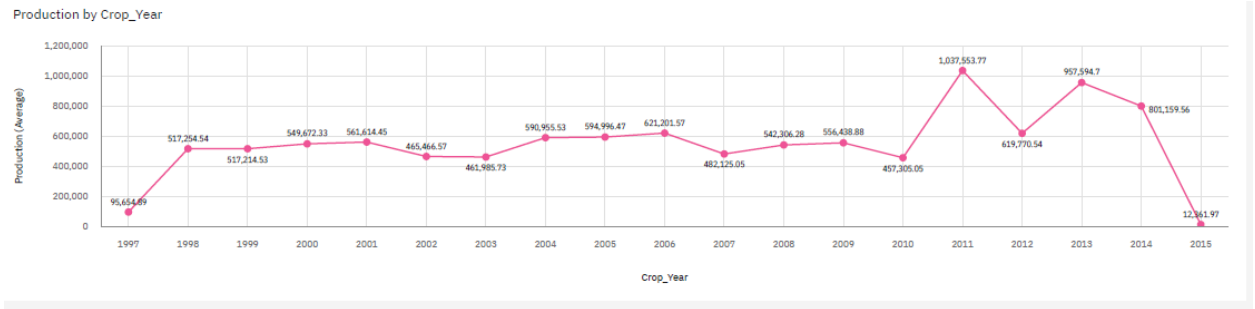


Creating the dashboard in COGNOS analytics

Different data visualization charts are created using COGNOS analytics for different datasets and the production by season, area, year are estimated.

DATASET 1





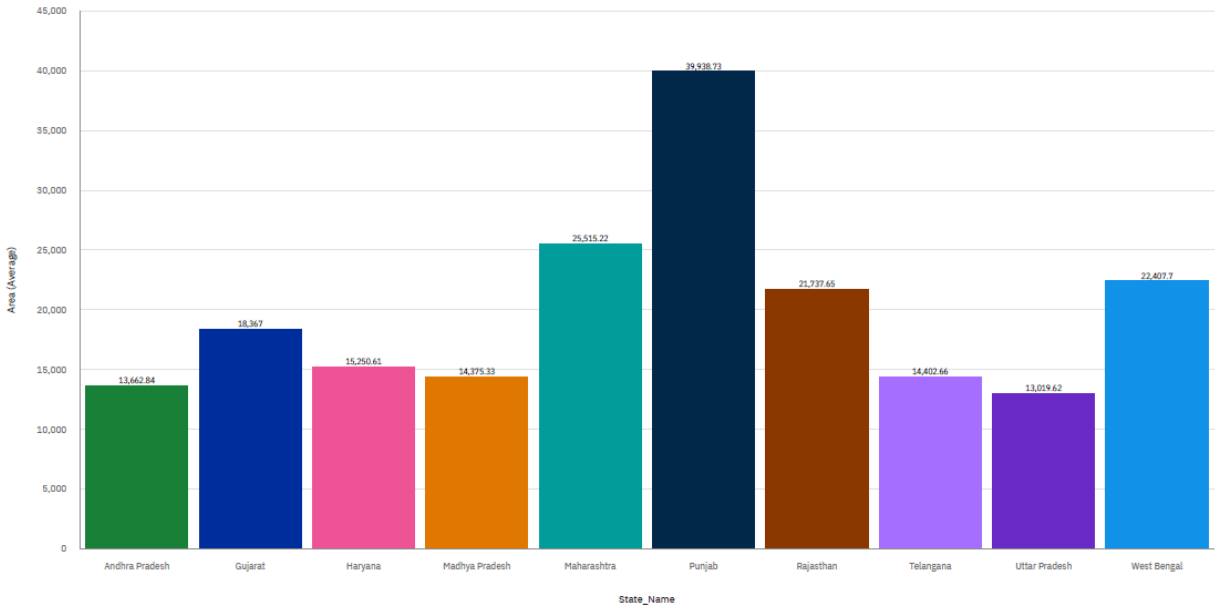
States with the crop production along with seasons

State_Name and Crop

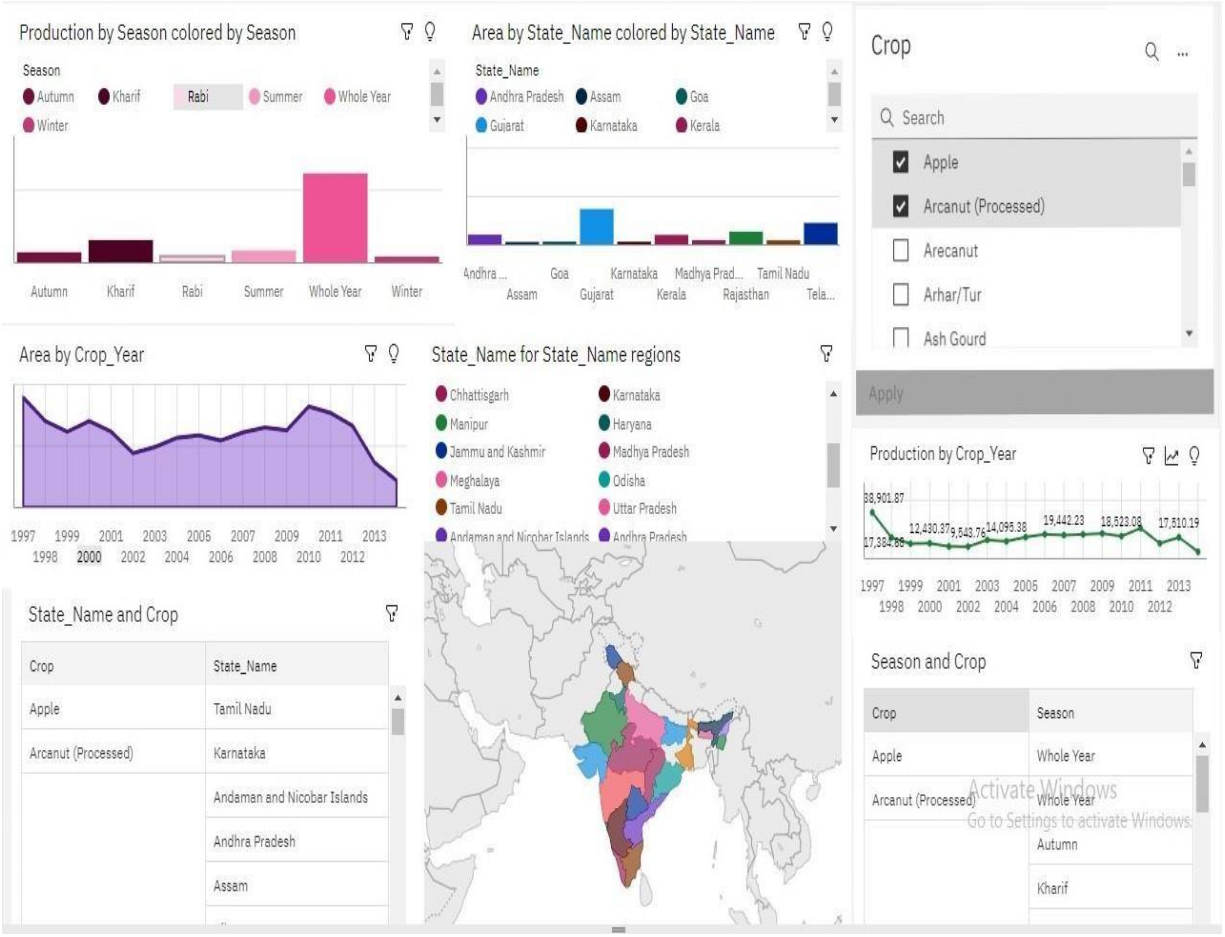
Crop	State_Name
Grapes	Andhra Pradesh
	Haryana
	Karnataka
	Madhya Pradesh
	Maharashtra
	Rajasthan
	Tamil Nadu
	Telangana

Season and Crop

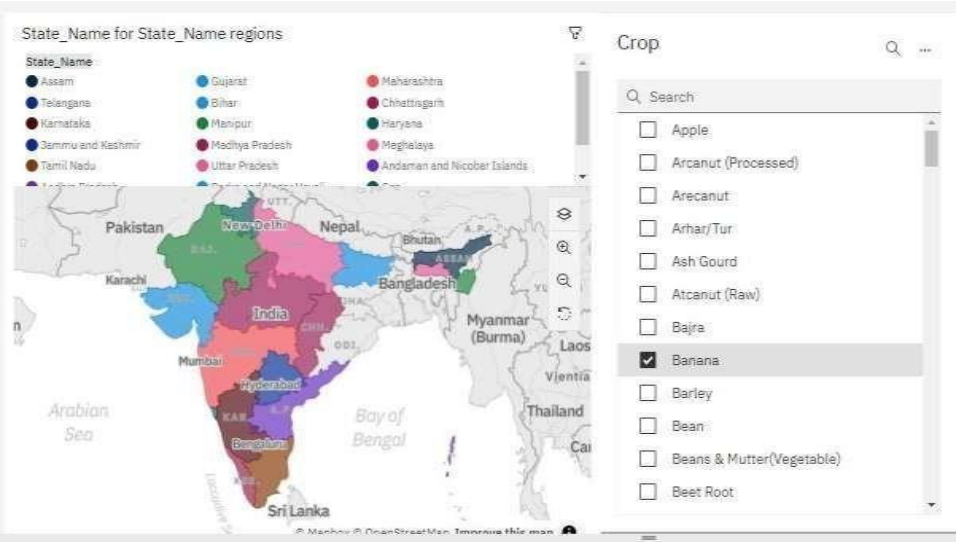
Crop	Season
Grapes	Kharif
	Whole Year


45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Area (Average)
13,662.84
18,367
15,250.61
14,375.33
25,515.22
39,938.73
21,737.65
14,402.66
13,019.62
22,407.7
Andhra Pradesh
Gujarat
Haryana
Madhya Pradesh
Maharashtra
Punjab
Rajasthan
Telangana
Uttar Pradesh
West Bengal
State_Name

