QUESTION 4

Customer Segmentation Analysis

DESCRIPTION

Imagine that our department was given a data set that captures information about shopping centre customers. The shopping centre marketing team wants to have an insight into their customer segmentation to understand what demographic and subpopulations are present within their customer base.

Our team loaded data and built several plots to visualize analytical findings. Now we need to interpret, explain these graphs as well as write recommendations (if and where applicable) on how our findings can be used.

TASK

Given data set example, stats and several graphs below, please write down your analysis insights and conclusions drawn upon these visuals.

It is entirely up to you how to arrange your answer: you may choose to provide a couple of bullet point for each or some of the key graphs OR write down a list of general conclusions for this dataset.

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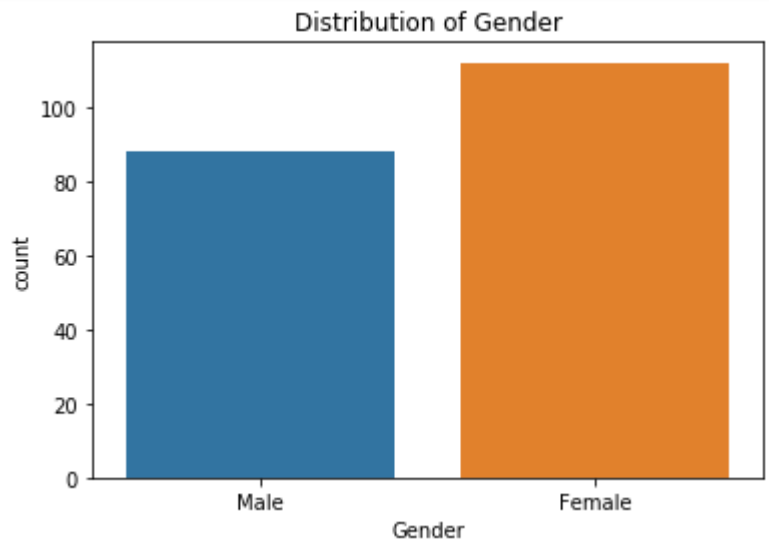
1. **Data sample (head call)**

	CustomerID	Gender	Age	Annual Income (k$)	Spending Score (1-100)
0	1	Male	19	15	39
1	2	Male	21	15	81
2	3	Female	20	16	6
3	4	Female	23	16	77
4	5	Female	31	17	40

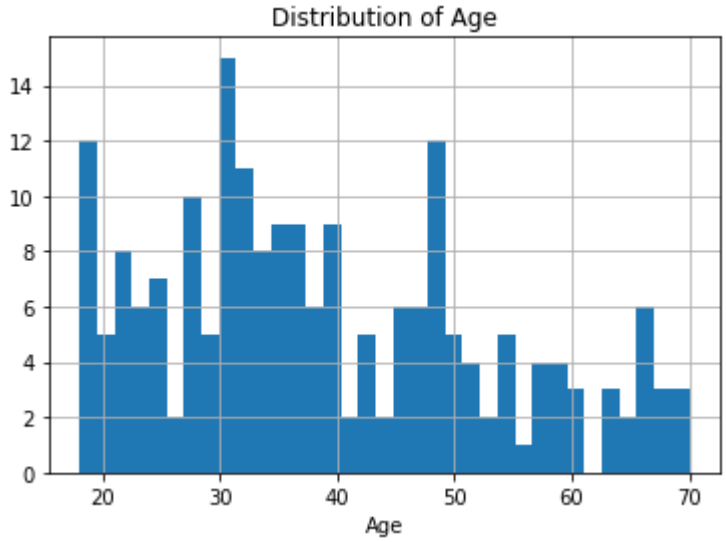
2. **Descriptive statistics (describe call)**

	CustomerID	Age	Annual Income (k$)	Spending Score (1-100)
count	200.000000	200.000000	200.000000	200.000000
mean	100.500000	38.850000	60.560000	50.200000
std	57.879185	13.969007	26.264721	25.823522
min	1.000000	18.000000	15.000000	1.000000
25%	50.750000	28.750000	41.500000	34.750000
50%	100.500000	36.000000	61.500000	50.000000
75%	150.250000	49.000000	78.000000	73.000000
max	200.000000	70.000000	137.000000	99.000000

