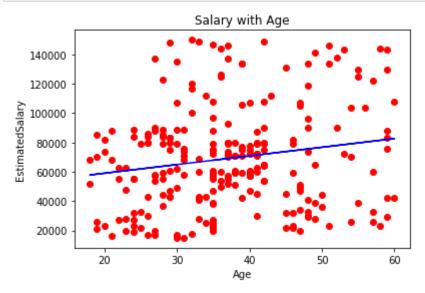# Single Linear Regression

```
In [1]: import numpy as np
        import pandas as pd
        import matplotlib.pyplot as plt
        from sklearn.linear_model import LinearRegression
        from sklearn import linear_model
```

```
In [2]: user=pd.read_csv("E:\\Assignment Regression\\User_Data.csv")
        user
```

Out[2]:

	User ID	Gender	Age	EstimatedSalary	Purchased
0	15624510	Male	19	19000	0
1	15810944	Male	35	20000	0
2	15668575	Female	26	43000	0
3	15603246	Female	27	57000	0
4	15804002	Male	19	76000	0
...	...	...	...	...	...
395	15691863	Female	46	41000	1
396	15706071	Male	51	23000	1
397	15654296	Female	50	20000	1
398	15755018	Male	36	33000	0
399	15594041	Female	49	36000	1

400 rows × 5 columns

```
In [41]: x=user.iloc[:,2].values.reshape(-1,1)
         y=user.iloc[:,3].values.reshape(-1,1)
```

```
In [42]: from sklearn.model_selection import train_test_split
         x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.4,
                                                             random_state=1)
```

```
In [43]: model=linear_model.LinearRegression()
         model.fit(x_train, y_train)
```

Out[43]: LinearRegression(copy_X=True, fit_intercept=True, n_jobs=None, normalize=False)

```
In [49]: y_pred = model.predict(x_test)
```

```
In [50]:  plt.scatter(x_train,y_train,color = 'red')
          plt.plot(x_train,model.predict(x_train),color = 'blue')
          plt.title('Salary with Age')
          plt.xlabel('Age')
          plt.ylabel('EstimatedSalary')
          plt.show()
```



```
In [51]:  model.predict([[25]])
```

```
Out[51]:  array([[61989.5173036]])
```

```
In [52]:  model.predict([[40]])
```

```
Out[52]:  array([[70849.55697567]])
```

```
In [53]:  model.predict([[18]])
```

```
Out[53]:  array([[57854.8321233]])
```

```
In [ ]:
```