

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

```
df = pd.read_csv("/content/diabetes.csv")
```

```
df.head()
```



	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigree
0	6	148	72	35	0	33.6	
1	1	85	66	29	0	26.6	
2	8	183	64	0	0	23.3	
3	1	89	66	23	94	28.1	
4	0	137	40	35	168	43.1	

Next steps:

[Generate code with df](#)

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[New interactive sheet](#)

```
df.tail()
```



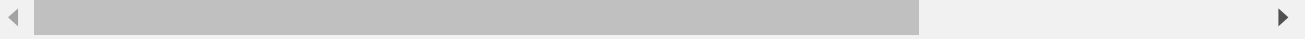
	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigree
763	10	101	76	48	180	32.9	
764	2	122	70	27	0	36.8	
765	5	121	72	23	112	26.2	
766	1	126	60	0	0	30.1	
767	1	93	70	31	0	30.4	

```
df.isnull()
```



	Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPediğ
0	False	False	False	False	False	False	
1	False	False	False	False	False	False	
2	False	False	False	False	False	False	
3	False	False	False	False	False	False	
4	False	False	False	False	False	False	
...	
763	False	False	False	False	False	False	
764	False	False	False	False	False	False	
765	False	False	False	False	False	False	
766	False	False	False	False	False	False	
767	False	False	False	False	False	False	

768 rows × 9 columns



```
df.isnull().sum()
```



	0
Pregnancies	0
Glucose	0
BloodPressure	0
SkinThickness	0
Insulin	0
BMI	0
DiabetesPedigreeFunction	0
Age	0
Outcome	0

dtype: int64

```
df.duplicated()
```



0

0	False
1	False
2	False
3	False
4	False
...	...
763	False
764	False
765	False
766	False
767	False

768 rows × 1 columns

dtype: bool

```
x=df[["Pregnancies","BloodPressure","Insulin","Age"]]
```

x



	Pregnancies	BloodPressure	Insulin	Age
0	6	72	0	50
1	1	66	0	31
2	8	64	0	32
3	1	66	94	21
4	0	40	168	33
...
763	10	76	180	63
764	2	70	0	27
765	5	72	112	30
766	1	60	0	47
767	1	70	0	23



768 rows × 4 columns

Next steps:

[Generate code with x](#)[View recommended plots](#)[New interactive sheet](#)

```
y=df["DiabetesPedigreeFunction"]
y
```



DiabetesPedigreeFunction	
0	0.627
1	0.351
2	0.672
3	0.167
4	2.288
...	...
763	0.171
764	0.340
765	0.245
766	0.349
767	0.315

768 rows × 1 columns

dtype: float64

```
from sklearn.model_selection import train_test_split
```

```
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size=0.2,random_state=0)
```

```
from sklearn import tree
```

```
data= tree.DecisionTreeClassifier(criterion="entropy")
```

```
from sklearn.tree import DecisionTreeRegressor # Import the appropriate model for regress
```

```
data = DecisionTreeRegressor(criterion="squared_error") # Use a regressor instead of a cl
data = data.fit(x_train,y_train)
```

```
tree.plot_tree(data)
```

```

[Text(0.6490799229887984, 0.975, 'x[2] <= 149.0\nsquared_error = 0.111\nsamples = 614\nvalue = 0.466'),
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```

```

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Text(0.11160896130346232, 0.325, 'squared_error = -0.0\nsamples = 1\nvalue =
0.527'),
Text(0.109979633401222, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue = 0.629'),
Text(0.11486761710794298, 0.475, 'x[1] <= 79.0\nsquared_error = 0.003\nsamples =
2\nvalue = 0.705'),
Text(0.11323828920570264, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.649'),
Text(0.1164969450101833, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.761'),
Text(0.11975560081466395, 0.525, 'x[2] <= 80.5\nsquared_error = 0.003\nsamples =
3\nvalue = 0.33'),
Text(0.11812627291242363, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue =
0.401'),
Text(0.12138492871690428, 0.475, 'x[3] <= 21.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.294'),
Text(0.11975560081466395, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.289'),
Text(0.1230142566191446, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.299'),
Text(0.09368635437881874, 0.675, 'squared_error = -0.0\nsamples = 1\nvalue =
1.731'),
Text(0.1005510240260000, 0.725, 'x[1] <= 74.0\nsquared_error = 0.040\nsamples =

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Text(0.1075517540200059, 0.725, 'x[1] <= 74.0\nsquared_error = 0.049\nsamples = 28\nvalue = 0.382'),
Text(0.15417515274949084, 0.675, 'x[3] <= 22.5\nsquared_error = 0.051\nsamples = 22\nvalue = 0.411'),
Text(0.14052953156822812, 0.625, 'x[2] <= 111.0\nsquared_error = 0.037\nsamples = 13\nvalue = 0.334'),
Text(0.13279022403258656, 0.575, 'x[2] <= 105.5\nsquared_error = 0.034\nsamples = 7\nvalue = 0.409'),
Text(0.13116089613034623, 0.525, 'x[0] <= 0.5\nsquared_error = 0.022\nsamples = 6\nvalue = 0.357'),
Text(0.12790224032586558, 0.475, 'x[1] <= 62.0\nsquared_error = 0.005\nsamples = 3\nvalue = 0.45'),
Text(0.12627291242362526, 0.425, 'x[3] <= 21.5\nsquared_error = 0.002\nsamples = 2\nvalue = 0.492'),
Text(0.12464358452138492, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.452'),
Text(0.12790224032586558, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.532'),
Text(0.1295315682281059, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue = 0.366'),
Text(0.13441955193482688, 0.475, 'x[1] <= 68.0\nsquared_error = 0.022\nsamples = 3\nvalue = 0.265'),
Text(0.13279022403258656, 0.425, 'x[1] <= 62.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.161'),
Text(0.13116089613034623, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.155'),
Text(0.13441955193482688, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue = 0.167'),
Text(0.1360488798370672, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.472'),
Text(0.13441955193482688, 0.525, 'squared_error = -0.0\nsamples = 1\nvalue = 0.717'),
Text(0.14826883910386965, 0.575, 'x[2] <= 145.0\nsquared_error = 0.026\nsamples = 6\nvalue = 0.247'),
Text(0.14419551934826885, 0.525, 'x[2] <= 127.5\nsquared_error = 0.001\nsamples = 4\nvalue = 0.183'),
Text(0.14093686354378818, 0.475, 'x[2] <= 118.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.209'),
Text(0.13930753564154785, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.219'),
Text(0.1425661914460285, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue = 0.198'),
Text(0.1474541751527495, 0.475, 'x[1] <= 67.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.157'),
Text(0.14582484725050918, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.173'),
Text(0.14908350305498982, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.142'),
Text(0.15234215885947047, 0.525, 'x[1] <= 69.0\nsquared_error = 0.053\nsamples = 2\nvalue = 0.374'),
Text(0.15071283095723015, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.143'),
Text(0.1539714867617108, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.605'),
Text(0.16782077393075356, 0.625, 'x[1] <= 67.5\nsquared_error = 0.049\nsamples = 9\nvalue = 0.523'),
Text(0.16619144602851324, 0.575, 'x[2] <= 122.0\nsquared_error = 0.036\nsamples = 8\nvalue = 0.478'),
Text(0.1604887983706721, 0.525, 'x[2] <= 102.5\nsquared_error = 0.011\nsamples = 5\nvalue = 0.372'),
Text(0.15723014256619144, 0.475, 'x[1] <= 61.0\nsquared_error = 0.006\nsamples = 3\nvalue = 0.303'),
Text(0.15560081466395112, 0.425, 'x[1] <= 56.0\nsquared_error = 0.0\nsamples =

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2\nvalue = 0.248'),
Text(0.1539714867617108, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.234'),
Text(0.15723014256619144, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.261'),
Text(0.15885947046843177, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.415'),
Text(0.16374745417515274, 0.475, 'x[2] <= 110.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.476'),
Text(0.16211812627291242, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.498'),
Text(0.16537678207739306, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.454'),
Text(0.1718940936863544, 0.525, 'x[1] <= 61.5\nsquared_error = 0.028\nsamples =
3\nvalue = 0.654'),
Text(0.17026476578411406, 0.475, 'x[1] <= 57.0\nsquared_error = 0.004\nsamples =
2\nvalue = 0.766'),
Text(0.16863543788187374, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.833'),
Text(0.1718940936863544, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.699'),
Text(0.1735234215885947, 0.475, 'squared_error = -0.0\nsamples = 1\nvalue =
0.431'),
Text(0.1694501018329939, 0.575, 'squared_error = -0.0\nsamples = 1\nvalue =
0.886'),
Text(0.18492871690427698, 0.675, 'x[1] <= 87.0\nsquared_error = 0.029\nsamples =
6\nvalue = 0.273'),
Text(0.18329938900203666, 0.625, 'x[0] <= 1.5\nsquared_error = 0.002\nsamples =
5\nvalue = 0.198'),
Text(0.180040733197556, 0.575, 'x[0] <= 0.5\nsquared_error = 0.0\nsamples =
3\nvalue = 0.229'),
Text(0.17841140529531568, 0.525, 'x[3] <= 23.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.236'),
Text(0.17678207739307536, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue =
0.233'),
Text(0.180040733197556, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.238'),
Text(0.18167006109979633, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.217'),
Text(0.1865580448065173, 0.575, 'x[2] <= 130.0\nsquared_error = 0.001\nsamples =
2\nvalue = 0.151'),
Text(0.18492871690427698, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.127'),
Text(0.18818737270875763, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.175'),
Text(0.1865580448065173, 0.625, 'squared_error = 0.0\nsamples = 1\nvalue = 0.646'),
Text(0.33425089103869654, 0.825, 'x[2] <= 119.5\nsquared_error = 0.161\nsamples =
107\nvalue = 0.546'),
Text(0.2957930244399185, 0.775, 'x[2] <= 117.0\nsquared_error = 0.17\nsamples =
98\nvalue = 0.566'),
Text(0.2941636965376782, 0.725, 'x[1] <= 77.0\nsquared_error = 0.164\nsamples =
97\nvalue = 0.557'),
Text(0.24739052953156823, 0.675, 'x[1] <= 69.0\nsquared_error = 0.126\nsamples =
69\nvalue = 0.522'),
Text(0.22380346232179227, 0.625, 'x[1] <= 64.5\nsquared_error = 0.119\nsamples =
40\nvalue = 0.566'),
Text(0.21257637474541752, 0.575, 'x[3] <= 66.0\nsquared_error = 0.064\nsamples =
28\nvalue = 0.49'),
Text(0.20315682281059064, 0.525, 'x[2] <= 57.0\nsquared_error = 0.062\nsamples =
26\nvalue = 0.467'),
Text(0.18920570264765785, 0.475, 'x[3] <= 29.5\nsquared_error = 0.039\nsamples =
19\nvalue = 0.414'),

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Text(0.17515274949083504, 0.425, 'x[1] <= 25.0\nsquared_error = 0.014\nsamples = 11\nvalue = 0.355'),
Text(0.16822810590631365, 0.375, 'x[3] <= 27.0\nsquared_error = 0.002\nsamples = 5\nvalue = 0.263'),
Text(0.164969450101833, 0.325, 'x[3] <= 25.5\nsquared_error = 0.001\nsamples = 3\nvalue = 0.289'),
Text(0.16334012219959268, 0.275, 'squared_error = 0.002\nsamples = 2\nvalue = 0.299'),
Text(0.16659877800407333, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.27'),
Text(0.1714867617107943, 0.325, 'x[3] <= 28.5\nsquared_error = 0.0\nsamples = 2\nvalue = 0.222'),
Text(0.16985743380855398, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.24'),
Text(0.17311608961303462, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.205'),
Text(0.18207739307535642, 0.375, 'x[0] <= 0.5\nsquared_error = 0.011\nsamples = 6\nvalue = 0.431'),
Text(0.1780040733197556, 0.325, 'x[1] <= 61.0\nsquared_error = 0.001\nsamples = 2\nvalue = 0.3'),
Text(0.17637474541751527, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.263'),
Text(0.17963340122199592, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.336'),
Text(0.18615071283095724, 0.325, 'x[1] <= 59.0\nsquared_error = 0.003\nsamples = 4\nvalue = 0.497'),
Text(0.18289205702647657, 0.275, 'x[1] <= 53.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.545'),
Text(0.18126272912423624, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.526'),
Text(0.1845213849287169, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.564'),
Text(0.1894093686354379, 0.275, 'x[3] <= 25.5\nsquared_error = 0.001\nsamples = 2\nvalue = 0.449'),
Text(0.18778004073319757, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.482'),
Text(0.19103869653767822, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.416'),
Text(0.20325865580448066, 0.425, 'x[0] <= 0.5\nsquared_error = 0.063\nsamples = 8\nvalue = 0.495'),
Text(0.19918533604887984, 0.375, 'x[1] <= 25.0\nsquared_error = 0.068\nsamples = 4\nvalue = 0.664'),
Text(0.1975560081466395, 0.325, 'x[3] <= 37.5\nsquared_error = 0.016\nsamples = 3\nvalue = 0.8'),
Text(0.1959266802443992, 0.275, 'x[3] <= 30.5\nsquared_error = 0.011\nsamples = 2\nvalue = 0.734'),
Text(0.19429735234215886, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.839'),
Text(0.1975560081466395, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.63'),
Text(0.19918533604887984, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.932'),
Text(0.20081466395112016, 0.325, 'squared_error = -0.0\nsamples = 1\nvalue = 0.254'),
Text(0.20733197556008146, 0.375, 'x[1] <= 30.0\nsquared_error = 0.001\nsamples = 4\nvalue = 0.326'),
Text(0.2040733197556008, 0.325, 'x[0] <= 1.5\nsquared_error = 0.0\nsamples = 2\nvalue = 0.293'),
Text(0.20244399185336048, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.282'),
Text(0.20570264765784113, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.304'),
Text(0.21059063136456213, 0.325, 'x[1] <= 62.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.36'),
Text(0.20806130216222178, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.282')

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Text(0.20090130340232178, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.349'),
Text(0.21221995926680245, 0.275, 'squared_error = -0.0\nsamples = 1\nvalue = 0.37'),
Text(0.21710794297352343, 0.475, 'x[2] <= 66.5\nsquared_error = 0.094\nsamples = 7\nvalue = 0.612'),
Text(0.2154786150712831, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 1.268'),
Text(0.21873727087576375, 0.425, 'x[0] <= 0.5\nsquared_error = 0.026\nsamples = 6\nvalue = 0.503'),
Text(0.2154786150712831, 0.375, 'x[2] <= 87.0\nsquared_error = 0.006\nsamples = 2\nvalue = 0.678'),
Text(0.21384928716904278, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.757'),
Text(0.21710794297352343, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.6'),
Text(0.2219959266802444, 0.375, 'x[2] <= 96.5\nsquared_error = 0.012\nsamples = 4\nvalue = 0.415'),
Text(0.22036659877800407, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.225'),
Text(0.22362525458248472, 0.325, 'x[1] <= 45.0\nsquared_error = 0.0\nsamples = 3\nvalue = 0.478'),
Text(0.2219959266802444, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.496'),
Text(0.22525458248472505, 0.275, 'x[3] <= 27.5\nsquared_error = 0.0\nsamples = 2\nvalue = 0.468'),
Text(0.22362525458248472, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.466'),
Text(0.22688391038696537, 0.225, 'squared_error = -0.0\nsamples = 1\nvalue = 0.471'),
Text(0.2219959266802444, 0.525, 'x[1] <= 30.0\nsquared_error = 0.002\nsamples = 2\nvalue = 0.784'),
Text(0.22036659877800407, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.832'),
Text(0.22362525458248472, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.735'),
Text(0.23503054989816702, 0.575, 'x[0] <= 0.5\nsquared_error = 0.202\nsamples = 12\nvalue = 0.743'),
Text(0.23340122199592667, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue = 1.893'),
Text(0.23665987780040734, 0.525, 'x[3] <= 26.5\nsquared_error = 0.09\nsamples = 11\nvalue = 0.638'),
Text(0.23014256619144602, 0.475, 'x[3] <= 25.5\nsquared_error = 0.048\nsamples = 5\nvalue = 0.409'),
Text(0.2285132382892057, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.092'),
Text(0.23177189409368634, 0.425, 'x[2] <= 63.5\nsquared_error = 0.028\nsamples = 4\nvalue = 0.488'),
Text(0.2285132382892057, 0.375, 'x[1] <= 67.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.657'),
Text(0.22688391038696537, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.666'),
Text(0.23014256619144602, 0.325, 'squared_error = -0.0\nsamples = 1\nvalue = 0.647'),
Text(0.23503054989816702, 0.375, 'x[2] <= 82.5\nsquared_error = 0.0\nsamples = 2\nvalue = 0.32'),
Text(0.23340122199592667, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.324'),
Text(0.23665987780040734, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.315'),
Text(0.24317718940936864, 0.475, 'x[3] <= 27.5\nsquared_error = 0.044\nsamples = 6\nvalue = 0.83'),
Text(0.239918533604888, 0.425, 'x[1] <= 66.5\nsquared_error = 0.032\nsamples = 3\nvalue = 0.686'),
Text(0.23828920570264767, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.93'),

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Text(0.24154786150712831, 0.375, 'x[0] <= 1.5\nsquared_error = 0.004\nsamples =
2\nvalue = 0.564'),
Text(0.239918533604888, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.624'),
Text(0.24317718940936864, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.503'),
Text(0.24643584521384929, 0.425, 'x[2] <= 32.5\nsquared_error = 0.014\nsamples =
3\nvalue = 0.974'),
Text(0.24480651731160896, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
1.138'),
Text(0.2480651731160896, 0.375, 'x[3] <= 28.5\nsquared_error = 0.001\nsamples =
2\nvalue = 0.892'),
Text(0.24643584521384929, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.867'),
Text(0.24969450101832993, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.917'),
Text(0.2709775967413442, 0.625, 'x[0] <= 0.5\nsquared_error = 0.129\nsamples =
29\nvalue = 0.462'),
Text(0.25621181262729126, 0.575, 'x[3] <= 25.5\nsquared_error = 0.029\nsamples =
8\nvalue = 0.331'),
Text(0.2545824847250509, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue = 0.759'),
Text(0.25784114052953155, 0.525, 'x[3] <= 32.0\nsquared_error = 0.004\nsamples =
7\nvalue = 0.27'),
Text(0.2545824847250509, 0.475, 'x[3] <= 27.0\nsquared_error = 0.004\nsamples =
4\nvalue = 0.295'),
Text(0.2529531568228106, 0.425, 'x[1] <= 75.0\nsquared_error = 0.005\nsamples =
3\nvalue = 0.282'),
Text(0.25132382892057026, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.285'),
Text(0.2545824847250509, 0.375, 'squared_error = 0.007\nsamples = 2\nvalue =
0.281'),
Text(0.25621181262729126, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.334'),
Text(0.2610997963340122, 0.475, 'x[1] <= 74.0\nsquared_error = 0.001\nsamples =
3\nvalue = 0.235'),
Text(0.2594704684317719, 0.425, 'x[3] <= 44.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.256'),
Text(0.25784114052953155, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.254'),
Text(0.2610997963340122, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.258'),
Text(0.26272912423625255, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.194'),
Text(0.28574338085539713, 0.575, 'x[3] <= 27.5\nsquared_error = 0.157\nsamples =
21\nvalue = 0.512'),
Text(0.2716904276985743, 0.525, 'x[0] <= 1.5\nsquared_error = 0.029\nsamples =
8\nvalue = 0.355'),
Text(0.2676171079429735, 0.475, 'x[3] <= 25.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.209'),
Text(0.2659877800407332, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.221'),
Text(0.26924643584521385, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.197'),
Text(0.27576374745417515, 0.475, 'x[2] <= 50.5\nsquared_error = 0.029\nsamples =
6\nvalue = 0.403'),
Text(0.2725050916496945, 0.425, 'x[2] <= 22.0\nsquared_error = 0.003\nsamples =
2\nvalue = 0.288'),
Text(0.2708757637474542, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.34'),
Text(0.27413441955193485, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.235'),
Text(0.2790224032586558, 0.425, 'x[2] <= 61.5\nsquared_error = 0.032\nsamples =
4\nvalue = 0.461'),
Text(0.2773930753564155, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.677'),

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Text(0.28065173116089615, 0.375, 'x[2] <= 71.0\nsquared_error = 0.023\nsamples = 3\nvalue = 0.389'),
Text(0.2790224032586558, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.187'),
Text(0.28228105906313644, 0.325, 'x[2] <= 86.0\nsquared_error = 0.003\nsamples = 2\nvalue = 0.49'),
Text(0.28065173116089615, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.547'),
Text(0.2839103869653768, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.433'),
Text(0.29979633401221994, 0.525, 'x[3] <= 37.0\nsquared_error = 0.211\nsamples = 13\nvalue = 0.609'),
Text(0.29124236252545826, 0.475, 'x[2] <= 23.0\nsquared_error = 0.253\nsamples = 9\nvalue = 0.712'),
Text(0.2855397148676171, 0.425, 'x[3] <= 28.5\nsquared_error = 0.409\nsamples = 3\nvalue = 1.029'),
Text(0.2839103869653768, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 1.698'),
Text(0.28716904276985744, 0.375, 'x[0] <= 1.5\nsquared_error = 0.278\nsamples = 2\nvalue = 0.694'),
Text(0.2855397148676171, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 1.222'),
Text(0.28879837067209774, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.167'),
Text(0.2969450101832994, 0.425, 'x[3] <= 30.5\nsquared_error = 0.1\nsamples = 6\nvalue = 0.553'),
Text(0.29368635437881874, 0.375, 'x[1] <= 73.0\nsquared_error = 0.051\nsamples = 3\nvalue = 0.341'),
Text(0.2920570264765784, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.658'),
Text(0.2953156822810591, 0.325, 'x[1] <= 75.0\nsquared_error = 0.001\nsamples = 2\nvalue = 0.182'),
Text(0.29368635437881874, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.149'),
Text(0.2969450101832994, 0.275, 'squared_error = -0.0\nsamples = 1\nvalue = 0.215'),
Text(0.30020366598778003, 0.375, 'x[2] <= 65.0\nsquared_error = 0.058\nsamples = 3\nvalue = 0.766'),
Text(0.29857433808553974, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 1.096'),
Text(0.3018329938900204, 0.325, 'x[1] <= 72.0\nsquared_error = 0.005\nsamples = 2\nvalue = 0.601'),
Text(0.30020366598778003, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.529'),
Text(0.3034623217922607, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.673'),
Text(0.3083503054989817, 0.475, 'x[0] <= 1.5\nsquared_error = 0.041\nsamples = 4\nvalue = 0.379'),
Text(0.30509164969450103, 0.425, 'x[3] <= 40.0\nsquared_error = 0.011\nsamples = 2\nvalue = 0.19'),
Text(0.3034623217922607, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.088'),
Text(0.30672097759674133, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue = 0.293'),
Text(0.31160896130346233, 0.425, 'x[1] <= 72.5\nsquared_error = 0.0\nsamples = 2\nvalue = 0.568'),
Text(0.309979633401222, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.575'),
Text(0.3132382892057026, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.56'),
Text(0.34093686354378816, 0.675, 'x[3] <= 25.5\nsquared_error = 0.249\nsamples = 28\nvalue = 0.643'),
Text(0.33930753564154786, 0.625, 'squared_error = 0.0\nsamples = 1\nvalue = 2.42'),
Text(0.3425661914460285, 0.625, 'x[3] <= 30.0\nsquared_error = 0.137\nsamples = 27\nvalue = 0.577'),
Text(0.32871690427698574, 0.575, 'x[1] <= 85.0\nsquared_error = 0.031\nsamples = 10\nvalue = 0.386'),
Text(0.3230142566191446, 0.525, 'x[2] <= 37.0\nsquared_error = 0.031\nsamples = 7\nvalue = 0.443'),
Text(0.319755600814664, 0.475, 'x[1] <= 81.0\nsquared_error = 0.032\nsamples =

