

```
#importing important libraries
import pandas as pd
import numpy as np
```

```
#loading the datasets
df_red=pd.read_excel('/content/drive/MyDrive/red_data.xlsx')
df_green=pd.read_excel('/content/drive/MyDrive/green_file.xlsx')
df_white=pd.read_excel('/content/drive/MyDrive/white_file.xlsx')
```

```
#lets visualize some data
df_green.sample(8)
```

1 to 8 of 8 entries

Filter



| index | x  | y  |
|-------|----|----|
| 15    | 3  | 10 |
| 2     | 21 | 0  |
| 14    | 6  | 12 |
| 0     | 18 | 4  |
| 17    | 24 | 8  |
| 1     | 3  | 21 |
| 6     | 9  | 8  |
| 12    | 22 | 7  |

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```
#we will be using the z score to do the data normalization
df_green['x_zs_green']=(df_green.x-df_green.x.mean())/df_green.x.std()
df_green['y_zs_green']=(df_green.y-df_green.y.mean())/df_green.y.std()
df_green.head()
```

|   | x  | y  | x_zs_green | y_zs_green |
|---|----|----|------------|------------|
| 0 | 18 | 4  | 0.462747   | -0.720849  |
| 1 | 3  | 21 | -1.225654  | 2.002357   |
| 2 | 21 | 0  | 0.800427   | -1.361603  |
| 3 | 18 | 2  | 0.462747   | -1.041226  |
| 4 | 3  | 17 | -1.225654  | 1.361603   |



```
df_red['x_zs_red']=(df_red.x-df_red.x.mean())/df_red.x.std()
df_red['y_zs_red']=(df_red.y-df_red.y.mean())/df_red.y.std()
df_red.head()
```

|   | x  | y  | x_zs_red  | y_zs_red |
|---|----|----|-----------|----------|
| 0 | 16 | 14 | -0.062179 | 0.269114 |



```

1  22  11  0.590701 -0.260704
2  18   6  0.155448 -1.143734
3   9  16 -0.823872  0.622326
4   0  16 -1.803191  0.622326

```

```

df_white['x_zs_white']=(df_white.x-df_white.x.mean())/df_white.x.std()
df_white['y_zs_white']=(df_white.y-df_white.y.mean())/df_white.y.std()
df_white.head()

```

|   | x  | y  | x_zs_white | y_zs_white |
|---|----|----|------------|------------|
| 0 | 26 | 17 | 1.455112   | 1.047023   |
| 1 | 9  | 19 | -0.578058  | 1.402616   |
| 2 | 20 | 13 | 0.737523   | 0.335838   |
| 3 | 13 | 2  | -0.099665  | -1.619923  |
| 4 | 17 | 15 | 0.378728   | 0.691431   |

```

#transforming the data into list values
x_green=[i for i in df_green['x_zs_green']]
y_green=[i for i in df_green['y_zs_green']]
x_green=[i for i in df_green['x']]
y_green=[i for i in df_green['y']]

```

```

x_red=[i for i in df_red['x_zs_red']]
y_red=[i for i in df_red['y_zs_red']]
x_red=[i for i in df_red['x']]
y_red=[i for i in df_red['y']]

```

```

x_white=[i for i in df_white['x_zs_white']]
y_white=[i for i in df_white['y_zs_white']]
x_white=[i for i in df_white['x']]
y_white=[i for i in df_white['y']]

```

```

#iterating through each list
for i in x_white:
    for j in x_green:
        if i == j:
            print (f'This white x value {i} belongs to green area ')

for i in y_white:
    for j in y_green:

        if i == j:
            print (f'This white y value {i} belongs to green area ')

```

This white x value 9 belong to green area  
This white x value 9 belong to green area

```

This white x value 9 belong to green area
This white x value 9 belong to green area
This white x value 9 belong to green area
This white x value 20 belong to green area
This white x value 13 belong to green area
This white x value 28 belong to green area
This white x value 28 belong to green area
This white x value 21 belong to green area
This white x value 5 belong to green area
This white y value 17 belong to green area
This white y value 2 belong to green area
This white y value 9 belong to green area
This white y value 10 belong to green area
This white y value 9 belong to green area
This white y value 1 belong to green area
This white y value 21 belong to green area
This white y value 8 belong to green area
This white y value 8 belong to green area
This white y value 8 belong to green area
This white y value 10 belong to green area
This white y value 10 belong to green area
This white y value 3 belong to green area

```

```

for i in x_white:
    for j in x_red:
        if i == j:
            print (f'This white x value {i} belongs to red area ')

for i in y_white:
    for j in y_red:
        if i == j:
            print (f'This white y value {i} belongs to red area ')

```

```

This white x value 26 belongs to red area
This white x value 9 belongs to red area
This white x value 28 belongs to red area
This white x value 1 belongs to red area
This white x value 28 belongs to red area
This white x value 16 belongs to red area
This white x value 16 belongs to red area
This white x value 8 belongs to red area
This white x value 8 belongs to red area
This white x value 8 belongs to red area
This white x value 8 belongs to red area
This white x value 2 belongs to red area
This white x value 8 belongs to red area
This white x value 8 belongs to red area
This white y value 17 belongs to red area
This white y value 17 belongs to red area
This white y value 15 belongs to red area
This white y value 11 belongs to red area
This white y value 11 belongs to red area
This white y value 9 belongs to red area
This white y value 11 belongs to red area
This white y value 11 belongs to red area

This white y value 9 belongs to red area
This white y value 1 belongs to red area
This white y value 21 belongs to red area
This white y value 21 belongs to red area
This white v value 8 belongs to red area

```

END OF IMPLEMENTATION AND TESTING.THANK YOU!!!

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