ashish kumar 2019UCO1518 ML assignment 2

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
data = pd.read_csv("/Linear_reg_iris.csv")
data
```

	X	Y
0	0.08	1.472
1	0.52	1.802
2	0.60	1.548
3	0.22	1.390
4	0.05	2.141
...	...	...
995	0.41	2.245
996	0.71	3.471
997	0.06	0.796
998	0.40	2.406
999	0.48	1.870

1000 rows × 2 columns

```
X= data.X
```

```
^
```

```
0      0.08
1      0.52
2      0.60
3      0.22
4      0.05
       ...
995    0.41
996    0.71
997    0.06
998    0.40
999    0.48
Name: X, Length: 1000, dtype: float64
```

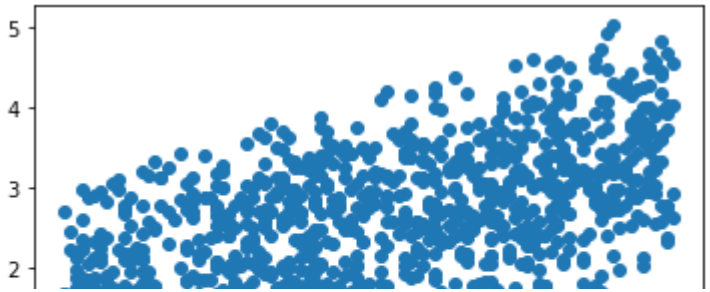
```
Y= data.Y
```

```
Y
```

```
0      1.472
1      1.802
2      1.548
3      1.390
4      2.141
       ...
995    2.245
996    3.471
997    0.796
998    2.406
999    1.870
Name: Y, Length: 1000, dtype: float64
```

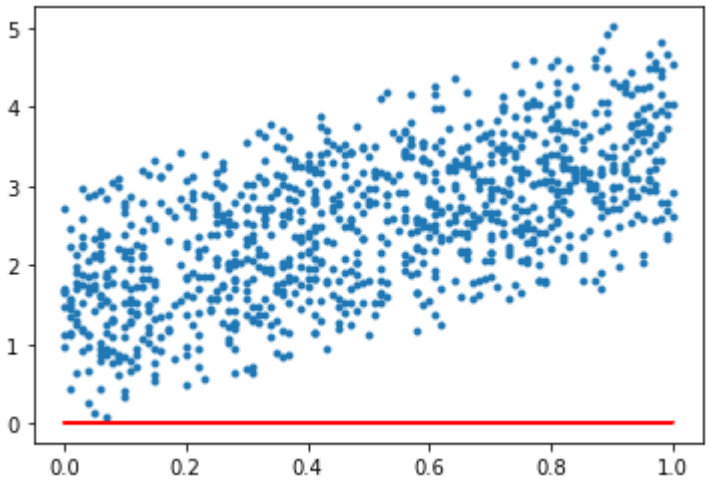
```
plt.scatter(X, Y)
```

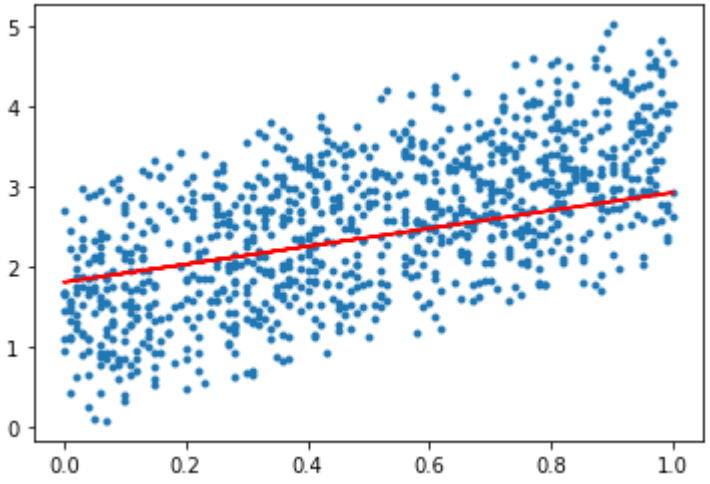
```
<matplotlib.collections.PathCollection at 0x7f0c0202a090>
```

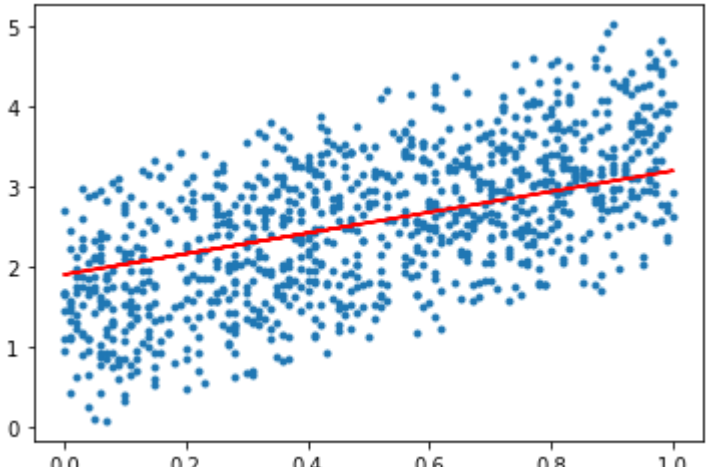



```
m = 0
c = 0
epochs = 10000
L = 0.001
n = float(len(X))

for i in range(epochs):
  Y_pred = m*X+c
  dm = -(2/n) * sum(X*(Y-Y_pred))
  dc = -(2/n) * sum(Y-Y_pred)
  m = m - L*dm
  c = c - L*dc
  if(i%1000==0):
    Y_pred = m*X + c
    plt.scatter(X, Y, marker = '.')
    plt.plot(X, Y_pred, color='red')
    plt.show()
print(m, c)
```


5
4
3
2
1
0
0.0
0.2
0.4
0.6
0.8
1.0


5
4
3
2
1
0
0.0
0.2
0.4
0.6
0.8
1.0


5
4
3
2
1
0
0.0
0.2
0.4
0.6
0.8
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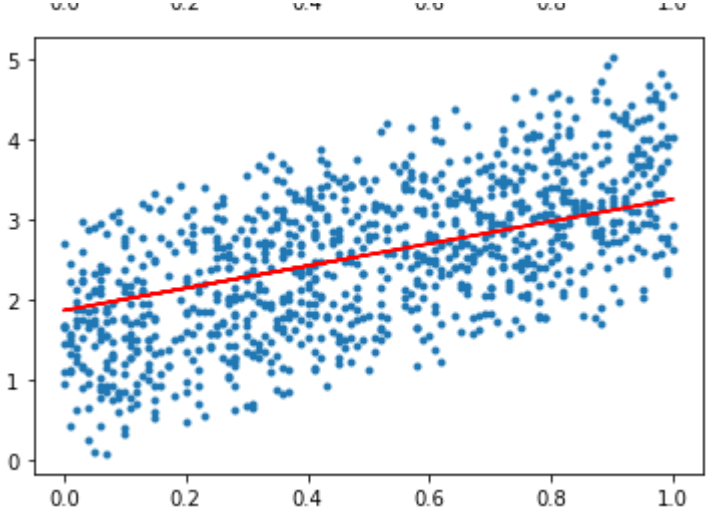
0.0
0.2
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0.6
0.8
1.0
0
1
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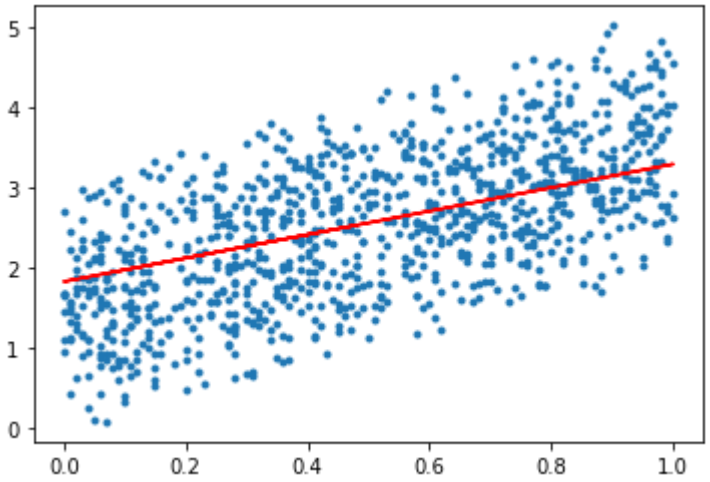
0.0
0.2
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1.0
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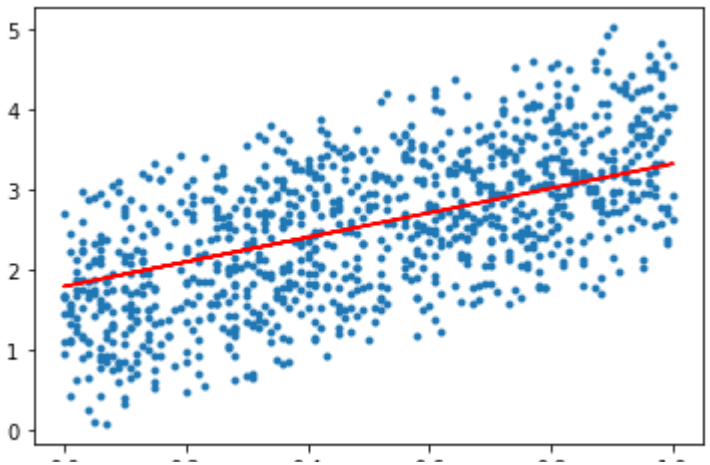
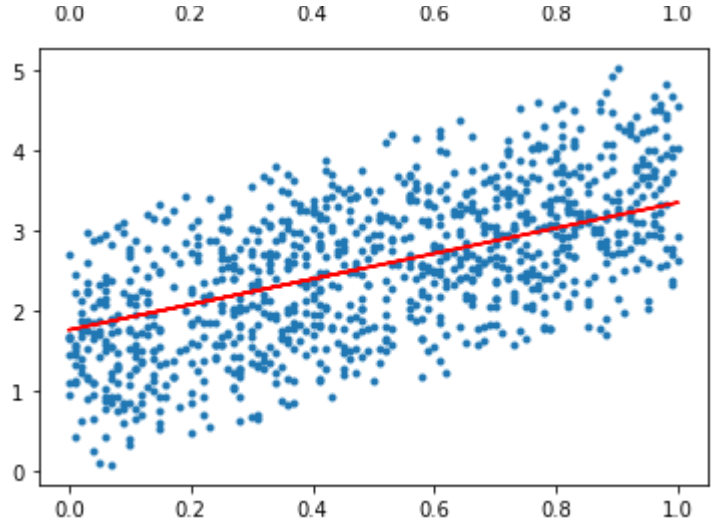

0
1
2
3
4
5


0.0
0.2
0.4
0.6
0.8
1.0
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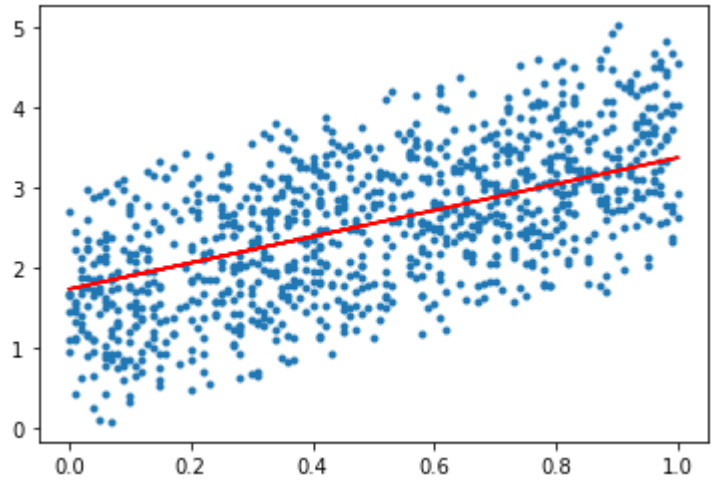
0.0
0.2
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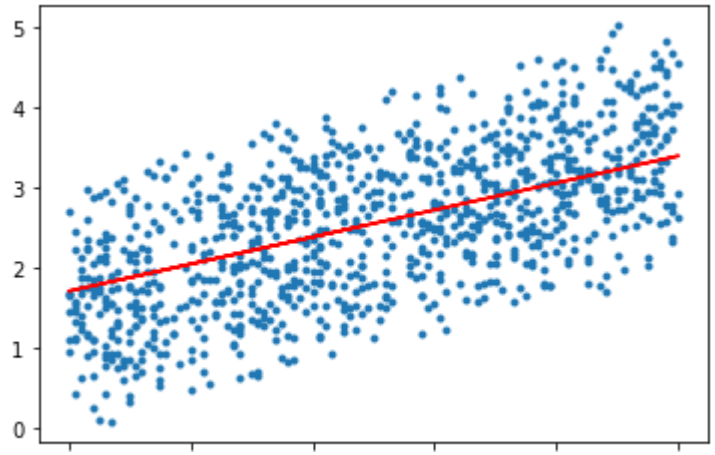
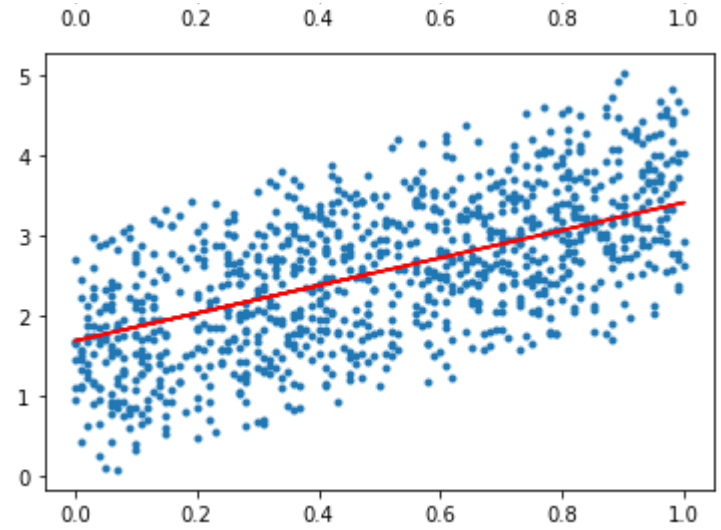

0.0
0.2
0.4
0.6
0.8
1.0
0
1
2
3
4
5




```
1.7569437433964399 1.6740025772702152
```

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