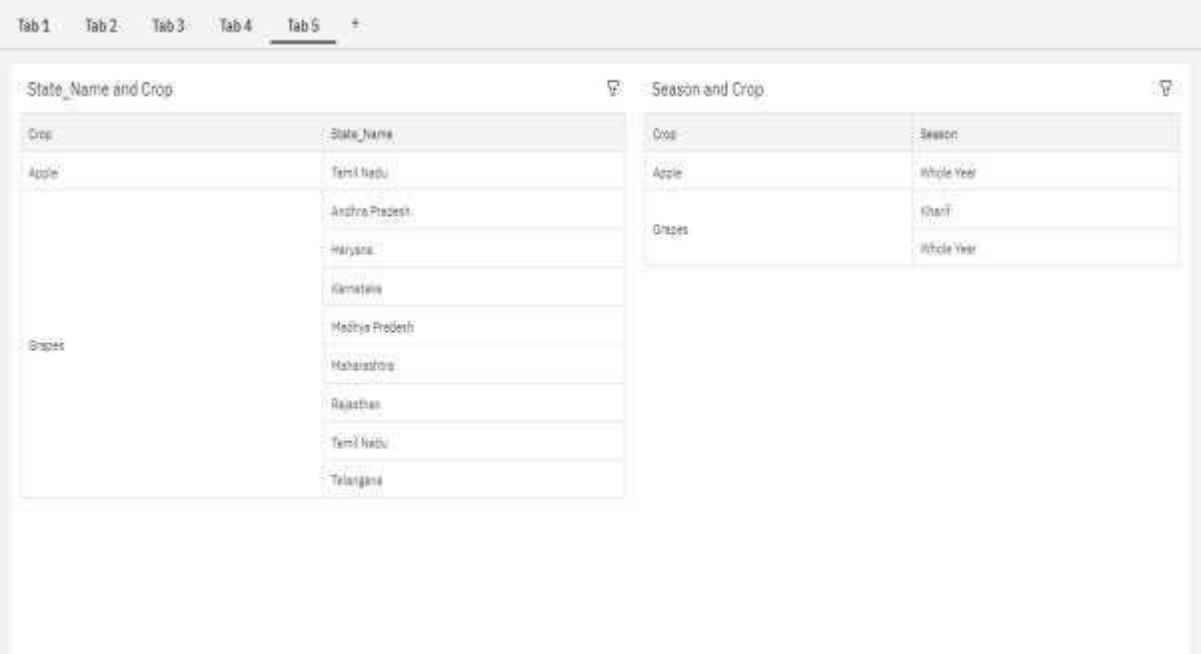
DATASET 2


Production by Season colored by Season
Season
Autumn
Kharif
Rabi
Summer
Whole Year
Winter
Area by State_Name colored by State_Name
State_Name
Andhra Pradesh
Assam
Goa
Gujarat
Karnataka
Kerala
Crop
Search
Apple
Arcanut (Processed)
Arecanut
Arhar/Tur
Ash Gourd
Apply
Area by Crop_Year
1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
State_Name for State_Name regions
Chhattisgarh
Karnataka
Manipur
Haryana
Jammu and Kashmir
Madhya Pradesh
Meghalaya
Odisha
Tamil Nadu
Uttar Pradesh
Andaman and Nicobar Islands
Andhra Pradesh
Production by Crop_Year
88,901.87
17,384.88
12,430.37
9,543.76
14,096.38
19,442.23
18,523.03
17,510.19
State_Name and Crop
Crop
State_Name
Apple
Tamil Nadu
Arcanut (Processed)
Karnataka
Andaman and Nicobar Islands
Andhra Pradesh
Assam
Season and Crop
Crop
Season
Apple
Whole Year
Arcanut (Processed)
Whole Year
Autumn
Kharif
Activate Windows
Go to Settings to activate Windows.

- Visualization on State with Crop Production



- Visualization on States with the Crop Production along with Season



The above visualizations are created using the COGNOS platform.

"ECONOMY AND ECOLOGY HAVE TO BE HAND IN HAND FOR THE DEVELOPMENT OF OUR COUNTRY"

SAVE AGRICULTURE!!!