

## profit\_estimation\_of\_companies-master

```
In [1]: #Importing Libraries

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
%matplotlib inline
```

```
In [2]: data = pd.read_csv('profit_estimation_of_companies-master/1000_Companies.csv')
#Loading Data Set

X = data.iloc[:, :-1].values    #Selecting all Columns except PROFIT (index = -1)
y = data.iloc[:, -1].values    #Selecting Last column PROFIT (index = -1 or 4)

data.columns
```

```
Out[2]: Index(['R&D Spend', 'Administration', 'Marketing Spend', 'State', 'Profit'],
dtype='object')
```

```
In [3]: #Mapping Corr in Data

sb.heatmap(data.corr())

# ax = plt.subplot(2,2,1)

# sb.regplot(x='R&D Spend',y='Profit',data=data)

# ax = plt.subplot(2,2,2)

# sb.regplot(x='Administration',y='Profit',data=data,color='k')

# ax = plt.subplot(2,2,3)

# sb.regplot(x='Marketing Spend',y='Profit',data=data,color='r')

# ax = plt.subplot(2,2,4)

# sb.regplot(x='Profit',y='Profit',data=data,color='g')

# # sb.countplot(x='R&D',data = 'data')
```

Out[3]: <matplotlib.axes.\_subplots.AxesSubplot at 0x1d30de51e48>



```
In [4]: from sklearn.preprocessing import LabelEncoder, OneHotEncoder
labelencoder = LabelEncoder()
X[:,3] = labelencoder.fit_transform(X[:,3])

# print(X)

onehotencoder = OneHotEncoder(categorical_features = [3])
X = onehotencoder.fit_transform(X).toarray()

# print(X[0].size)

# data.head(5)
```

C:\Users\Lenovo\Anaconda3\lib\site-packages\sklearn\preprocessing\\_encoders.py:371: FutureWarning: The handling of integer data will change in version 0.22. Currently, the categories are determined based on the range [0, max(value s)], while in the future they will be determined based on the unique values. If you want the future behaviour and silence this warning, you can specify "categories='auto'".

In case you used a LabelEncoder before this OneHotEncoder to convert the categories to integers, then you can now use the OneHotEncoder directly.

warnings.warn(msg, FutureWarning)

C:\Users\Lenovo\Anaconda3\lib\site-packages\sklearn\preprocessing\\_encoders.py:392: DeprecationWarning: The 'categorical\_features' keyword is deprecated in version 0.20 and will be removed in 0.22. You can use the ColumnTransformer instead.

"use the ColumnTransformer instead.", DeprecationWarning)

```
In [5]: ##### Avoiding dummy variable trap
X = X[:,1:]
```

```
In [6]: ##Splitting Data into Train and Test Data

from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=.9,random_state=0)

##### Crerating a LinearRegression Object

lin_reg = LinearRegression()

# Traing The Model with data

lin_reg.fit(X_train,y_train)
```

```
Out[6]: LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None,
normalize=False)
```

```
In [7]: y_pre = lin_reg.predict(X_test)
        print(y_pre)
```

```
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160815.78105648	97946.95311986	144790.73004788	51004.61249999
127897.71636399	141792.77868862	126843.64263962	182296.79626734
55788.79165019	76641.94201595	86101.59923224	178829.37282791]



In [8]: ##### Calculation of Coefficient and Intercepts

```
print(lin_reg.coef_)  
print(lin_reg.intercept_)
```

```
[-5.37705197  8.3584841  0.50565554  0.18093273  0.16671066]  
17592.22213516223
```

In [9]: # R2 squire value

```
from sklearn.metrics import r2_score  
print(r2_score(y_test,y_pre))
```

```
0.8924625667351724
```

In [ ]: