

TEST8_1

```
In [ ]: # import libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
In [76]: x=pd.read_csv(r"C:\Users\user\Downloads\8_BreastCancerPrediction.csv")
```

Out[76]:

| | id | diagnosis | radius_mean | texture_mean | perimeter_mean | area_mean | smoothness_ |
|-----|----------|-----------|-------------|--------------|----------------|-----------|-------------|
| 0 | 842302 | M | 17.99 | 10.38 | 122.80 | 1001.0 | 0 |
| 1 | 842517 | M | 20.57 | 17.77 | 132.90 | 1326.0 | 0. |
| 2 | 84300903 | M | 19.69 | 21.25 | 130.00 | 1203.0 | 0. |
| 3 | 84348301 | M | 11.42 | 20.38 | 77.58 | 386.1 | 0. |
| 4 | 84358402 | M | 20.29 | 14.34 | 135.10 | 1297.0 | 0. |
| ... | ... | ... | ... | ... | ... | ... | |
| 564 | 926424 | M | 21.56 | 22.39 | 142.00 | 1479.0 | 0 |
| 565 | 926682 | M | 20.13 | 28.25 | 131.20 | 1261.0 | 0. |
| 566 | 926954 | M | 16.60 | 28.08 | 108.30 | 858.1 | 0. |
| 567 | 927241 | M | 20.60 | 29.33 | 140.10 | 1265.0 | 0 |
| 568 | 92751 | B | 7.76 | 24.54 | 47.92 | 181.0 | 0. |

569 rows × 33 columns

```
In [77]: x=x.head(100)
```

Out[77]:

| | id | diagnosis | radius_mean | texture_mean | perimeter_mean | area_mean | smoothness_m |
|-----|----------|-----------|-------------|--------------|----------------|-----------|--------------|
| 0 | 842302 | M | 17.990 | 10.38 | 122.80 | 1001.0 | 0.1 |
| 1 | 842517 | M | 20.570 | 17.77 | 132.90 | 1326.0 | 0.0 |
| 2 | 84300903 | M | 19.690 | 21.25 | 130.00 | 1203.0 | 0.1 |
| 3 | 84348301 | M | 11.420 | 20.38 | 77.58 | 386.1 | 0.1 |
| 4 | 84358402 | M | 20.290 | 14.34 | 135.10 | 1297.0 | 0.1 |
| ... | ... | ... | ... | ... | ... | ... | ... |
| 95 | 86208 | M | 20.260 | 23.03 | 132.40 | 1264.0 | 0.0 |
| 96 | 86211 | B | 12.180 | 17.84 | 77.79 | 451.1 | 0.1 |
| 97 | 862261 | B | 9.787 | 19.94 | 62.11 | 294.5 | 0.1 |
| 98 | 862485 | B | 11.600 | 12.84 | 74.34 | 412.6 | 0.0 |
| 99 | 862548 | M | 14.420 | 19.77 | 94.48 | 642.5 | 0.0 |

100 rows × 33 columns

In [78]:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100 entries, 0 to 99
Data columns (total 33 columns):
#   Column                                Non-Null Count  Dtype
---  -
0   id                                     100 non-null    int64
1   diagnosis                             100 non-null    object
2   radius_mean                           100 non-null    float64
3   texture_mean                           100 non-null    float64
4   perimeter_mean                         100 non-null    float64
5   area_mean                             100 non-null    float64
6   smoothness_mean                       100 non-null    float64
7   compactness_mean                      100 non-null    float64
8   concavity_mean                        100 non-null    float64
9   concave points_mean                   100 non-null    float64
10  symmetry_mean                         100 non-null    float64
11  fractal_dimension_mean                100 non-null    float64
12  radius_se                             100 non-null    float64
13  texture_se                             100 non-null    float64
14  perimeter_se                           100 non-null    float64
15  area_se                               100 non-null    float64
16  smoothness_se                         100 non-null    float64
17  compactness_se                        100 non-null    float64
18  concavity_se                          100 non-null    float64
19  concave points_se                     100 non-null    float64
20  symmetry_se                           100 non-null    float64
21  fractal_dimension_se                  100 non-null    float64
22  radius_worst                          100 non-null    float64
23  texture_worst                         100 non-null    float64
24  perimeter_worst                       100 non-null    float64
25  area_worst                            100 non-null    float64
26  smoothness_worst                      100 non-null    float64
27  compactness_worst                     100 non-null    float64
28  concavity_worst                       100 non-null    float64
29  concave points_worst                  100 non-null    float64
30  symmetry_worst                        100 non-null    float64
31  fractal_dimension_worst                100 non-null    float64
32  Unnamed: 32                           0 non-null      float64
dtypes: float64(31), int64(1), object(1)
memory usage: 25.9+ KB
```

In [79]:

```
Out[79]: Index(['id', 'diagnosis', 'radius_mean', 'texture_mean', 'perimeter_mean',
               'area_mean', 'smoothness_mean', 'compactness_mean', 'concavity_mean',
               'concave points_mean', 'symmetry_mean', 'fractal_dimension_mean',
               'radius_se', 'texture_se', 'perimeter_se', 'area_se', 'smoothness_se',
               'compactness_se', 'concavity_se', 'concave points_se', 'symmetry_se',
               'fractal_dimension_se', 'radius_worst', 'texture_worst',
               'perimeter_worst', 'area_worst', 'smoothness_worst',
               'compactness_worst', 'concavity_worst', 'concave points_worst',
               'symmetry_worst', 'fractal_dimension_worst', 'Unnamed: 32'],
              dtype='object')
```

```
In [80]: d=x[['id', 'diagnosis', 'radius_mean', 'texture_mean', 'perimeter_mean',  
            'area_mean']]
```

Out[80]:

| | id | diagnosis | radius_mean | texture_mean | perimeter_mean | area_mean |
|-----|----------|-----------|-------------|--------------|----------------|-----------|
| 0 | 842302 | M | 17.990 | 10.38 | 122.80 | 1001.0 |
| 1 | 842517 | M | 20.570 | 17.77 | 132.90 | 1326.0 |
| 2 | 84300903 | M | 19.690 | 21.25 | 130.00 | 1203.0 |
| 3 | 84348301 | M | 11.420 | 20.38 | 77.58 | 386.1 |
| 4 | 84358402 | M | 20.290 | 14.34 | 135.10 | 1297.0 |
| ... | ... | ... | ... | ... | ... | ... |
| 95 | 86208 | M | 20.260 | 23.03 | 132.40 | 1264.0 |
| 96 | 86211 | B | 12.180 | 17.84 | 77.79 | 451.1 |
| 97 | 862261 | B | 9.787 | 19.94 | 62.11 | 294.5 |
| 98 | 862485 | B | 11.600 | 12.84 | 74.34 | 412.6 |
| 99 | 862548 | M | 14.420 | 19.77 | 94.48 | 642.5 |

100 rows × 6 columns

```
In [81]:
```

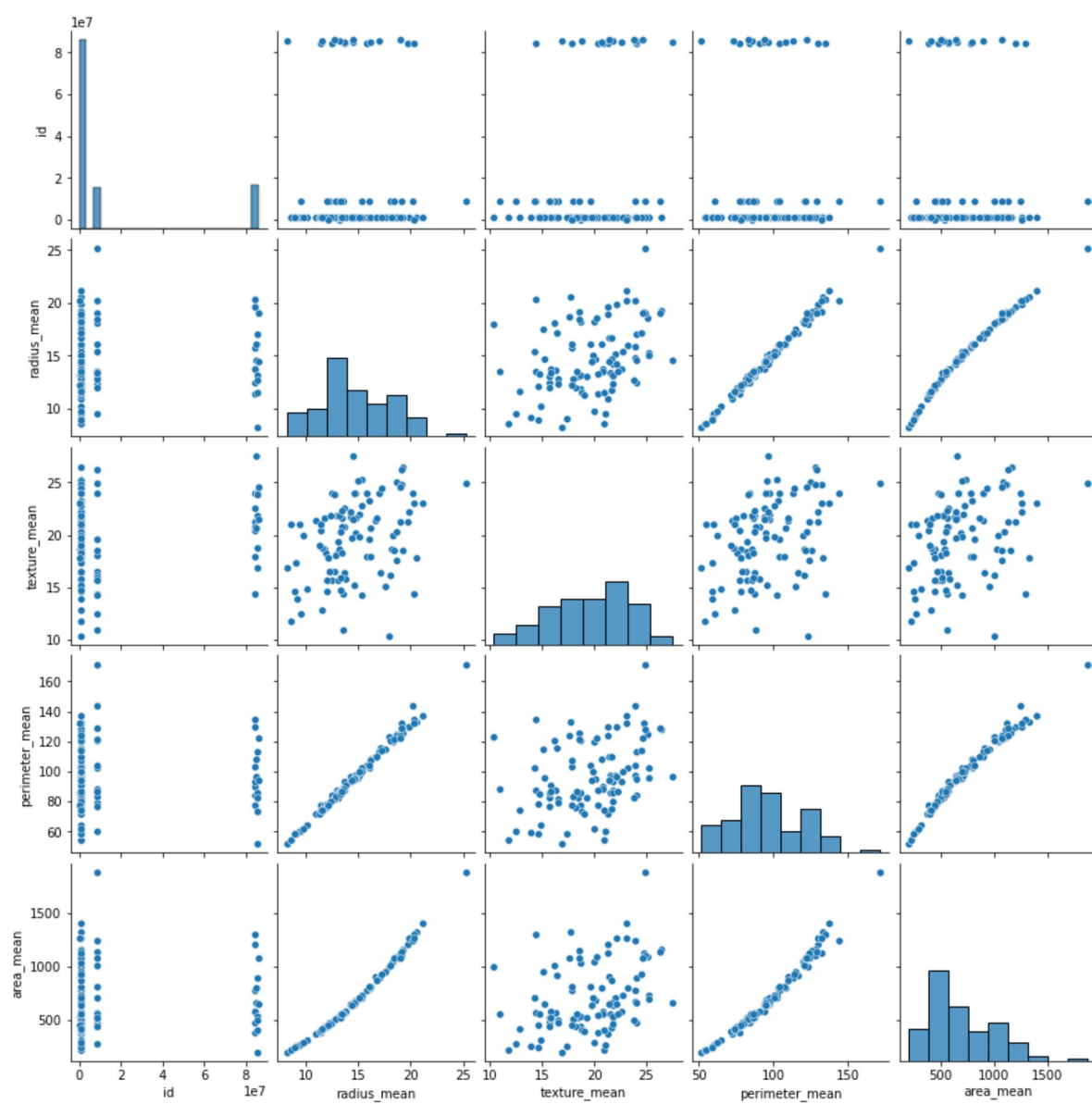
Out[81]:

| | id | radius_mean | texture_mean | perimeter_mean | area_mean | smoothness_mean |
|-------|--------------|-------------|--------------|----------------|-------------|-----------------|
| count | 1.000000e+02 | 100.000000 | 100.000000 | 100.000000 | 100.000000 | 100.000000 |
| mean | 1.547093e+07 | 14.707780 | 19.692200 | 96.471200 | 703.293000 | 0.102000 |
| std | 3.066549e+07 | 3.349245 | 3.759176 | 23.187471 | 320.152301 | 0.013100 |
| min | 8.571500e+04 | 8.196000 | 10.380000 | 51.710000 | 201.900000 | 0.073500 |
| 25% | 8.542642e+05 | 12.457500 | 16.760000 | 82.270000 | 476.800000 | 0.093400 |
| 50% | 8.593735e+05 | 14.335000 | 20.190000 | 94.365000 | 643.650000 | 0.101100 |
| 75% | 8.610460e+06 | 17.155000 | 22.150000 | 114.400000 | 916.875000 | 0.110300 |
| max | 8.613550e+07 | 25.220000 | 27.540000 | 171.500000 | 1878.000000 | 0.142500 |

8 rows × 7 columns

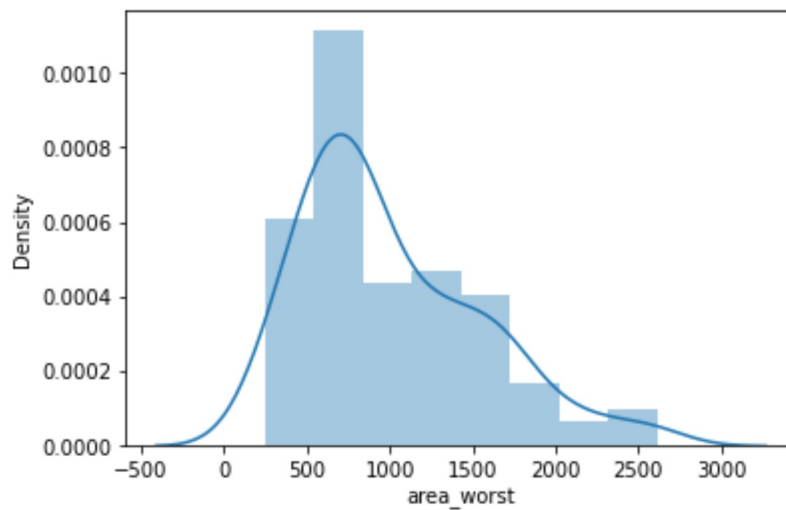
In [82]:

Out[82]: <seaborn.axisgrid.PairGrid at 0x2602b9dae20>



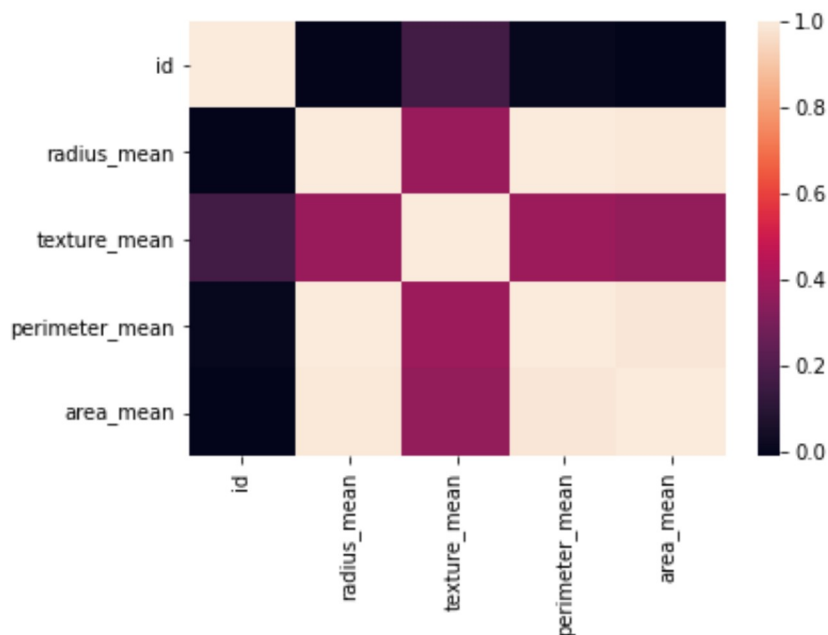
In [84]:

Out[84]: <AxesSubplot:xlabel='area_worst', ylabel='Density'>

In [91]: `x1=x[['id', 'radius_mean', 'texture_mean', 'perimeter_mean',`

In [92]:

Out[92]: <AxesSubplot:>

In [97]: `x=x1[['id', 'radius_mean', 'texture_mean', 'perimeter_mean',
 'area_mean']]`In [98]: `# to split my dataset into training and test data``from sklearn.model_selection import train_test_split``x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3)`

```
In [99]: from sklearn.linear_model import LinearRegression
```

```
lr=LinearRegression()
```

```
Out[99]: LinearRegression()
```

```
In [100]:
```

```
-1.4662049352409667e-11
```

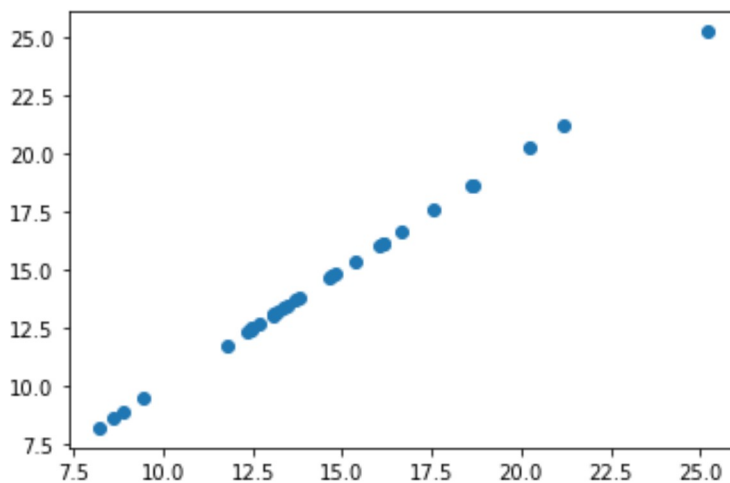
```
In [101]: coeff=pd.DataFrame(lr.coef_,x.columns,columns=['Co-efficient'])
```

```
Out[101]:
```

| | Co-efficient |
|----------------|---------------|
| id | 9.486571e-19 |
| radius_mean | 1.000000e+00 |
| texture_mean | 1.554636e-16 |
| perimeter_mean | -2.494632e-16 |
| area_mean | 6.534537e-17 |

```
In [102]: prediction=lr.predict(x_test)
```

```
Out[102]: <matplotlib.collections.PathCollection at 0x2602cb39670>
```



```
In [103]:
```

```
Out[103]: 1.0
```

```
In [ ]:
```