

In [19]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn import linear_model
```

In [25]:

```
df_1=pd.read_csv("Excercise1.csv")
df_1.head(10)
```

Out[25]:

	year	per
0	1970	3399.299037
1	1971	3768.297935
2	1972	4251.175484
3	1973	4804.463248
4	1974	5576.514583
5	1975	5998.144346
6	1976	7062.131392
7	1977	7100.126170
8	1978	7247.967035
9	1979	7602.912681

In [13]:

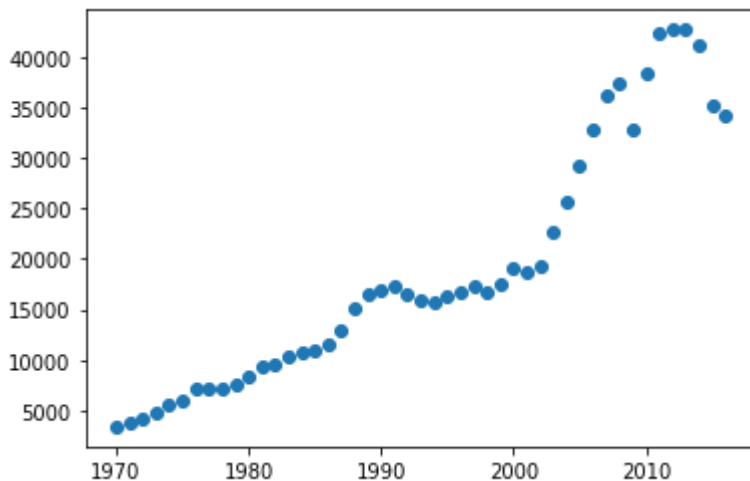
```
%matplotlib inline
```

In [26]:

```
plt.scatter(df_1.year,df_1.per)
```

Out[26]:

<matplotlib.collections.PathCollection at 0x12d74a48>

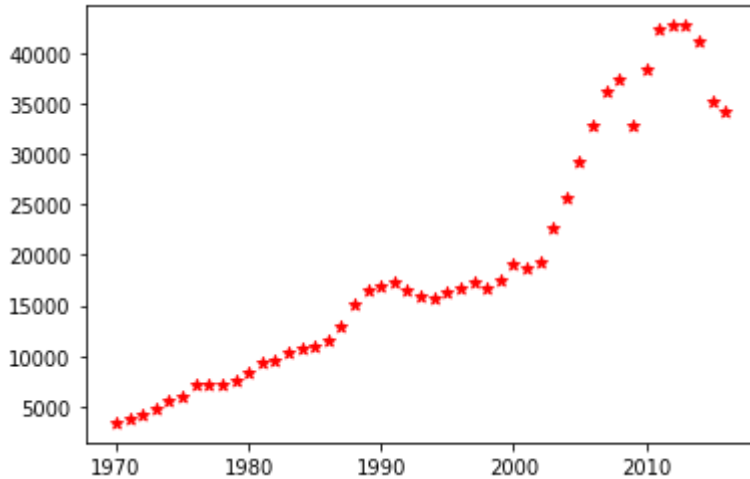


In [29]:

```
plt.scatter(df_1.year,df_1.per, color="red", marker="*")
```

Out[29]:

<matplotlib.collections.PathCollection at 0x12ee2908>

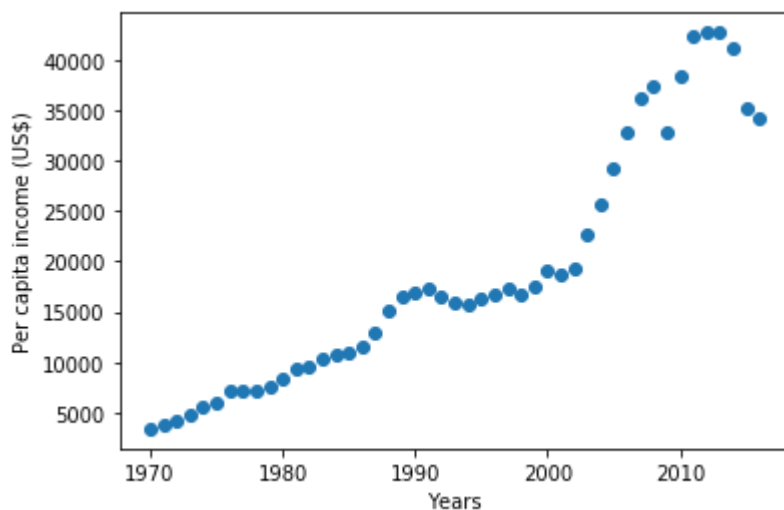


In [31]:

```
plt.xlabel("Years")  
plt.ylabel("Per capita income (US$)")  
plt.scatter(df_1.year,df_1.per)
```

Out[31]:

<matplotlib.collections.PathCollection at 0x13072cc8>



In [37]:

```
reg=linear_model.LinearRegression()  
reg.fit(df_1[['year']], df_1.per)
```

Out[37]:

LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)

In [38]:

```
reg.predict([[2020]])
```

Out[38]:

```
array([41288.69409442])
```

In [40]:

```
reg.coef_
```

Out[40]:

```
array([828.46507522])
```

In [41]:

```
reg.intercept_
```

Out[41]:

```
-1632210.7578554575
```

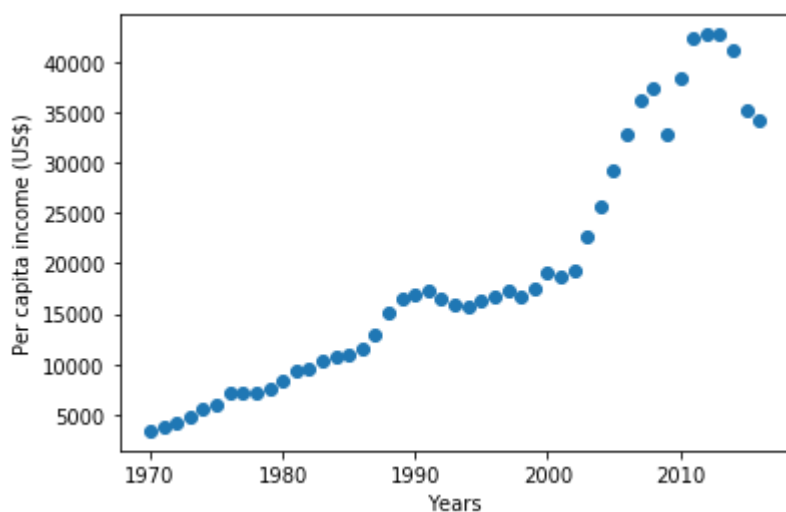
adding the Regression line on the scatter plot

In [42]:

```
# Scatter plot code  
#plt.xlabel("Years")  
#plt.ylabel("Per capita income (US$)")  
#plt.scatter(df_1.year, df_1.per)
```

Out[42]:

```
<matplotlib.collections.PathCollection at 0x13e70848>
```

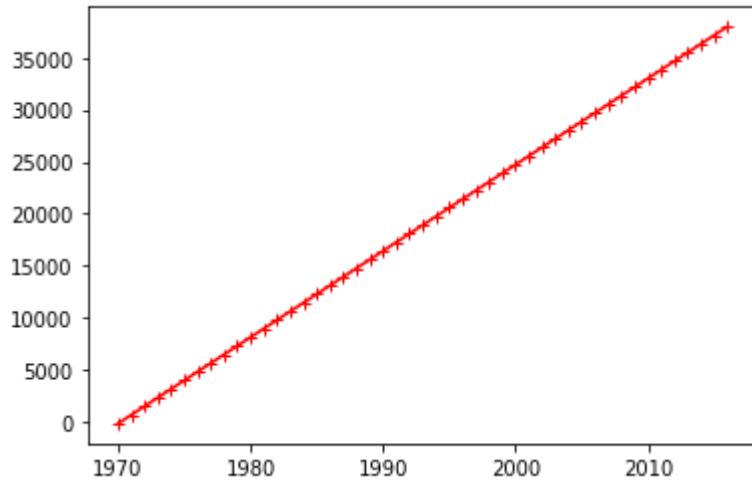


In [44]:

```
# Regression line code  
#plt.plot(df_1.year, reg.predict(df_1[['year']]), color='red', marker="+")
```

Out[44]:

[<matplotlib.lines.Line2D at 0x1234a208>]



In [45]:

```
plt.xlabel("Years")  
plt.ylabel("Per capita income (US$)")  
plt.scatter(df_1.year, df_1.per)  
plt.plot(df_1.year, reg.predict(df_1[['year']]), color='red', marker="+")
```

Out[45]:

[<matplotlib.lines.Line2D at 0x12397888>]

