

In [13]:

```
# Wolkus Project
import pandas as pd
```

In [14]:

```
df = pd.read_csv("LWSum.csv")
```

In [15]:

```
Risk = []
data = pd.DataFrame(df)
```

In [16]:

```
data.head()
```

Out[16]:

	deviceid	date	month	AVG(sampledata.TC)	SUM(LW)	AVG(PLV2)	farmid	cropname
0	ZT1FC3FS	25-01-2021	1	15.797500	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate
1	ZT1FC3FS	26-01-2021	1	12.386250	14	0.0	2CkGqcWtBndq5pHCh	Pomegranate
2	ZT1FC3FS	27-01-2021	1	11.767708	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate
3	ZT1FC3FS	28-01-2021	1	13.056250	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate
4	ZT1FC3FS	29-01-2021	1	11.803750	36	0.0	2CkGqcWtBndq5pHCh	Pomegranate

In [17]:

```
for (row,rowData) in data.iterrows():
    if int(rowData['AVG(sampledata.TC)']) < 5:
        Risk.append("Low")
    elif int(rowData['AVG(sampledata.TC)']) >= 5 and int(rowData['AVG(sampledata.TC)'])
< 18 and int(rowData['SUM(LW)']) < 14:
        Risk.append("Low")
    elif int(rowData['AVG(sampledata.TC)']) >= 5 and int(rowData['AVG(sampledata.TC)'])
< 18 and int(rowData['SUM(LW)']) >= 14:
        Risk.append("Medium")
    elif int(rowData['AVG(sampledata.TC)']) >= 18 and int(rowData['AVG(sampledata.TC)'])
< 25 and int(rowData['SUM(LW)']) < 6:
        Risk.append("Low")
    elif int(rowData['AVG(sampledata.TC)']) >= 18 and int(rowData['AVG(sampledata.TC)'])
< 25 and int(rowData['SUM(LW)']) >= 6 and int(rowData['SUM(LW)']) < 12:
        Risk.append("Medium")
    elif int(rowData['AVG(sampledata.TC)']) >= 18 and int(rowData['AVG(sampledata.TC)'])
< 25 and int(rowData['SUM(LW)']) >= 12:
        Risk.append("High")
    elif int(rowData['AVG(sampledata.TC)']) >= 25 and int(rowData['AVG(sampledata.TC)'])
< 30 and int(rowData['SUM(LW)']) < 10:
        Risk.append("Low")
    elif int(rowData['AVG(sampledata.TC)']) >= 25 and int(rowData['AVG(sampledata.TC)'])
< 30 and int(rowData['SUM(LW)']) >= 14:
        Risk.append("Medium")
    elif int(rowData['AVG(sampledata.TC)']) >= 30:
        Risk.append("Low")
```

In [18]:

```
data['Risk'] = Risk
```

In [19]:

```
data.head()
```

Out[19]:

Out[19]:

	deviceid	date	month	AVG(sampledata.TC)	SUM(LW)	AVG(PLV2)	farmid	cropname	Risk
0	ZT1FC3FS	25-01-2021	1	15.797500	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate	Low
1	ZT1FC3FS	26-01-2021	1	12.386250	14	0.0	2CkGqcWtBndq5pHCh	Pomegranate	Medium
2	ZT1FC3FS	27-01-2021	1	11.767708	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate	Low
3	ZT1FC3FS	28-01-2021	1	13.056250	0	0.0	2CkGqcWtBndq5pHCh	Pomegranate	Low
4	ZT1FC3FS	29-01-2021	1	11.803750	36	0.0	2CkGqcWtBndq5pHCh	Pomegranate	Medium

In [20]:

```
data.to_csv(r'Downloads\export.csv', index=None, header=True)
```

In [60]:

```
k = []
for i in range(13):
    count = 0
    for j in range(len(data)):
        k.append(i)
        count +=1
        if count == 10:
            count = 0
            break
while(len(k) != len(data)):
    k.pop()
```

