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import pandas as pd
import numpy as np
df = pd.read_csv(r'ass3.csv')
print("*****Dataset created*****")
print("=====Data=====")
print(df)
print("=====Data Types=====")
print(df.dtypes)
numeric_columns = df.select_dtypes(include=[np.number]).columns
df[numeric_columns] = df[numeric_columns].apply(pd.to_numeric, errors='coerce')
print("=====Converted Data=====")
print(df)
print("=====Data Types After Conversion=====")
print(df.dtypes)
try:
    print("=====Mean=====")
    print(df.mean())
    print("=====Median=====")
    print(df.median())
    print("=====Mode=====")
    print(df.mode())
    print("=====Std dev=====")
    print(df.std())
    print("=====Variance=====")
    print(df.var())
except Exception as e:
    print("Error occurred during descriptive statistics computation:")
    print(e)
df = pd.read_csv(r'ass3IRIS.csv')
print("*****Iris dataset*****")
print("=====Head=====")
print(df.head())
print("=====Shape=====")

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print(df.shape)
print("====NaN Counts====")
print(df.isna().sum())
print("====Data Types====")
print(df.dtypes)
numeric_columns = df.select_dtypes(include=[np.number]).columns
df[numeric_columns] = df[numeric_columns].apply(pd.to_numeric, errors='coerce')
print("====Converted Data====")
print(df)
print("====Data Types After Conversion====")
print(df.dtypes)
try:
    print("====Mean====")
    print(df.mean())
    print("====Median====")
    print(df.median())
    print("====Mode====")
    print(df.mode())
    print("====Std dev====")
    print(df.std())
    print("====Variance====")
    print(df.var())
except Exception as e:
    print("Error occurred during descriptive statistics computation:")
    print(e)
try:
    print("====Group by Mean (Body Mass)====")
    print(df.groupby('Sex')['Body Mass (g)'].mean())
    print("====Group by Median (Flipper Length)====")
    print(df.groupby('Species')['Flipper Length (mm)'].median())
    print("====Group by Describe (Culmen Depth)====")
    print(df.groupby('Region')['Culmen Depth (mm)'].describe())
except KeyError as ke:

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print(f"KeyError occurred during groupby operation: {ke}")
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OUTPUT-

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File Edit Selection View Go Run ... < -> [Run] [Debug] [Test] [Exit]

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

=====Data=====
   A  B  C  D
0  10 20 30 40
1  25 35 45 55
2  15 25 35 45
3  20 30 40 50
4  30 40 50 60
=====Data Types=====
A    int64
B    int64
C    int64
D    int64
dtype: object
=====Converted Data=====
   A  B  C  D
0  10 20 30 40
1  25 35 45 55
2  15 25 35 45
3  20 30 40 50
4  30 40 50 60
=====Data Types After Conversion=====
A    int64
B    int64
C    int64
D    int64
dtype: object
=====Mean=====
A    20.0
B    30.0
C    40.0
D    50.0
dtype: float64
=====Median=====
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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

C    40.0
D    50.0
dtype: float64
=====Median=====
A    20.0
B    30.0
C    40.0
D    50.0
dtype: float64
=====Mode=====
   A  B  C  D
0  10 20 30 40
1  15 25 35 45
2  20 30 40 50
3  25 35 45 55
4  30 40 50 60
=====Std dev=====
A    7.905694
B    7.905694
C    7.905694
D    7.905694
dtype: float64
=====Variance=====
A    62.5
B    62.5
C    62.5
D    62.5
dtype: float64
```

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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

*****Iris dataset*****
=====Head=====
Sex Body Mass (g) Species Flipper Length (mm) Region Culmen Depth (mm)
0 M 3750 Iris-setosa 181 Antarctica 18.7
1 F 3800 Iris-setosa 182 Antarctica 17.9
2 F 3900 Iris-versicolor 188 Antarctica 19.2
3 M 4000 Iris-versicolor 190 Antarctica 20.0
4 F 4500 Iris-virginica 200 Antarctica 22.1
=====Shape=====
(6, 6)
=====NaN Counts=====
Sex 0
Body Mass (g) 0
Species 0
Flipper Length (mm) 0
Region 0
Culmen Depth (mm) 0
dtype: int64
=====Data Types=====
Sex object
Body Mass (g) int64
Species object
Flipper Length (mm) int64
Region object
Culmen Depth (mm) float64
dtype: object
=====Converted Data=====
Sex Body Mass (g) Species Flipper Length (mm) Region Culmen Depth (mm)
0 M 3750 Iris-setosa 181 Antarctica 18.7
1 F 3800 Iris-setosa 182 Antarctica 17.9
2 F 3900 Iris-versicolor 188 Antarctica 19.2
3 M 4000 Iris-versicolor 190 Antarctica 20.0
4 F 4500 Iris-virginica 200 Antarctica 22.1
```

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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

4 F 4500 Iris-virginica 200 Antarctica 22.1
5 M 4600 Iris-virginica 202 Antarctica 23.5
=====Data Types After Conversion=====
Sex object
Body Mass (g) int64
Species object
Flipper Length (mm) int64
Region object
Culmen Depth (mm) float64
dtype: object
=====Mean=====
Error occurred during descriptive statistics computation:
Could not convert ['MFFMFM'
'Iris-setosaIris-setosaIris-versicolorIris-versicolorIris-virginicaIris-virginica'
'AntarcticaAntarcticaAntarcticaAntarcticaAntarcticaAntarctica'] to numeric
=====Group by Mean (Body Mass)=====
Sex
F 4066.666667
M 4116.666667
Name: Body Mass (g), dtype: float64
=====Group by Median (Flipper Length)=====
Species
Iris-setosa 181.5
Iris-versicolor 189.0
Iris-virginica 201.0
Name: Flipper Length (mm), dtype: float64
=====Group by Describe (Culmen Depth)=====
count mean std min 25% 50% 75% max
Region
Antarctica 6.0 20.233333 2.148178 17.9 18.825 19.6 21.575 23.5

ayush@R2-D2 MINGW64 ~/OneDrive/Documents/DSBDALLLLLLL/Assign 3
$
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