In [15]:
```
import pandas as pd
import numpy as np
```

In [16]:
```
data = pd.read_csv(r'C:\Users\Raghavendra K\Downloads\Multiple Linear Regression Dataset.csv')
```

In [17]:
```
data.head(10)
```

Out[17]:

| | Transportation | Stationary | Packaging | Revenue |
|---|---|---|---|---|
| **0** | 1000 | 1200 | 150 | 1203 |
| **1** | 1200 | 1150 | 300 | 1603 |
| **2** | 1400 | 1000 | 450 | 2003 |
| **3** | 1000 | 1050 | 600 | 2403 |
| **4** | 1800 | 1000 | 1000 | 2803 |
| **5** | 1000 | 950 | 900 | 3203 |
| **6** | 2200 | 900 | 1050 | 3603 |
| **7** | 2400 | 1000 | 1200 | 4003 |
| **8** | 1000 | 800 | 1350 | 4403 |
| **9** | 2800 | 750 | 1000 | 4803 |

In [18]:
```
data.shape
```

Out[18]:
```
(24, 4)
```

In [19]:
```
data.corr()['Revenue']
```

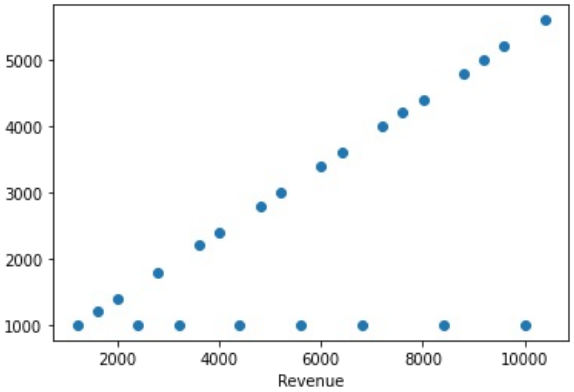
Out[19]:
```
Transportation    0.650058
Stationary       -0.890634
Packaging         0.858355
Revenue           1.000000
Name: Revenue, dtype: float64
```

In [20]:
```
import matplotlib.pyplot as plt
```

In [21]:
```
plt.scatter(data['Revenue'], data['Transportation'])
plt.xlabel('Revenue')
plt.ylable('Transportation')
plt.show()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Input In [21], in <cell line: 3>()
      1 plt.scatter(data['Revenue'], data['Transportation'])
      2 plt.xlabel('Revenue')
----> 3 plt.ylable('Transportation')
      4 plt.show()

AttributeError: module 'matplotlib.pyplot' has no attribute 'ylable'
```




In [22]:
```
from sklearn.linear_model import LinearRegression
model = LinearRegression()
model.fit(data[['Transportation','Stationary','Packaging']], data['Revenue'])
```

Out[22]:
```
▾ LinearRegression
LinearRegression()
```

# Making Predictions

In [24]:
```
#prediction 1
```

In [24]:
```
#prediction 1
#model.predict ([[x1, x2, x3]])
model.predict([[4200,1000,500]])
```

```
C:\Users\Raghavendra K\AppData\Local\Programs\Python\Python310\lib\site-packages\sklearn\base.py:450: UserWarni
ng: X does not have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(
```

Out[24]:
```
array([3693.69302921])
```

In [25]:
```
#prediction 1
#model.predict ([[x1, x2, x3]])
model.predict([[10000, 9000,20000]])
```

```
C:\Users\Raghavendra K\AppData\Local\Programs\Python\Python310\lib\site-packages\sklearn\base.py:450: UserWarni
ng: X does not have valid feature names, but LinearRegression was fitted with feature names
  warnings.warn(
```

Out[25]:
```
array([239.16975883])
```

In [27]:
```
#check the accuracy of model
model.score(data[['Transportation','Stationary','Packaging']], data['Revenue'])
```

Out[27]:
```
0.9090591387521105
```

In [28]:
```
#check the coefficient-this is called m1 value
model.coef_
```

Out[28]:
```
array([ 0.3047125 , -3.60438683,  1.21093532])
```

In [29]:
```
#check the intercept (b)
model.intercept_
```

Out[29]:
```
5412.819686364775
```

In [30]:
```
# check the Linear equation- y =m1x1+m2x2+m3x3+b
y=0.3047125*4200+-3.60438683*1000+1.21093532*2500+5412.819686364775
```

In [31]:
```
print(y)
```

```
6115.563656364775
```

In [ ]: