JYOTHY INSTITUTE OF TECHNOLOGY
Affiliated to VTU, Belagavi
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
Accredited by NBA, New Delhi

ASSIGNMENT 1

Course Code	18CS71
Course Name	Artificial Intelligence and Machine Learning

USN	1JT18CS002
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Semester	7
Academic Year	2021-2022

Signature of student   Signature of Instructor

Department of Computer Science and Engineering
Jyothy Institute of Technology, Bangalore – 560 082

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Course Name	Artificial Intelligence and Machine Learning
Semester	7
Program	Computer Science and Engineering

01.The data set contains the house price for Allahabad.
 The data set is given in Annexure A.
 Design and develop a python program to
 - Print the value of co-eff and intercept.
 - Predict the price of 985 sqft and 1225 sqft.

 Use appropriate python library.
 Attach the screen shot.

Annexure A
House Price in Allahabad

Area(in sq ft)	Price (Rs in lakhs)
1000	36
950	34
800	30
650	28
720	30
850	31
1400	60
1450	70
1200	54

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1250	65
900	37
930	40
820	37
780	32
980	35
1050	43
1280	62
1320	67
1430	80
1100	56

PROGRAM:

```python
import numpy as np
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression

x=np.array([1000,950,800,650,720,850, 1400, 1450, 1200, 1250, 900,
930, 820, 780, 980, 1050, 1280, 1320, 1430, 1100])

y=np.array([36,34, 30,28,30,31, 60,70,54, 65,37,40, 37,32, 35,43,
62, 67, 80, 5])

linearRegression=LinearRegression()
x=x.reshape(-1,1)
linearRegression.fit(x,y)

print(linearRegression.coef_)

print(linearRegression.intercept_)

y1=(linearRegression.coef_*985)+linearRegression.intercept_
print(y1)

y2=(linearRegression.coef_*1225)+linearRegression.intercept_
print(y2)
```

OUTPUT:

```
Coefficient [0.05930561]
Intercept -18.055751485165466
Predicted price of 985sqft 1
Predicted price of 1225sqft [54.59362106]

In [35]:
```

2. The data set contains the house price for Mysore.
 The data set is given in Annexure B.
 Clean the data for any missing values.
 Design and develop a python program to
 a) Predict the price of a house of 10000 sqft, 2 bedroom, 4
    years old and 1 car parking.
 b) Predict the price of a house of 800 sqft, 2 bedrooms, 5
    years old and 1 car parking.

 Use appropriate python library
 Attach the screenshot.

Annexure B
House prices in Mysore

Area(sqft)	bedrooms	age	car parking	price(Rs in lakhs)
1000	2	5	1	36
950	2	3	1	34
800	2	7	0	30
650	1	6	0	28
720		3	0	30
850	2	4	0	31
1400	3	5	1	60
1450	3	8	1	70
1200	3	7	1	54
1250	3	5	1	65
900		6	0	37

930	1	3	0	40
820	1	5	0	37
780	1	3	0	32
980	2	8	0	35
1050	2	6	1	43
1280	2	5	1	62
1320	3	4	1	67
1430	3	5	1	80
1100	2	7	1	56

PROGRAM:

```
import numpy as np
import pandas as pd
import math
import matplotlib.pyplot as plt
from sklearn.linear_model import LinearRegression
df=pd.read_csv("assign1of2.csv")


median_bedrooms=math.floor(df.bedrooms.median())
df.bedrooms=df.bedrooms.fillna(median_bedrooms)


linearRegression=LinearRegression()


linearRegression.fit(df[['area','bedrooms','age','car
parking']],df.price)


print("Coefficient",linearRegression.coef_)
```
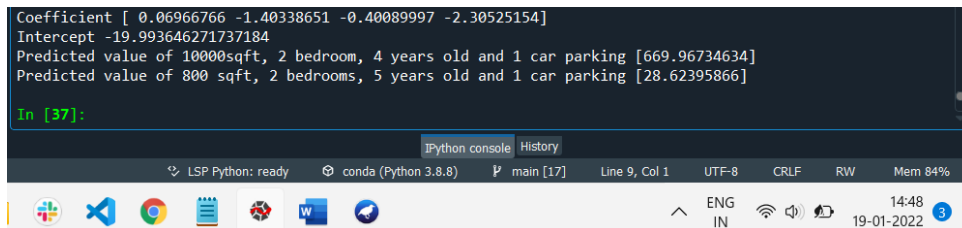
```
print("Intercept",linearRegression.intercept_)

print("Predicted value of 10000sqft, 2 bedroom, 4 years old and 1
car parking",linearRegression.predict([[10000,2,4,1]]))

print("Predicted value of 800 sqft, 2 bedrooms, 5 years old and 1
car parking",linearRegression.predict([[800,2,5,1]]))
```

OUTPUT:

3. For the diabetes data set given in Annexure C,
 Design and develop a python program to
 Classify the person with age 22 and 53 into diabetic or not.

 Use appropriate python library.
 Attach the screen shot.

Annexure C
Diabetes dataset.

Age	Diabetic
22	No
25	No
47	Yes
52	No
46	Yes
56	Yes
55	No
60	Yes
62	Yes

61	Yes
18	Yes
28	No
27	No
29	No
49	Yes
55	Yes
25	Yes
58	Yes
19	No
18	No
21	No
26	No

PROGRAM:

```
import pandas as pd

import numpy as np

data = pd.read_csv('Diabetes.csv')

X=data[['Age']]

Y=data['Diabetic']


from sklearn import preprocessing as ps

label_encoder = ps.LabelEncoder()

Y=label_encoder.fit_transform(Y)


from sklearn.naive_bayes import GaussianNB as GNB

model = GNB()

model.fit(X,Y)

tests = [22,53]
```

```
for test in tests:

    if(model.predict([[test]])[0]==1):

        print("Person of age {} years is classified as
diabetic".format(test))

    else:

        print("Person of age {} years is classified as not
diabetic".format(test))
```

OUTPUT:

```
Person of age 22 years is classified as not diabetic
Person of age 53 years is classified as diabetic
```