

# Statistical analysis of tips given by female and male



TIP AMOUNTS

\$5.60

EUR  
€ 5.60

TIP AMOUNTS

\$5.60

EUR  
€ 6.00



# Dataset

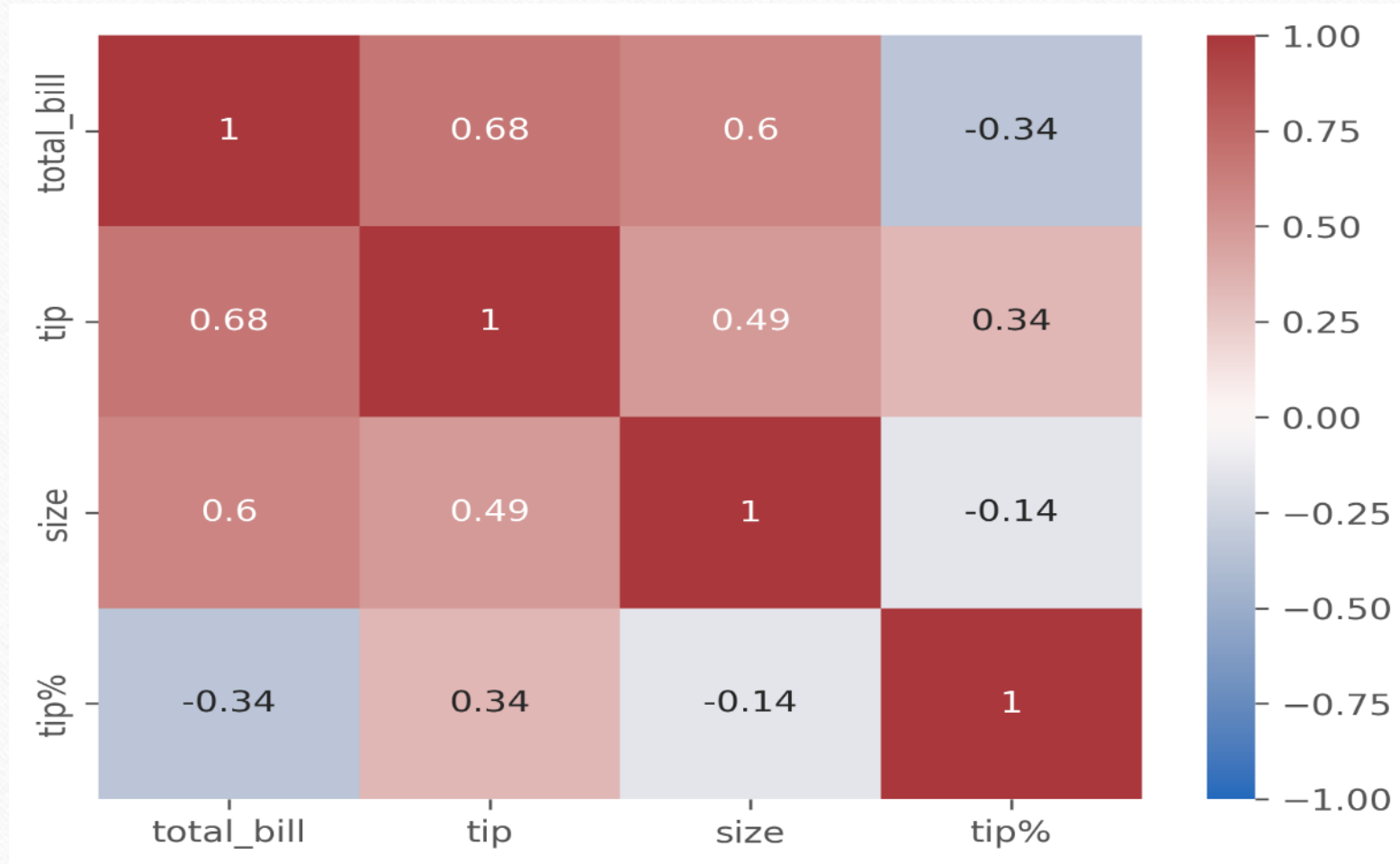
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- Dataset- only one data table with 244 rows
- Variables: total bil, tip, smoker, sex, day, time, size
- Analysed two group : - Group\_male 157 rows  
- Group\_female 87 rows

# Descriptive statistics

	total_bill	tip	sex	smoker	day	time	size	tip%
count	244	244	244	244	244	244	244	244
unique	NaN	NaN	2	2	4	2	NaN	NaN
top	NaN	NaN	Male	No	Sat	Dinner	NaN	NaN
freq	NaN	NaN	157	151	87	176	NaN	NaN
mean	19.785943	2.998279	NaN	NaN	NaN	NaN	2.569672	0.160803
std	8.902412	1.383638	NaN	NaN	NaN	NaN	0.951100	0.061072
min	3.070000	1.000000	NaN	NaN	NaN	NaN	1.000000	0.035638
25%	13.347500	2.000000	NaN	NaN	NaN	NaN	2.000000	0.129127
50%	17.795000	2.900000	NaN	NaN	NaN	NaN	2.000000	0.154770
75%	24.127500	3.562500	NaN	NaN	NaN	NaN	3.000000	0.191475
max	50.810000	10.000000	NaN	NaN	NaN	NaN	6.000000	0.710345

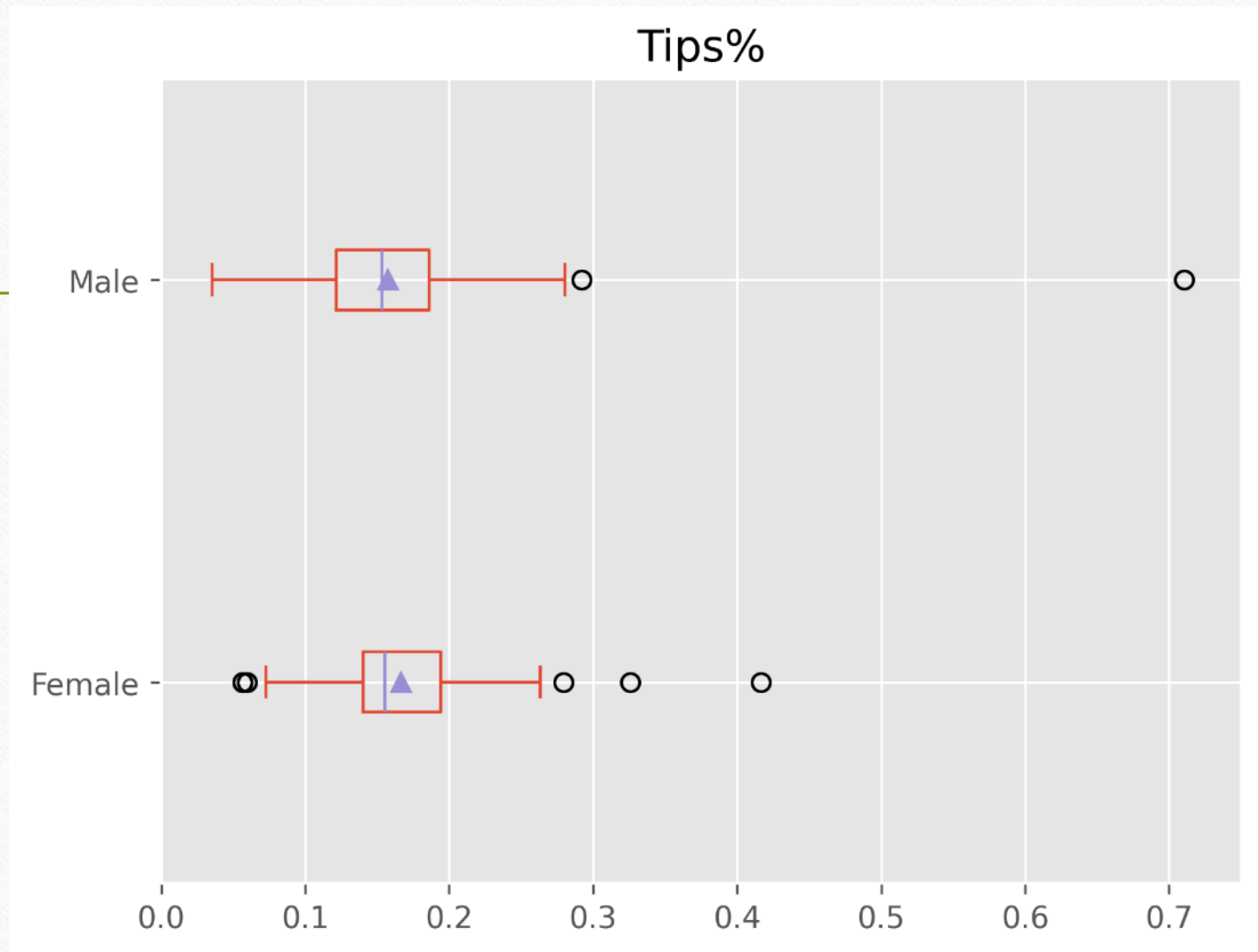


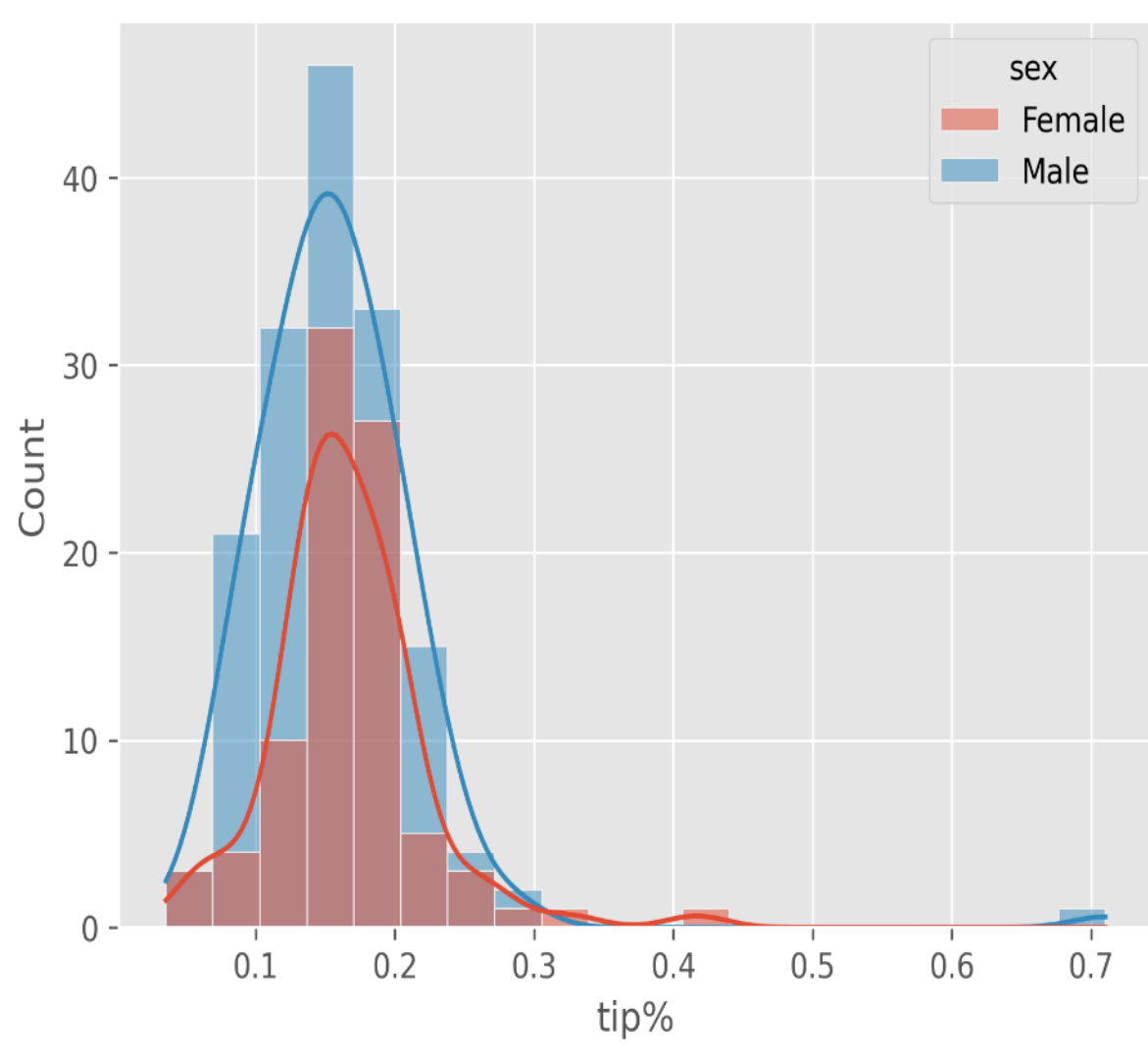


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Correlation  
in heatmap

Box plot for  
tips% given by  
female and male





Right-skewed

skew\_male = 3,99

skew\_female = 1,31

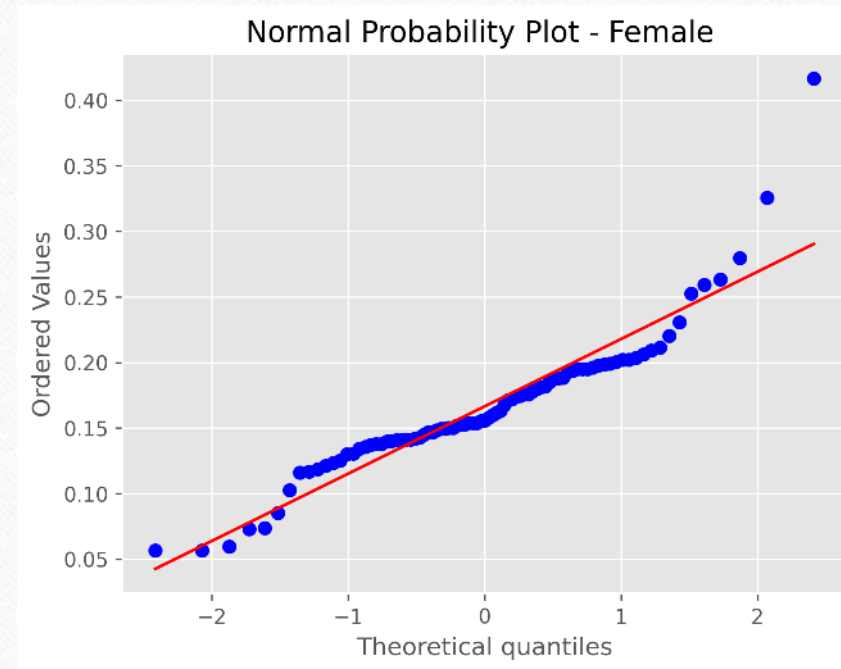
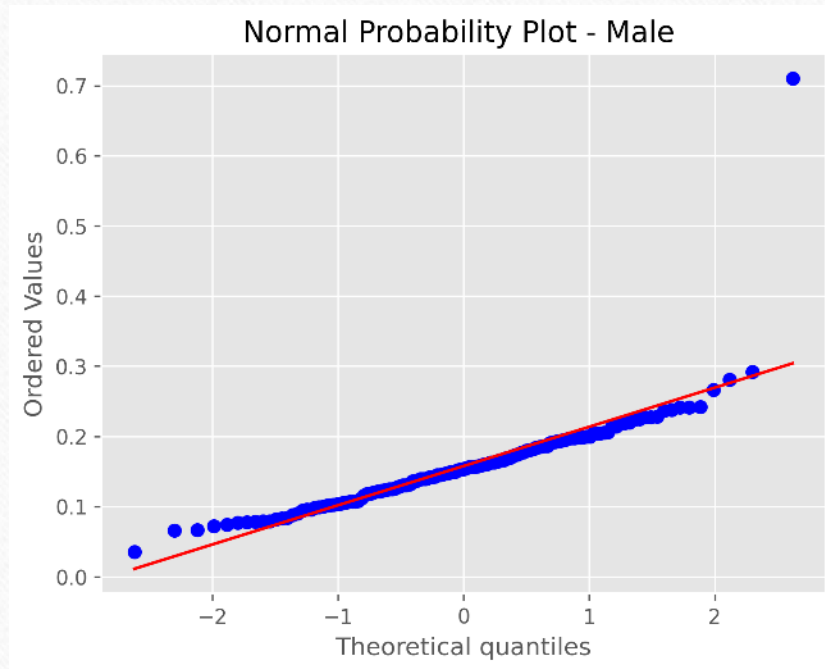
Leptokurtosis

Kurtosis\_male = 31,98

Kurtosis\_female = 5,05



Sample groups are significantly DIFFERENT from a normal distribution according to Shapiro-Wilk normality test ( $p=0,00$ )



There is NO significant DIFFERENCE in the two sample groups

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Levene's test       $p = 0,4986$

Student's t-test       $p = 0,2797$