

Capstone Project for Crop Recommendation Final report

1.Dataset Name Crop_recommendation from Kaggle as csv file

2.In this dataset input -N(Nitrogen),P(phosphorous),K(Potassium),temperature,humidity,ph,rainfall

Output-label

3.in this data output has categorical data,so we go to ML Classification Analysis

4.Temperature,humidity,ph has high VIF correlation value . so we avoid multicollinearity we take only N,P,K,rainfall.

5.In Feature selection –chi's value for classification RandomForest has 0.990909

6. In RFE value for Random forest has 0.989091

7.According to feature selection,I select RandomForestClassification Model as final model

And get the accuracy value is 0.930303

8.Due to this above accuracy 0.930303 I did GridSearchCV ConfusionMatrix

Through Heatmap get Accuracy 93.03%

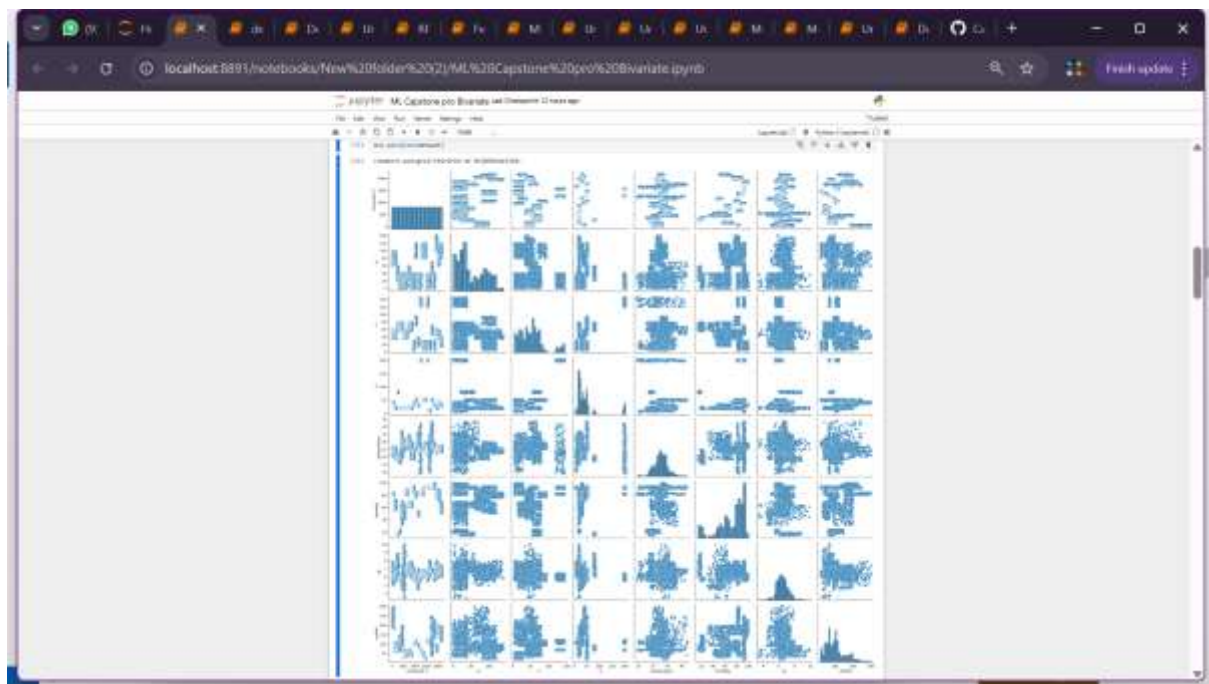
9.From univariate analysis I submitted without outliers descriptive column

10.In Bivariate analysis I submitted pairplot using seaborn library

11.I finalized the model and save the model.

12.Finally Deployment is done and predict the output and call to action

I submitted all related ipython Notebook files in gitup



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Code

Use `df.loc[row_indexer, "col"] = values` instead, to perform the assignment

See the caveats in the documentation: <https://pandas.pydata.org/pandas-docs/s>

`dataframe['Random'][idex]=accrf[number]`

[30]: `#result5`

	Logistic	SVMI	SVMnl	KNN	Navie	Decision	Random
ChiSquare	0.972727	0.985455	0.983636	0.98	0.990909	0.98	0.990909

[31]:

result

[]:

```

classifier,Accuracy,report,X_test,y_test,cm=Decision(X_train,y_train,X_test)
accdes.append(Accuracy)

classifier,Accuracy,report,X_test,y_test,cm=random(X_train,y_train,X_test)
accrf.append(Accuracy)

result=rfe_classification(acclog,accsvml,accsvmln1,accknn,accnav,accdes,accrf)

```

•[19]: result
#d

[19]:

	Logistic	SVMI	SVMn1	KNN	Navie	Decision	Random
Logistic	0.970909	0.985455	0.978182	0.970909	0.992727	0.989091	0.989091
SVC	0.943636	0.985455	0.974545	0.969091	0.996364	0.989091	0.989091
Random	0.970909	0.985455	0.978182	0.970909	0.992727	0.989091	0.989091
DecisionTree	0.970909	0.985455	0.978182	0.970909	0.992727	0.989091	0.989091

document - Word Product Activation (select)

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Model cross Gridcapstone (classifier - Copy).ipynb ML&DS Prep Uns.ipynb selectBest3 (2).ipynb Characterization (Co...)

C:\Users\Admin\Downloads> ML&DS Prep Uns.ipynb > descriptive

Generate + Code + Markdown Run All

Select Kernel

descriptive

[19]:

	N	P	K	temperature	humidity	ph	rainfall
Mean	50.551818	53.362727	48.149091	25.616244	71.451779	6.46945	103.463655
Median	37.0	51.0	32.0	25.598693	80.473146	6.425045	94.867624
Mode	22	60	17	8.025675	14.25804	8.504752	20.111267
Q1: 25%	21.0	28.0	20.0	22.759375	60.261953	5.971693	64.551686
Q2: 50%	37.0	51.0	32.0	25.598693	80.473146	6.425045	94.867624
Q3: 75%	84.25	68.0	49.0	28.561654	89.948771	6.923643	124.267908
Q4: 100%	140	145	205	43.675493	99.981876	9.935091	298.560117
99%	129.01	143.0	204.0	40.791352	96.966445	8.736512	267.991472
IQR	63.25	40.0	29.0	5.792279	29.686618	0.95195	59.715822
1.5rule	94.875	80.0	43.5	8.688419	44.530227	1.427925	89.573733
Lesser	-73.875	-32.0	-23.5	14.080956	15.711726	-2.543768	-25.922047
Greater	179.125	128.0	92.5	37.250073	134.470998	8.361567	213.841241
Min	0	5	5	8.025675	14.25804	8.504752	20.111267
Max	140	145	205	43.675493	99.981876	9.935091	298.560117

#min value is not less than lesser value, so outliers is not present

Python

Python

100%

```
classifier,Accuracy,report,X_test,y_test,cm=DecisionTreeClassifier()  
accdes.append(Accuracy)
```

```
classifier,Accuracy,report,X_test,y_test,cm=RandomForestClassifier()  
accrf.append(Accuracy)
```

```
result=rfe_classification(acclog,accsvml,accsvml,accsvml,accsvml,accsvml)
```

•[19]: result
#6

[19]:	Logistic	SVML	SVMnl	KNN	
Logistic	0.970909	0.985455	0.978182	0.970909	0.970909
SVC	0.943636	0.985455	0.974545	0.969091	0.969091
Random	0.970909	0.985455	0.978182	0.970909	0.970909
DecisionTree	0.970909	0.985455	0.978182	0.970909	0.970909