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4\nvalue = 0.537'),
  Text(0.3181262729124236, 0.425, 'x[3] <= 28.0\nsquared_error = 0.003\nsamples =
2\nvalue = 0.652'),
  Text(0.3164969450101833, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.601'),
  Text(0.319755600814664, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.703'),
  Text(0.3213849287169043, 0.425, 'squared_error = 0.034\nsamples = 2\nvalue =
0.422'),
  Text(0.32627291242362527, 0.475, 'x[2] <= 75.0\nsquared_error = 0.002\nsamples =
3\nvalue = 0.319'),
  Text(0.3246435845213849, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.261'),
  Text(0.32790224032586557, 0.425, 'x[2] <= 84.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.348'),
  Text(0.32627291242362527, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.365'),
  Text(0.3295315682281059, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue = 0.33'),
  Text(0.33441955193482686, 0.525, 'x[3] <= 28.0\nsquared_error = 0.005\nsamples =
3\nvalue = 0.254'),
  Text(0.33279022403258657, 0.475, 'x[1] <= 108.0\nsquared_error = 0.006\nsamples =
2\nvalue = 0.282'),
  Text(0.3311608961303462, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.358'),
  Text(0.33441955193482686, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.207'),
  Text(0.3360488798370672, 0.475, 'squared_error = -0.0\nsamples = 1\nvalue =
0.197'),
  Text(0.3564154786150713, 0.575, 'x[1] <= 89.0\nsquared_error = 0.165\nsamples =
17\nvalue = 0.689'),
  Text(0.34663951120162934, 0.525, 'x[3] <= 48.0\nsquared_error = 0.187\nsamples =
9\nvalue = 0.837'),
  Text(0.33930753564154786, 0.475, 'x[1] <= 85.0\nsquared_error = 0.134\nsamples =
5\nvalue = 1.08'),
  Text(0.3376782077393075, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 1.781'),
  Text(0.34093686354378816, 0.425, 'x[2] <= 55.0\nsquared_error = 0.014\nsamples =
4\nvalue = 0.904'),
  Text(0.3376782077393075, 0.375, 'x[3] <= 35.0\nsquared_error = 0.003\nsamples =
2\nvalue = 0.799'),
  Text(0.3360488798370672, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.743'),
  Text(0.33930753564154786, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.855'),
  Text(0.34419551934826886, 0.375, 'x[0] <= 0.5\nsquared_error = 0.002\nsamples =
2\nvalue = 1.01'),
  Text(0.3425661914460285, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.962'),
  Text(0.34582484725050916, 0.325, 'squared_error = -0.0\nsamples = 1\nvalue =
1.057'),
  Text(0.3539714867617108, 0.475, 'x[1] <= 86.0\nsquared_error = 0.087\nsamples =
4\nvalue = 0.534'),
  Text(0.35234215885947046, 0.425, 'x[3] <= 60.5\nsquared_error = 0.055\nsamples =
3\nvalue = 0.41'),
  Text(0.35071283095723016, 0.375, 'x[0] <= 1.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.245'),
  Text(0.3490835030549898, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.231'),
  Text(0.35234215885947046, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.259'),
  Text(0.3539714867617108, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.741'),
  Text(0.3556008146639511, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.905'),
  Text(0.3661914460285132, 0.525, 'x[3] <= 50.0\nsquared_error = 0.089\nsamples =
8\nvalue = 0.522'),
  Text(0.3621181262729124, 0.475, 'x[1] <= 97.0\nsquared_error = 0.077\nsamples =
6\nvalue = 0.421'),
  Text(0.35885947046843175, 0.425, 'x[3] <= 45.5\nsquared_error = 0.002\nsamples =

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4\nvalue = 0.267'),
  Text(0.35723014256619146, 0.375, 'x[3] <= 43.5\nsquared_error = 0.0\nsamples =
3\nvalue = 0.29'),
  Text(0.3556008146639511, 0.325, 'x[3] <= 38.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.303'),
  Text(0.3539714867617108, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.314'),
  Text(0.35723014256619146, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue =
0.292'),
  Text(0.35885947046843175, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.265'),
  Text(0.3604887983706721, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.197'),
  Text(0.3653767820773931, 0.425, 'x[3] <= 38.0\nsquared_error = 0.086\nsamples =
2\nvalue = 0.728'),
  Text(0.36374745417515275, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
1.021'),
  Text(0.3670061099796334, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue =
0.435'),
  Text(0.37026476578411405, 0.475, 'x[1] <= 91.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.825'),
  Text(0.36863543788187375, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.805'),
  Text(0.3718940936863544, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.845'),
  Text(0.29742235234215886, 0.725, 'squared_error = -0.0\nsamples = 1\nvalue = 1.4'),
  Text(0.3727087576374745, 0.775, 'x[1] <= 59.0\nsquared_error = 0.012\nsamples =
9\nvalue = 0.328'),
  Text(0.36945010183299387, 0.725, 'x[1] <= 48.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.414'),
  Text(0.3678207739307536, 0.675, 'squared_error = 0.0\nsamples = 1\nvalue = 0.407'),
  Text(0.3710794297352342, 0.675, 'squared_error = -0.0\nsamples = 1\nvalue =
0.422'),
  Text(0.37596741344195517, 0.725, 'x[0] <= 1.5\nsquared_error = 0.012\nsamples =
7\nvalue = 0.303'),
  Text(0.37433808553971487, 0.675, 'x[1] <= 91.0\nsquared_error = 0.005\nsamples =
6\nvalue = 0.339'),
  Text(0.36945010183299387, 0.625, 'x[1] <= 71.0\nsquared_error = 0.002\nsamples =
3\nvalue = 0.4'),
  Text(0.3678207739307536, 0.575, 'squared_error = 0.0\nsamples = 1\nvalue = 0.349'),
  Text(0.3710794297352342, 0.575, 'x[3] <= 36.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.425'),
  Text(0.36945010183299387, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.447'),
  Text(0.3727087576374745, 0.525, 'squared_error = -0.0\nsamples = 1\nvalue =
0.403'),
  Text(0.37922606924643587, 0.625, 'x[0] <= 0.5\nsquared_error = 0.001\nsamples =
3\nvalue = 0.279'),
  Text(0.3775967413441955, 0.575, 'x[2] <= 137.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.302'),
  Text(0.37596741344195517, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.319'),
  Text(0.37922606924643587, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.284'),
  Text(0.38085539714867617, 0.575, 'squared_error = 0.0\nsamples = 1\nvalue =
0.234'),
  Text(0.3775967413441955, 0.675, 'squared_error = -0.0\nsamples = 1\nvalue =
0.088'),
  Text(0.6122024567209776, 0.875, 'x[0] <= 6.5\nsquared_error = 0.073\nsamples =
270\nvalue = 0.402'),
  Text(0.5171620417515275, 0.825, 'x[2] <= 66.5\nsquared_error = 0.058\nsamples =
161\nvalue = 0.372'),
  Text(0.454385183299389, 0.775, 'x[0] <= 3.5\nsquared_error = 0.047\nsamples =
120\nvalue = 0.320'),

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122\nvalue = 0.348 ),
  Text(0.40338594704684316, 0.725, 'x[2] <= 46.5\nsquared_error = 0.021\nsamples =
28\nvalue = 0.286'),
  Text(0.39312627291242364, 0.675, 'x[1] <= 48.0\nsquared_error = 0.017\nsamples =
25\nvalue = 0.27'),
  Text(0.38574338085539717, 0.625, 'x[1] <= 22.0\nsquared_error = 0.0\nsamples =
3\nvalue = 0.167'),
  Text(0.3841140529531568, 0.575, 'x[3] <= 22.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.18'),
  Text(0.3824847250509165, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue = 0.174'),
  Text(0.38574338085539717, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue =
0.187'),
  Text(0.38737270875763746, 0.575, 'squared_error = 0.0\nsamples = 1\nvalue = 0.14'),
  Text(0.4005091649694501, 0.625, 'x[1] <= 57.0\nsquared_error = 0.018\nsamples =
22\nvalue = 0.285'),
  Text(0.3906313645621181, 0.575, 'x[3] <= 24.5\nsquared_error = 0.052\nsamples =
3\nvalue = 0.445'),
  Text(0.3890020366598778, 0.525, 'squared_error = 0.0\nsamples = 1\nvalue = 0.652'),
  Text(0.39226069246435846, 0.525, 'x[1] <= 54.0\nsquared_error = 0.046\nsamples =
2\nvalue = 0.342'),
  Text(0.3906313645621181, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.127'),
  Text(0.39389002036659876, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue =
0.557'),
  Text(0.4103869653767821, 0.575, 'x[1] <= 71.0\nsquared_error = 0.007\nsamples =
19\nvalue = 0.259'),
  Text(0.40122199592668023, 0.525, 'x[1] <= 69.0\nsquared_error = 0.008\nsamples =
10\nvalue = 0.282'),
  Text(0.3971486761710794, 0.475, 'x[1] <= 61.0\nsquared_error = 0.009\nsamples =
8\nvalue = 0.27'),
  Text(0.39389002036659876, 0.425, 'x[1] <= 59.0\nsquared_error = 0.015\nsamples =
3\nvalue = 0.31'),
  Text(0.39226069246435846, 0.375, 'x[3] <= 24.5\nsquared_error = 0.009\nsamples =
2\nvalue = 0.244'),
  Text(0.3906313645621181, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.151'),
  Text(0.39389002036659876, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.336'),
  Text(0.3955193482688391, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.444'),
  Text(0.40040733197556005, 0.425, 'x[3] <= 21.5\nsquared_error = 0.004\nsamples =
5\nvalue = 0.246'),
  Text(0.39877800407331976, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.142'),
  Text(0.4020366598778004, 0.375, 'x[3] <= 24.0\nsquared_error = 0.001\nsamples =
4\nvalue = 0.272'),
  Text(0.40040733197556005, 0.325, 'x[1] <= 65.0\nsquared_error = 0.001\nsamples =
3\nvalue = 0.288'),
  Text(0.39877800407331976, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue =
0.314'),
  Text(0.4020366598778004, 0.275, 'x[3] <= 22.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.274'),
  Text(0.40040733197556005, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue =
0.256'),
  Text(0.40366598778004076, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue =
0.293'),
  Text(0.40366598778004076, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.223'),
  Text(0.40529531568228105, 0.475, 'x[3] <= 32.0\nsquared_error = 0.004\nsamples =
2\nvalue = 0.33'),
  Text(0.40366598778004076, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.389'),
  Text(0.4069246435845214, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue = 0.27'),
  Text(0.4195519348268839, 0.525, 'x[3] <= 42.0\nsquared_error = 0.005\nsamples =

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9\nvalue = 0.234'),
Text(0.4142566191446029, 0.475, 'x[1] <= 73.0\nsquared_error = 0.002\nsamples =
6\nvalue = 0.206'),
Text(0.41018329938900205, 0.425, 'x[3] <= 27.5\nsquared_error = 0.001\nsamples =
2\nvalue = 0.237'),
Text(0.4085539714867617, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.207'),
Text(0.41181262729124235, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.267'),
Text(0.41832993890020365, 0.425, 'x[1] <= 75.0\nsquared_error = 0.002\nsamples =
4\nvalue = 0.191'),
Text(0.415071283095723, 0.375, 'x[3] <= 28.5\nsquared_error = 0.001\nsamples =
2\nvalue = 0.159'),
Text(0.4134419551934827, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.197'),
Text(0.41670061099796335, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.121'),
Text(0.4215885947046843, 0.375, 'x[1] <= 77.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.222'),
Text(0.419959266802444, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.207'),
Text(0.42321792260692465, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue =
0.238'),
Text(0.42484725050916494, 0.475, 'x[3] <= 49.5\nsquared_error = 0.007\nsamples =
3\nvalue = 0.29'),
Text(0.42321792260692465, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.402'),
Text(0.4264765784114053, 0.425, 'x[3] <= 59.0\nsquared_error = 0.001\nsamples =
2\nvalue = 0.234'),
Text(0.42484725050916494, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.268'),
Text(0.42810590631364565, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.2'),
Text(0.41364562118126275, 0.675, 'x[2] <= 51.0\nsquared_error = 0.034\nsamples =
3\nvalue = 0.417'),
Text(0.4120162932790224, 0.625, 'squared_error = 0.0\nsamples = 1\nvalue = 0.678'),
Text(0.41527494908350304, 0.625, 'x[1] <= 72.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.286'),
Text(0.41364562118126275, 0.575, 'squared_error = 0.0\nsamples = 1\nvalue =
0.267'),
Text(0.4169042769857434, 0.575, 'squared_error = 0.0\nsamples = 1\nvalue = 0.306'),
Text(0.5053844195519348, 0.725, 'x[3] <= 37.5\nsquared_error = 0.054\nsamples =
94\nvalue = 0.366'),
Text(0.4719450101832994, 0.675, 'x[1] <= 67.0\nsquared_error = 0.067\nsamples =
60\nvalue = 0.396'),
Text(0.4543788187372709, 0.625, 'x[1] <= 63.0\nsquared_error = 0.024\nsamples =
22\nvalue = 0.332'),
Text(0.44643584521384927, 0.575, 'x[0] <= 5.5\nsquared_error = 0.024\nsamples =
15\nvalue = 0.364'),
Text(0.44032586558044806, 0.525, 'x[0] <= 4.5\nsquared_error = 0.024\nsamples =
10\nvalue = 0.402'),
Text(0.43625254582484724, 0.475, 'x[3] <= 33.0\nsquared_error = 0.016\nsamples =
7\nvalue = 0.359'),
Text(0.4329938900203666, 0.425, 'x[3] <= 30.5\nsquared_error = 0.012\nsamples =
5\nvalue = 0.415'),
Text(0.4313645621181263, 0.375, 'x[1] <= 58.0\nsquared_error = 0.003\nsamples =
4\nvalue = 0.366'),
Text(0.42810590631364565, 0.325, 'x[3] <= 24.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.321'),
Text(0.4264765784114053, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.302'),
Text(0.42973523421588594, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.34'),
Text(0.43462321792260694, 0.325, 'x[3] <= 26.0\nsquared_error = 0.001\nsamples =
2\nvalue = 0.412'),
Text(0.4329938900203666, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.443'),

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Text(0.43625254582484724, 0.275, 'squared_error = 0.0\nsamples = 1\nvalue = 0.38'),
Text(0.43462321792260694, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.61'),
Text(0.4395112016293279, 0.425, 'x[1] <= 31.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.219'),
Text(0.4378818737270876, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.212'),
Text(0.44114052953156824, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue =
0.226'),
Text(0.4443991853360489, 0.475, 'x[1] <= 54.0\nsquared_error = 0.028\nsamples =
3\nvalue = 0.503'),
Text(0.44276985743380853, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue =
0.654'),
Text(0.4460285132382892, 0.425, 'x[1] <= 61.0\nsquared_error = 0.025\nsamples =
2\nvalue = 0.428'),
Text(0.4443991853360489, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.268'),
Text(0.44765784114052953, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.587'),
Text(0.45254582484725053, 0.525, 'x[3] <= 29.5\nsquared_error = 0.015\nsamples =
5\nvalue = 0.288'),
Text(0.4509164969450102, 0.475, 'x[3] <= 24.5\nsquared_error = 0.005\nsamples =
4\nvalue = 0.235'),
Text(0.4492871690427699, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.356'),
Text(0.45254582484725053, 0.425, 'x[1] <= 30.0\nsquared_error = 0.0\nsamples =
3\nvalue = 0.195'),
Text(0.4509164969450102, 0.375, 'x[3] <= 27.0\nsquared_error = 0.0\nsamples =
2\nvalue = 0.19'),
Text(0.4492871690427699, 0.325, 'squared_error = 0.0\nsamples = 1\nvalue = 0.189'),
Text(0.45254582484725053, 0.325, 'squared_error = -0.0\nsamples = 1\nvalue =
0.19'),
Text(0.45417515274949083, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue =
0.206'),
Text(0.45417515274949083, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue =
0.501'),
Text(0.4623217922606925, 0.575, 'x[3] <= 26.5\nsquared_error = 0.016\nsamples =
7\nvalue = 0.264'),
Text(0.45906313645621183, 0.525, 'x[0] <= 5.0\nsquared_error = 0.003\nsamples =
3\nvalue = 0.178'),
Text(0.4574338085539715, 0.475, 'x[3] <= 22.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.137'),
Text(0.4558044806517312, 0.425, 'squared_error = 0.0\nsamples = 1\nvalue = 0.148'),
Text(0.45906313645621183, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.126'),
Text(0.4606924643584521, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.26'),
Text(0.4655804480651731, 0.525, 'x[1] <= 64.5\nsquared_error = 0.016\nsamples =
4\nvalue = 0.328'),
Text(0.4639511201629328, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.161'),
Text(0.4672097759674134, 0.475, 'x[0] <= 5.0\nsquared_error = 0.009\nsamples =
3\nvalue = 0.384'),
Text(0.4655804480651731, 0.425, 'x[1] <= 65.5\nsquared_error = 0.0\nsamples =
2\nvalue = 0.452'),
Text(0.4639511201629328, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.432'),
Text(0.4672097759674134, 0.375, 'squared_error = -0.0\nsamples = 1\nvalue =
0.471'),
Text(0.4688391038696538, 0.425, 'squared_error = -0.0\nsamples = 1\nvalue =
0.249'),
Text(0.4895112016293279, 0.625, 'x[3] <= 26.5\nsquared_error = 0.088\nsamples =
38\nvalue = 0.434'),
Text(0.47535641547861507, 0.575, 'x[2] <= 25.5\nsquared_error = 0.133\nsamples =
7\nvalue = 0.609'),
Text(0.4720977596741344, 0.525, 'x[3] <= 23.0\nsquared_error = 0.088\nsamples =
5\nvalue = 0.776'),
Text(0.47046842177180407, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue =
0.471')

```

```

Text(0.47040043177189407, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 1.182'),
Text(0.4737270875763748, 0.475, 'x[3] <= 25.0\nsquared_error = 0.059\nsamples = 4\nvalue = 0.674'),
Text(0.4720977596741344, 0.425, 'squared_error = 0.024\nsamples = 2\nvalue = 0.458'),
Text(0.47535641547861507, 0.425, 'x[1] <= 75.0\nsquared_error = 0.0\nsamples = 2\nvalue = 0.891'),
Text(0.4737270875763748, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.904'),
Text(0.4769857433808554, 0.375, 'squared_error = 0.0\nsamples = 1\nvalue = 0.878'),
Text(0.4786150712830957, 0.525, 'x[3] <= 23.0\nsquared_error = 0.001\nsamples = 2\nvalue = 0.191'),
Text(0.4769857433808554, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.223'),
Text(0.48024439918533607, 0.475, 'squared_error = 0.0\nsamples = 1\nvalue = 0.159'),
Text(0.5036659877800407, 0.575, 'x[1] <= 109.0\nsquared_error = 0.069\nsamples = 31\nvalue = 0.394'),
Text(0.5020366598778004, 0.525, 'x[1] <= 91.0\nsquared_error = 0.068\nsamples = 30\nvalue = 0.384'),
Text(0.4945010183299389, 0.475, 'x[1] <= 87.0\nsquared_error = 0.071\nsamples = 27\nvalue = 0.406'),
Text(0.4859470468431772, 0.425, 'x[0] <= 5.5\nsquared_error = 0.075\nsamples = 23\nvalue = 0.387'),
Text(0.48024439918533607, 0.375, 'x[2] <= 21.0\nsquared_error = 0.084\nsamples = 18\nvalue = 0.432'),
Text(0.4786150712830957, 0.325, 'x[3] <= 30.5\nsquared_error = 0.084\nsamples = 17\nvalue = 0.448'),
Text(0.4737270875763748, 0.275, 'x[3] <= 29.5\nsquared_error = 0.005\nsamples = 7\nvalue = 0.349'),
Text(0.4720977596741344, 0.225, 'x[0] <= 4.5\nsquared_error = 0.002\nsamples = 6\nvalue = 0.373'),
Text(0.4688391038696538, 0.175, 'x[1] <= 70.0\nsquared_error = 0.003\nsamples = 2\nvalue = 0.344'),
Text(0.4672097759674134, 0.125, 'squared_error = 0.0\nsamples = 1\nvalue = 0.394'),
Text(0.47046843177189407, 0.125, 'squared_error = 0.0\nsamples = 1\nvalue = 0.294'),
Text(0.47535641547861507, 0.175, 'x[1] <= 75.5\nsquared_error = 0.001\nsamples = 4\nvalue = 0.388'),
Text(0.4737270875763748, 0.125, 'x[3] <= 27.5\nsquared_error = 0.001\nsamples = 3\nvalue = 0.404'),
Text(0.4720977596741344, 0.075, 'squared_error = 0.0\nsamples = 2\nvalue = 0.388'),
Text(0.47535641547861507, 0.075, 'squared_error = 0.0\nsamples = 1\nvalue = 0.434'),
Text(0.4769857433808554, 0.125, 'squared_error = 0.0\nsamples = 1\nvalue = 0.34'),
Text(0.47535641547861507, 0.225, 'squared_error = -0.0\nsamples = 1\nvalue = 0.201'),
Text(0.4835030549898167, 0.275, 'x[3] <= 31.5\nsquared_error = 0.127\nsamples = 10\nvalue = 0.517'),
Text(0.48187372708757636, 0.225, 'squared_error = 0.0\nsamples = 1\nvalue = 0.803'),
Text(0.485132382892057, 0.225, 'x[0] <= 4.5\nsquared_error = 0.131\nsamples = 9\nvalue = 0.485'),
Text(0.48187372708757636, 0.175, 'x[3] <= 33.5\nsquared_error = 0.061\nsamples = 3\nvalue = 0.364'),
Text(0.48024439918533607, 0.125, 'x[1] <= 71.5\nsquared_error = 0.002\nsamples = 2\nvalue = 0.192'),
Text(0.4786150712830957, 0.075, 'squared_error = 0.0\nsamples = 1\nvalue = 0.145'),
Text(0.48187372708757636, 0.075, 'squared_error = -0.0\nsamples = 1\nvalue = 0.388'),

```

```
from sklearn.tree import plot_tree
```

```
from sklearn.tree import DecisionTreeRegressor  
import matplotlib.pyplot as plt
```

```
plt.figure()  
# Use DecisionTreeRegressor for continuous target variables  
d1=DecisionTreeRegressor(criterion="squared_error").fit(x_train,y_train)  
plot_tree(d1, filled=True)  
plt.title("Decision tree on training data of dataset")  
plt.show()
```



Decision tree on training data of dataset

