Central Tendency Output Analysis

Dataset:

```
dataset
```

	sl_no	gender	ssc_p	ssc_b	hsc_p	hsc_b	hsc_s	degree_p	degree_t	workex	etest_p	specialisation	mba_p	status	salary
0	1	M	67.00	Others	91.00	Others	Commerce	58.00	Sci&Tech	No	55.0	Mkt&HR	58.80	Placed	270000.0
1	2	M	79.33	Central	78.33	Others	Science	77.48	Sci&Tech	Yes	86.5	Mkt&Fin	66.28	Placed	200000.0
2	3	M	65.00	Central	68.00	Central	Arts	64.00	Comm&Mgmt	No	75.0	Mkt&Fin	57.80	Placed	250000.0
3	4	M	56.00	Central	52.00	Central	Science	52.00	Sci&Tech	No	66.0	Mkt&HR	59.43	Not Placed	NaN
4	5	M	85.80	Central	73.60	Central	Commerce	73.30	Comm&Mgmt	No	96.8	Mkt&Fin	55.50	Placed	425000.0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
210	211	M	80.60	Others	82.00	Others	Commerce	77.60	Comm&Mgmt	No	91.0	Mkt&Fin	74.49	Placed	400000.0
211	212	M	58.00	Others	60.00	Others	Science	72.00	Sci&Tech	No	74.0	Mkt&Fin	53.62	Placed	275000.0
212	213	M	67.00	Others	67.00	Others	Commerce	73.00	Comm&Mgmt	Yes	59.0	Mkt&Fin	69.72	Placed	295000.0
213	214	F	74.00	Others	66.00	Others	Commerce	58.00	Comm&Mgmt	No	70.0	Mkt&HR	60.23	Placed	204000.0
214	215	M	62.00	Central	58.00	Others	Science	53.00	Comm&Mgmt	No	89.0	Mkt&HR	60.22	Not Placed	NaN

Quantitative Analysis:

```
dataset[quan]
```

	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
0	67.00	91.00	58.00	55.0	58.80	270000.0
1	79.33	78.33	77.48	86.5	66.28	200000.0
2	65.00	68.00	64.00	75.0	57.80	250000.0
3	56.00	52.00	52.00	66.0	59.43	NaN
4	85.80	73.60	73.30	96.8	55.50	425000.0
...	...	...	...	...	...	...
210	80.60	82.00	77.60	91.0	74.49	400000.0
211	58.00	60.00	72.00	74.0	53.62	275000.0
212	67.00	67.00	73.00	59.0	69.72	295000.0
213	74.00	66.00	58.00	70.0	60.23	204000.0
214	62.00	58.00	53.00	89.0	60.22	NaN

215 rows × 6 columns

Output:

```
: from central_tendency import CentralTendency
```

```
: CentralTendency.central_tendency(dataset, quan)
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:

	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
Mean	67.303395	66.333163	66.370186	72.100558	62.278186	288655.405405
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

Analysis:
As per the output, please find the observations

Mean:

Overall the students are getting average marks in all the columns except the entrance exam in which they get good marks.

etest_p has high average marks and **hsc_p** has low average marks as compared to all the columns

Mean and Median:
There is a lot of deviation between mean and median which indicates there is outliers are there in the dataset and it affects the mean of the values

Let's compare mean and median of each columns:

1. ssc_p - the difference is 0.30 it has little bit more outliers than mba_p
2. hsc_p - the difference is 1.33 so it has little bit more outliers as compared to etest_p
3. degree_p -the difference is 0.37 so it has little bit more outliers than ssc_p
4. etest_p - the difference is 1.10 so it has little bit less outliers than degree_p
5. mba_p - the difference is 0.27 so it has minimal outliers than all columns
6. salary - the difference is 236544 so it has high outliers than all columns

Below is the order of outliers from **low** **to** **high**

Low outliers - - - - - - - - - -– - - - - - - - -– - - - -High outliers
mba_p < ssc_p < degree_p < etest_p < hsc_p < salary

As per the result , **salary** column has lot of outliers and **mba_p** columns has minimal outliers as compared to all the columns

Mode:

As per the mode value, please find the repeated marks got by all the students in each grades, degree and tests

1. ssc_p - Most of the students gets 62 marks in ssc_p which is greater than etest_p
2. hsc_p - Most of the students gets 63 marks in hsc_p which is greater than ssc_p

3. degree_p -Most of the students gets 65 marks in degree_p which is greater than hsc_p

4. etest_p - Most of the students gets 60 marks in etest_p which is greater than mba_p

5. mba_p - Most of the students gets 56.7 marks in mba_p which is less than ssc_p all columns

6. salary -Most of the students gets 300000 salary which is greater than all the columns

Below is the order of high values of repeated marks from **low** **to** **high**

mba_p < etest_p < ssc_p < hsc_p < degree_p < salary

As per the final results, all the students are getting average marks (as per mean and mode) and we could see high outliers in Salary because most of the students got 300000 salary but some of them get low salary which is causing outliers in Salary column.