Yingling Wang

TQ3 linear regression model assignment 2

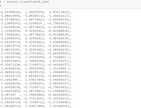
In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
from sklearn.model_selection import train_test_split
from statsmodels.gis.api import *
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score
from sklearn.preprocessing import OneHotEncoder,TQ3-assignment2,TQ3-Data/Spotlocate.csv"
df = pd.read_csv("
df.head()
```

Out[1]:

	Age	Postcode	Gender	Weight	LastName	Location	SelfMeasuredBloodPressure	Smoker	Systolic	Weight
0	45	90	Female	60	Smith	County General Hospital	Good	N	120	60
1	50	90	Female	70	Williams	County General Hospital	Good	Y	130	70
2	55	90	Female	80	Williams	St Mary's Medical Center	Good	N	135	80
3	60	90	Female	90	Williams	St Mary's Medical Center	Good	Y	140	90
4	65	90	Female	100	Brown	County General Hospital	Good	Y	150	100

In [2]:
```
random.seed(42,Fixed=True)
random.sample(df,Fixed=True)[:5]
```

Out[2]:



	Age	Postcode	Gender	Weight	LastName	Location	SelfMeasuredBloodPressure	Smoker	Systolic	Weight
0	45.0000000000000	90.0000000000000	Female	60.0000000000000	Smith	County General Hospital	Good	N	120.0000000000000	60.0000000000000
1	50.0000000000000	90.0000000000000	Female	70.0000000000000	Williams	County General Hospital	Good	Y	130.0000000000000	70.0000000000000
2	55.0000000000000	90.0000000000000	Female	80.0000000000000	Williams	St Mary's Medical Center	Good	N	135.0000000000000	80.0000000000000
3	60.0000000000000	90.0000000000000	Female	90.0000000000000	Williams	St Mary's Medical Center	Good	Y	140.0000000000000	90.0000000000000
4	65.0000000000000	90.0000000000000	Female	100.0000000000000	Brown	County General Hospital	Good	Y	150.0000000000000	100.0000000000000

In [3]:
```
df.rename(columns={"Weight":"Weight_1"})
df.rename(columns={"Weight":"Weight_2"})
df[["Age","Weight_1","Weight_2"]]
```

In [4]:
```
# visualization data
sns.pairplot(df,hue="Gender")
plt.show()
```

In [5]:
```
df.describe(include=['O'])
```

Out[5]:

	LastName	Location	SelfMeasuredBloodPressure	Smoker
count	5	5	5	5
unique	3	2	2	2
top	Williams	County General Hospital	Good	Y
freq	2	3	3	3

In [6]:
```
df.describe(include=['O','int64'])
```

Out[6]:

	LastName	Location	SelfMeasuredBloodPressure	Smoker	Systolic	Weight
count	5	5	5	5	5.000000	5.000000
unique	3	2	2	2	NaN	NaN
top	Williams	County General Hospital	Good	Y	NaN	NaN
freq	2	3	3	3	NaN	NaN
mean	NaN	NaN	NaN	NaN	135.000000	75.000000
std	NaN	NaN	NaN	NaN	12.247449	12.247449
min	NaN	NaN	NaN	NaN	120.000000	60.000000
25%	NaN	NaN	NaN	NaN	130.000000	70.000000
50%	NaN	NaN	NaN	NaN	135.000000	80.000000
75%	NaN	NaN	NaN	NaN	140.000000	90.000000
max	NaN	NaN	NaN	NaN	150.000000	100.000000

In [7]:
```
df.drop(columns=["Age"])
```

Out[7]:

	Postcode	Gender	Weight	LastName	Location	SelfMeasuredBloodPressure	Smoker	Systolic	Weight
0	0.0000000000000	0.0000000000000	Female	0.0000000000000	Smith	County General Hospital	Good	N	120.0000000000000
1	0.0000000000000	0.0000000000000	Female	0.0000000000000	Williams	County General Hospital	Good	Y	130.0000000000000
2	0.0000000000000	0.0000000000000	Female	0.0000000000000	Williams	St Mary's Medical Center	Good	N	135.0000000000000
3	0.0000000000000	0.0000000000000	Female	0.0000000000000	Williams	St Mary's Medical Center	Good	Y	140.0000000000000
4	0.0000000000000	0.0000000000000	Female	0.0000000000000	Brown	County General Hospital	Good	Y	150.0000000000000

In [8]:
```
df[df.Gender=="Female"]
```

Out[8]:

	Age	Weight	Gender	Gender	Location	SelfMeasuredBloodPressure	Systolic
0	0.0000000	0.0000000	Female	Female	County General Hospital	Good	120
1	0.0000000	0.0000000	Female	Female	St Mary's Medical Center	Good	135
2	0.0000000	0.0000000	Female	Female	St Mary's Medical Center	Good	140
3	0.0000000	0.0000000	Female	Female	County General Hospital	Good	150
4	0.0000000	0.0000000	Female	Female	County General Hospital	Poor	110

120 rows × 8 columns

In [9]:
```
sns.boxplot(df["Age"])
```

Out[9]:

In [10]:
```
df[df.Gender=="Female"]
```

Out[10]:

	Age	Weight	Gender	Gender	Location	SelfMeasuredBloodPressure	Systolic
0	0.0000000	0.0000000	Female	Female	County General Hospital	Good	120
1	0.0000000	0.0000000	Female	Female	St Mary's Medical Center	Good	135
2	0.0000000	0.0000000	Female	Female	St Mary's Medical Center	Good	140
3	0.0000000	0.0000000	Female	Female	County General Hospital	Good	150
4	0.0000000	0.0000000	Female	Female	County General Hospital	Poor	110

120 rows × 8 columns

In [11]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5]
```

In [12]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False)
```

In [13]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False)
```

In [14]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [15]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [16]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [17]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [18]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [19]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [20]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [21]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [22]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [23]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [24]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [25]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [26]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [27]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [28]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [29]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
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In [30]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
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In [31]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
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In [32]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
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In [33]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [34]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [35]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [36]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [37]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [38]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [39]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [40]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [41]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [42]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [43]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [44]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [45]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [46]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [47]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [48]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [49]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [50]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [51]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [52]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [53]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [54]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [55]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [56]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [57]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [58]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [59]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [60]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [61]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False).sort_values(ascending=False)
```

In [62]:
```
df[df.Gender=="Female"].sort_values(ascending=False)[:5].sort_values
```