In [61]:

```
print(k)
```

```
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 8, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 9, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 11, 11, 11, 11, 11, 11, 11, 11, 11, 11, 12, 12, 12, 12, 12, 12, 12, 12]
```

In [62]:

```
len(k)
```

Out[62]:

127

In [63]:

```
data['col'] = k
```

In [64]:

```
data.to_csv(r'Downloads\export.csv', index=None, header=True)
```

In [65]:

```
df1 = pd.read_csv("new.csv")
```

In [66]:

```
riskwater = []
data1 = pd.DataFrame(df1)
```

In [80]:

```
for (row,rowData) in data1.iterrows():
    if int(rowData['AVG(temp.PLV2)']) >= 0.28 and int(rowData['AVG(temp.PLV2)']) < 3:
        riskwater.append("Low")
```

```

elif int(rowData['AVG(temp.PLV2)']) >= 3 and int(rowData['AVG(temp.PLV2)']) < 7:
    riskwater.append("Medium")
elif int(rowData['AVG(temp.PLV2)']) >= 7 and int(rowData['AVG(temp.PLV2)']) < 25:
    riskwater.append("High")
elif int(rowData['AVG(temp.PLV2)']) >= 25:
    riskwater.append("Low")
elif int(rowData['AVG(temp.PLV2)']) >= 0:
    riskwater.append("Low")

```

In [81]:

```
data1['RiskWater'] = riskwater
```

In [85]:

```
risktemp = []
```

In [89]:

```

for (row,rowData) in data1.iterrows():
    if int(rowData['avg(temp.TC)']) < 5:
        risktemp.append("Low")
    elif int(rowData['avg(temp.TC)']) >= 5 and int(rowData['avg(temp.TC)']) < 18 and int
(rowData['avg(temp.LW)']) < 14:
        risktemp.append("Low")
    elif int(rowData['avg(temp.TC)']) >= 5 and int(rowData['avg(temp.TC)']) < 18 and int
(rowData['avg(temp.LW)']) >= 14:
        risktemp.append("Medium")
    elif int(rowData['avg(temp.TC)']) >= 18 and int(rowData['avg(temp.TC)']) < 25 and in
t(rowData['avg(temp.LW)']) < 6:
        risktemp.append("Low")
    elif int(rowData['avg(temp.TC)']) >= 18 and int(rowData['avg(temp.TC)']) < 25 and in
t(rowData['avg(temp.LW)']) >= 6 and int(rowData['avg(temp.LW)']) < 12:
        risktemp.append("Medium")
    elif int(rowData['avg(temp.TC)']) >= 18 and int(rowData['avg(temp.TC)']) < 25 and in
t(rowData['avg(temp.LW)']) >= 12:
        risktemp.append("High")
    elif int(rowData['avg(temp.TC)']) >= 25 and int(rowData['avg(temp.TC)']) < 30 and in
t(rowData['avg(temp.LW)']) < 10:
        risktemp.append("Low")
    elif int(rowData['avg(temp.TC)']) >= 25 and int(rowData['avg(temp.TC)']) < 30 and in
t(rowData['avg(temp.LW)']) >= 14:
        risktemp.append("Medium")
    elif int(rowData['avg(temp.TC)']) >= 30:
        risktemp.append("Low")

```

In [90]:

```
data1['Risktemp'] = risktemp
```

In [92]:

```
data1.head(13)
```

Out[92]:

	deviceid	date	avg(temp.TC)	avg(temp.LW)	AVG(temp.PLV2)	farmid	cropname	RiskWater	Riskl
0	ZT1FC3FS	25-01-2021	14.059979	5.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
1	ZT1FC3FS	4/2/2021	16.993417	3.900000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
2	ZT1FC3FS	14-02-2021	19.144250	31.100000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
3	ZT1FC3FS	24-02-2021	22.047625	6.300000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	Me
4	ZT1FC3FS	6/3/2021	23.744229	15.400000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
5	ZT1FC3FS	16-03-2021	24.655208	34.600000	0.020830	2CkGqcWtBndq5pHCh	Pomegranate	Low	

