

Descriptive Analysis of Student Performance and Salary

Calculation of Central Tendency (Mean, Median, Mode) and Percentiles (Q1, Q2, Q3, Q4)

Python – Code

```
import pandas as pd
import numpy as np
#data collection
dataset=pd.read_csv("Placement.csv")
#collect Quan & Qual data
quan=[x for x in dataset if dataset[x].dtype!=object]
qual=[x for x in dataset if dataset[x].dtype==object]
#remove sl_no
quan.remove("sl_no")

#create New Table for central Tendency & descriptive
descriptive=pd.DataFrame(index=["Mean", "Median", "Mode",
                                "Q0-Min-0%", "Q1-25%", "Q2-50%", "Q3-75%", "Q4-Max-100%",
                                "min-max", "0-25%", "25%-50%", "50%-75%", "75%-100%"],
                           columns=quan)

for x in quan:
    #print(x)
    descriptive.loc["Mean", x] = round(dataset[x].mean(), 2)
    descriptive.loc["Median", x] = dataset[x].median()
    descriptive.loc["Mode", x] = round(dataset[x].mode()[0], 2)
    descriptive.loc["Q0-Min-0%", x]=dataset.describe().loc['min', x]
    descriptive.loc["Q1-25%", x]=dataset.describe().loc['25%', x]
    descriptive.loc["Q2-50%", x]=dataset.describe().loc['50%', x]
    descriptive.loc["Q3-75%", x]=dataset.describe().loc['75%', x]
    descriptive.loc["Q4-Max-100%", x]=dataset.describe().loc['max', x]
    descriptive.loc["min-max", x]=dataset.describe().loc['max', x]-dataset.
    descriptive.loc['min', x]
    descriptive.loc["0-25%", x]=dataset.describe().loc['25%', x]-dataset.
    descriptive.loc['min', x]
    descriptive.loc["25%-50%", x]=dataset.describe().loc['50%', x]-dataset.
    descriptive.loc['25%', x]
    descriptive.loc["50%-75%", x]=dataset.describe().loc['75%', x]-dataset.
    descriptive.loc['50%', x]
    descriptive.loc["75%-100%", x]=dataset.describe().loc['max', x]-dataset.
    descriptive.loc['75%', x]
descriptive
```

Python – Result

	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
Mean	67.3	66.33	66.37	72.1	62.28	288655.41
Median	67.0	65.0	66.0	71.0	62.0	265000.0
Mode	62.0	63.0	65.0	60.0	56.7	300000.0
Q0-Min-0%	40.89	37.0	50.0	50.0	51.21	200000.0
Q1-25%	60.6	60.9	61.0	60.0	57.945	240000.0
Q2-50%	67.0	65.0	66.0	71.0	62.0	265000.0
Q3-75%	75.7	73.0	72.0	83.5	66.255	300000.0
Q4-Max-100%	89.4	97.7	91.0	98.0	77.89	940000.0
min-max	48.51	60.7	41.0	48.0	26.68	740000.0
0-25%	19.71	23.9	11.0	10.0	6.735	40000.0
25%-50%	6.4	4.1	5.0	11.0	4.055	25000.0
50%-75%	8.7	8.0	6.0	12.5	4.255	35000.0
75%-100%	13.7	24.7	19.0	14.5	11.635	640000.0

Python – Result

Central tendency (mean, median, Mode)

Percentile (Q1,Q2,Q3,Q4)

Measure	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
Mean	67.30	66.33	66.37	72.10	62.28	288655.41
Median	67.00	65.00	66.00	71.00	62.00	265000.00
Mode	62.00	63.00	65.00	60.00	56.70	300000.00
Q0 (Min-0%)	40.89	37.00	50.00	50.00	51.21	200000.00
Q1 (25%)	60.60	60.90	61.00	60.00	57.95	240000.00
Q2 (50%)	67.00	65.00	66.00	71.00	62.00	265000.00
Q3 (75%)	75.70	73.00	72.00	83.50	66.26	300000.00
Q4 (Max-100%)	89.40	97.70	91.00	98.00	77.89	940000.00

Whole Class Summary of Result (Mark Based)

Whole Class summary	10th	12th	Degree	Enterance test	MBA Degree
Average class percentage (Mean):	67.3	66.33	66.37	72.1	62.28
Middle class percentage (Median):	67	65	66	71	62
Most common class percentage (Mode):	62	63	65	60	56.7
Minium class percentage(Q0,min-0%):	40.89	37	50	50	51.21
25% percentage of class percentage(Q1,25%):	60.6	60.9	61	60	57.95
50% percentage of class percentage(Q2, 50%):	67	65	66	71	62
75% percentage of class percentage(Q3, 75%):	75.7	73	72	83.5	66.26
Maximum class percentage(Q4, max-100%)	89.4	97.7	91	98	77.89
From Minimum – to maximum percentage different:	48.51	60.7	41	48	26.68
0-25% class percentage different	19.71	23.9	11	10	6.74
25%-50% class percentage different:	6.4	4.1	5	11	4.06
50%-75% class percentage different:	8.7	8	6	12.5	4.26
75%-100% class percentage different :	13.7	24.7	19	14.5	11.64

Whole Class Summary of Result (Salary Based)

Whole Class salary summary	Salary
Average class salary (Mean):	288655.41
Middle salary of class (Median):	265000
Most common class salary (Mode):	300000
Minium class salary (Q0,min-0%):	200000
25% percentage of class salary (Q1,25%):	240000
50% percentage of class salary (Q2, 50%):	265000
75% percentage of class salary (Q3, 75%):	300000
Maximum class salary (Q4, max-100%)	940000
From Minimum – to maximum salary different:	740000
0-25% class salary different	40000
25%-50% class salary different:	25000
50%-75% class salary different:	35000
75%-100% class salary different :	640000