In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
```

In [2]:
```
ds=pd.read_excel(r"Salary.xlsx")
ds
```

Out[2]:

	Experences	Salary
0	1.1	39343
1	1.3	46205
2	1.5	37731
3	2.0	43525
4	2.2	39891
5	2.9	56642
6	3.0	60150
7	3.2	54445
8	3.2	64445
9	3.7	57189
10	3.9	63218
11	4.0	55794
12	4.0	56957
13	4.1	57081
14	4.5	61111
15	4.9	67938
16	5.1	66029
17	5.3	83088
18	5.9	81363
19	6.0	93940
20	6.8	91738
21	7.1	98273
22	7.9	101302
23	8.2	113812
24	8.7	109431
25	9.0	105582
26	9.5	116969
27	9.6	112635
28	10.3	122391
29	10.5	121872

In [3]:
```
ds.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 30 entries, 0 to 29
Data columns (total 2 columns):
 #   Column      Non-Null Count  Dtype  
---  ------      --------------  -----  
 0   Experences  30 non-null     float64
 1   Salary      30 non-null     int64  
dtypes: float64(1), int64(1)
memory usage: 608.0 bytes
```

In [4]:
```
ds.describe()
```

Out[4]:

	Experences	Salary
count	30.000000	30.000000
mean	5.313333	76003.000000
std	2.837888	27414.429785
min	1.100000	37731.000000
25%	3.200000	56720.750000
50%	4.700000	65237.000000
75%	7.700000	100544.750000
max	10.500000	122391.000000

In [5]:
```
ds.isnull().sum()
```

Out[5]:
```
Experences    0
Salary        0
dtype: int64
```

In [6]:
```
ds.shape
```

Out[6]:
```
(30, 2)
```

In [7]:
```
ds.dropna(inplace=True)
```

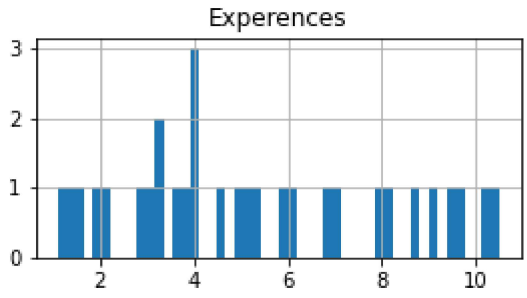
In [8]:
```
ds.head()
```

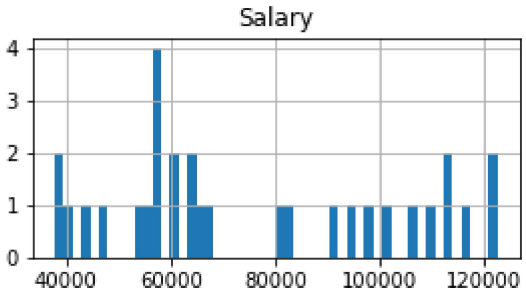
Out[8]:

	Experences	Salary
0	1.1	39343
1	1.3	46205
2	1.5	37731
3	2.0	43525
4	2.2	39891

In [9]:
```
ds.hist(bins=50, figsize=(10,2))
```

Out[9]:
```
array([[<AxesSubplot:title={'center':'Experences'}>,
        <AxesSubplot:title={'center':'Salary'}>]], dtype=object)
```





In [10]:
```
a=ds.drop("Salary",axis=1)
a
```

Out[10]:

	Experences
0	1.1
1	1.3
2	1.5
3	2.0
4	2.2
5	2.9
6	3.0
7	3.2
8	3.2
9	3.7
10	3.9
11	4.0
12	4.0
13	4.1
14	4.5
15	4.9
16	5.1
17	5.3
18	5.9
19	6.0
20	6.8
21	7.1
22	7.9
23	8.2
24	8.7
25	9.0
26	9.5
27	9.6
28	10.3
29	10.5

In [11]:
```
y=ds["Salary"]
y
```

Out[11]:
```
0      39343
1      46205
2      37731
3      43525
4      39891
5      56642
6      60150
7      54445
8      64445
9      57189
10     63218
11     55794
12     56957
13     57081
14     61111
15     67938
16     66029
17     83088
18     81363
19     93940
20     91738
21     98273
22    101302
23    113812
24    109431
25    105582
26    116969
27    112635
28    122391
29    121872
Name: Salary, dtype: int64
```

In [12]:
```
from sklearn.model_selection import train_test_split
a_train, a_test, y_train, y_test = train_test_split(a, y, test_size=0.2)
```

In [13]:
```
print("a_train shape:",a_train.shape)
print("a_test shape:",a_test.shape)
print("y_train shape:",y_train.shape)
print("y_test shape:",y_test.shape)
```

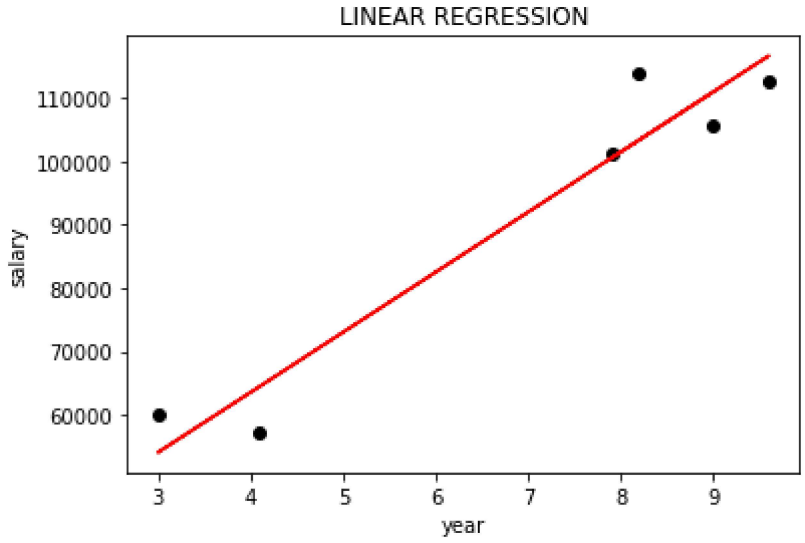
```
a_train shape: (24, 1)
a_test shape: (6, 1)
y_train shape: (24,)
y_test shape: (6,)
```

In [14]:
```
from sklearn.linear_model import LinearRegression
reg=LinearRegression()
reg.fit(a_train,y_train)
```

Out[14]:
```
LinearRegression()
```

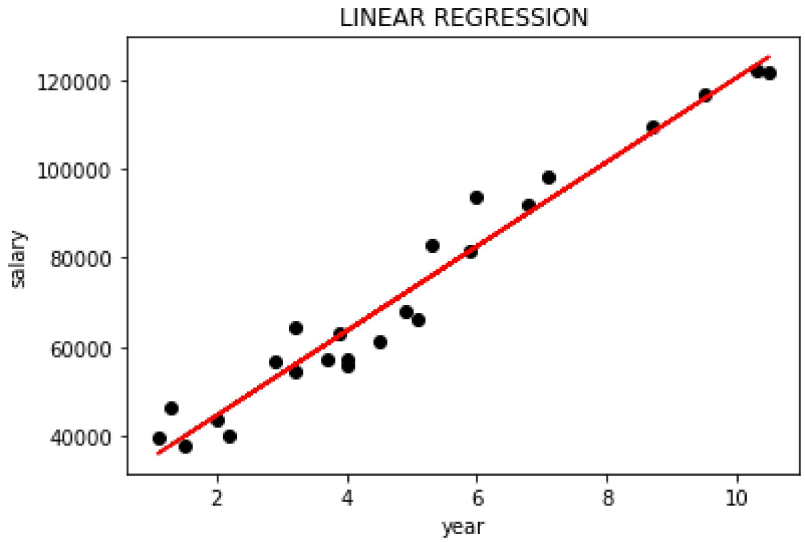
In [15]:
```
y_predict=reg.predict(a_test)
```

In [21]:
```
plt.scatter(a_test,y_test,color="black")
plt.plot(a_test,y_predict,color="red")
plt.xlabel("year")
plt.ylabel("salary")
plt.title("LINEAR REGRESSION")
plt.show()
```



In [17]:
```
a_predict = reg.predict(a_train)
```

In [18]:
```
plt.scatter(a_train,y_train,color="black")
plt.plot(a_train,a_predict,color="red")
plt.xlabel("year")
plt.ylabel("salary")
plt.title("LINEAR REGRESSION")
plt.show()
```



In [19]:
```
accuracy = reg.score(a_test,y_test)
print(accuracy*100,'%')
```

```
92.75204920893955 %
```

In [ ]:
```

```