	deviceid	date	avg(temp.TC)	avg(temp.LW)	AVG(temp.PLV2)	farmid	cropname	RiskWater	Risk
6	ZT1FC3FS	2021-01-25	27.184875	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
7	ZT1FC3FS	5/4/2021	29.355083	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
8	ZT1FC3FS	15-04-2021	29.500750	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
9	ZT1FC3FS	25-04-2021	30.132458	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
10	ZT1FC3FS	5/5/2021	32.358917	0.000000	0.008340	2CkGqcWtBndq5pHCh	Pomegranate	Low	
11	ZT1FC3FS	15-05-2021	30.546470	13.100000	0.004170	2CkGqcWtBndq5pHCh	Pomegranate	Low	
12	ZT1FC3FS	25-05-2021	29.421869	49.285714	0.291657	2CkGqcWtBndq5pHCh	Pomegranate	Low	Me

In [93]:

```
spary = []
```

In [94]:

```
for (row,rowData) in data1.iterrows():
    if rowData['RiskWater'] == "Low" and rowData['Risktemp'] == "Low":
        spary.append("No")
    elif rowData['RiskWater'] == "Low" and rowData['Risktemp'] == "Medium":
        spary.append("No")
    elif rowData['RiskWater'] == "Low" and rowData['Risktemp'] == "High":
        spary.append("Yes")
    elif rowData['RiskWater'] == "Medium" and rowData['Risktemp'] == "Low":
        spary.append("No")
    elif rowData['RiskWater'] == "Medium" and rowData['Risktemp'] == "Medium":
        spary.append("Yes")
    elif rowData['RiskWater'] == "Medium" and rowData['Risktemp'] == "High":
        spary.append("Yes")
    elif rowData['RiskWater'] == "High" and rowData['Risktemp'] == "Low":
        spary.append("Yes")
    elif rowData['RiskWater'] == "High" and rowData['Risktemp'] == "Medium":
        spary.append("Yes")
    elif rowData['RiskWater'] == "High" and rowData['Risktemp'] == "High":
        spary.append("Yes")
```

In [95]:

```
data1['Spary'] = spary
```

In [96]:

```
data1.head(13)
```

Out[96]:

	deviceid	date	avg(temp.TC)	avg(temp.LW)	AVG(temp.PLV2)	farmid	cropname	RiskWater	Risk
0	ZT1FC3FS	25-01-2021	14.059979	5.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
1	ZT1FC3FS	4/2/2021	16.993417	3.900000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
2	ZT1FC3FS	14-02-2021	19.144250	31.100000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
3	ZT1FC3FS	24-02-2021	22.047625	6.300000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	Me
4	ZT1FC3FS	6/3/2021	23.744229	15.400000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
5	ZT1FC3FS	16-03-2021	24.655208	34.600000	0.020830	2CkGqcWtBndq5pHCh	Pomegranate	Low	
6	ZT1FC3FS	26-03-2021	27.184875	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	

	deviceid	date	avg(temp.TC)	avg(temp.LW)	AVG(temp.PLV2)	farmid	cropname	RiskWater	Risk
7	ZT1FC3FS	5/4/2021	29.393083	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
8	ZT1FC3FS	15-04-2021	29.500750	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
9	ZT1FC3FS	25-04-2021	30.132458	0.000000	0.000000	2CkGqcWtBndq5pHCh	Pomegranate	Low	
10	ZT1FC3FS	5/5/2021	32.358917	0.000000	0.008340	2CkGqcWtBndq5pHCh	Pomegranate	Low	
11	ZT1FC3FS	15-05-2021	30.546470	13.100000	0.004170	2CkGqcWtBndq5pHCh	Pomegranate	Low	
12	ZT1FC3FS	25-05-2021	29.421869	49.285714	0.291657	2CkGqcWtBndq5pHCh	Pomegranate	Low	Me

In [97]:

```
data.to_csv(r'Downloads\FinalAnswerofSpary.csv', index=None, header=True)
```

In []: