EXPERIMENT-9

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Branch: BE CSE **Section/Group:** 21AML-9/A
Semester: 3 **Date of Performance:** 15-11-22

Subject Name: Python for Machine Learning
Subject Code: 21CSH-238

1. Aim/Overview of the practical:

Create a linear regression model for Salary Dataset.

2. Code and Output:

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

In [2]:
```
df=pd.read_csv("E:\CU-SECOND_YEAR\PML\Salary_Data.csv")
df.head()
```

Out[2]:

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

In [15]:
```
df=pd.read_csv('E:\CU-SECOND_YEAR\PML\Salary_Data.csv')
X=df.iloc[:,:-1].values
Y=df.iloc[:,1].values
df.tail()
```

Out[15]:

	YearsExperience	Salary
25	9.0	105582
26	9.5	116969
27	9.6	112635
28	10.3	122391
29	10.5	121872

In [16]:
```
from sklearn.model_selection import train_test_split
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.3,random_state=0)
```

In [17]:
```
model=LinearRegression()
model.fit(X_train,Y_train)
```

Out[17]:
```
LinearRegression()
```

In [18]:
```
prediction=model.predict(X_test)
prediction
```

Out[18]:
```
array([ 40817.78327049, 123188.08258899,  65154.46261459,  63282.41035735,
       115699.87356004, 108211.66453108, 116635.89968866,  64218.43648597,
        76386.77615802])
```

In [20]:
```
regressor=LinearRegression()
regressor.fit(X_train,Y_train)
```

Out[20]:
```
LinearRegression()
```

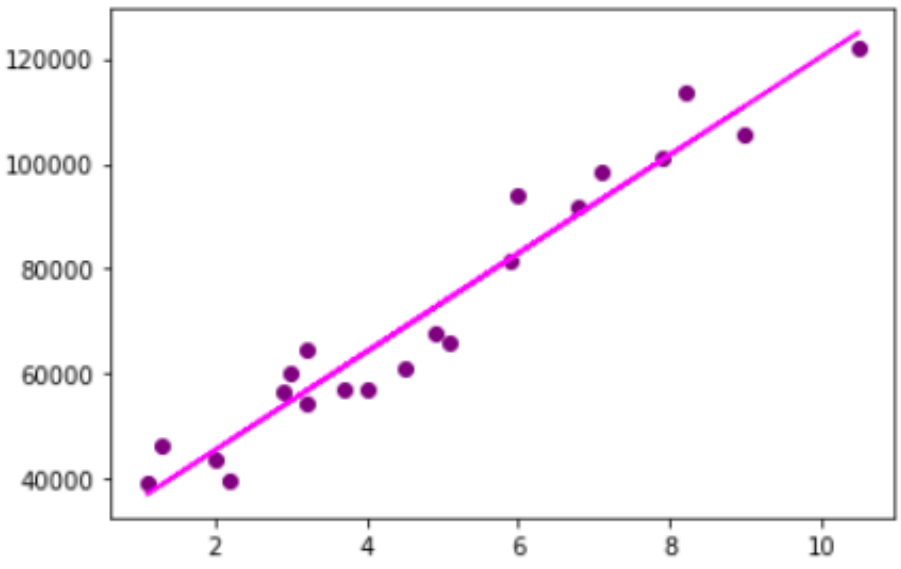
In [ ]:
```

```

In [23]:
```
plt.scatter(X_train,Y_train,color='purple')
plt.plot(X_train,regressor.predict(X_train),color='magenta')
```

Out[23]:
```
[<matplotlib.lines.Line2D at 0x2139a2b38b0>]
```

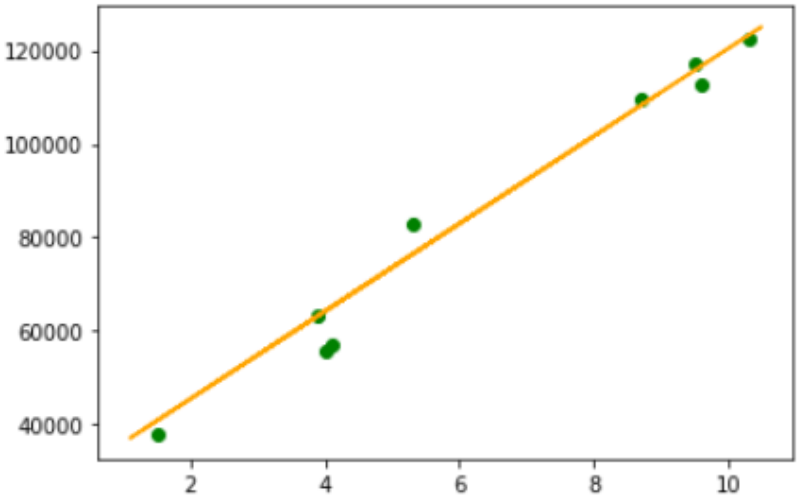
In [23]:
```
plt.scatter(X_train,Y_train,color='purple')
plt.plot(X_train,regressor.predict(X_train),color='magenta')
```

Out[23]:
```
[<matplotlib.lines.Line2D at 0x2139a2b38b0>]
```



In [25]:
```
plt.scatter(X_test,Y_test,color='green')
plt.plot(X_train,regressor.predict(X_train),color='orange')
```

Out[25]:
```
[<matplotlib.lines.Line2D at 0x2139a35b760>]
```



In [ ]:

Learning outcomes (What I have learnt):

- I have learnt about the python programming language.
- I have learnt about linear regression model.
- I have learnt about different libraries and packages.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	PERFORMANCE		12
2.	WORKSHEET		08
3.	VIVA		10