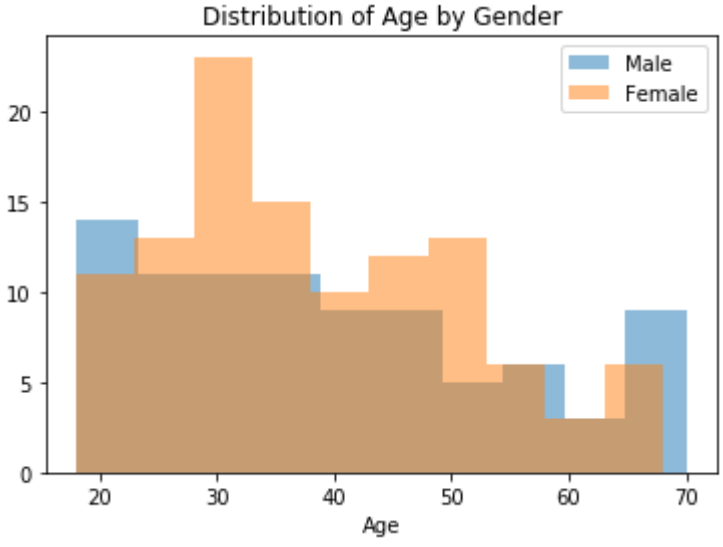
3. Gender distribution



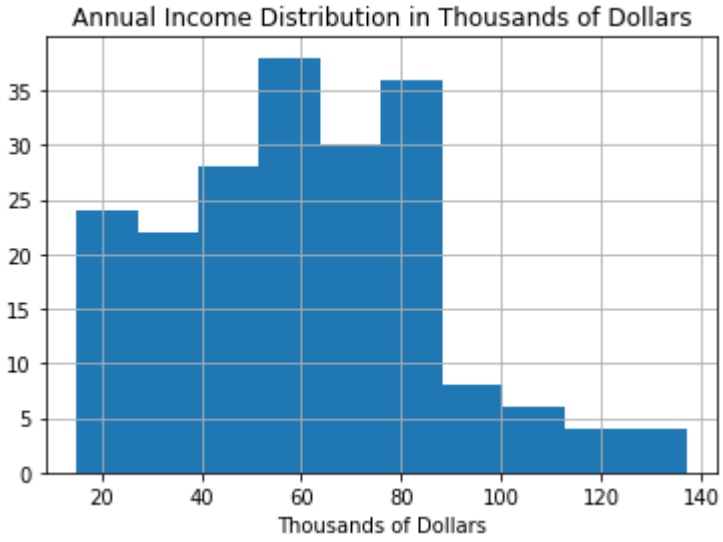
4. Customer Ages



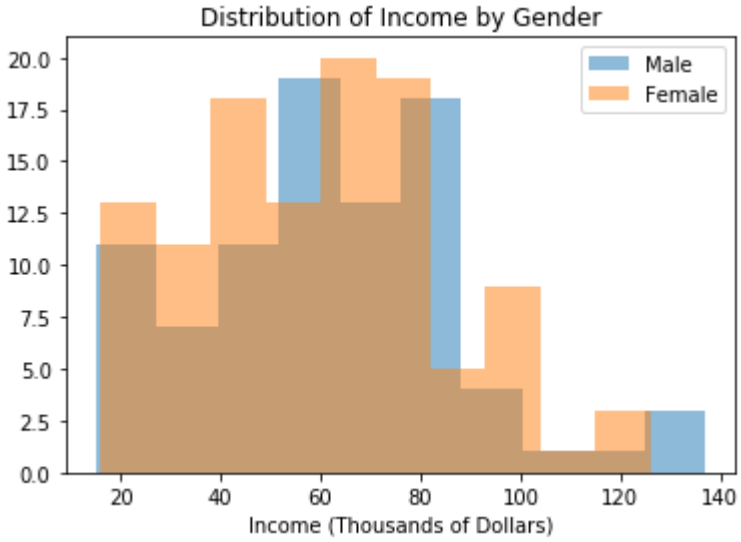
5. Age by gender



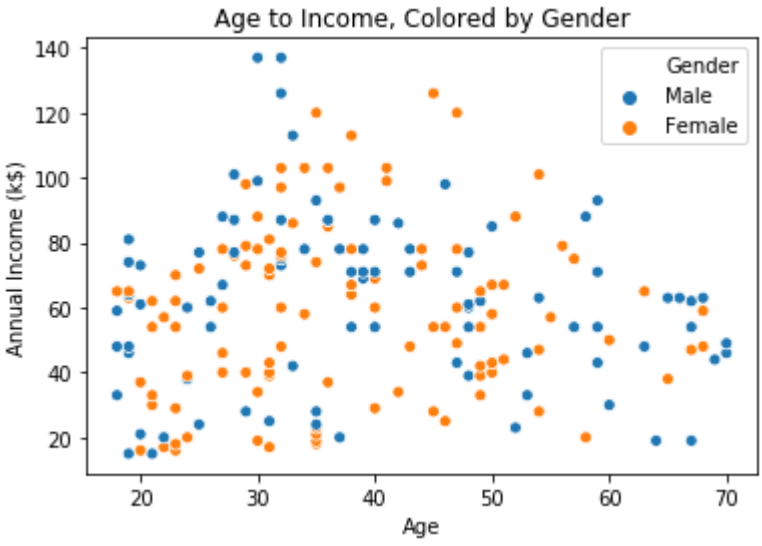
6. **Distribution of income**



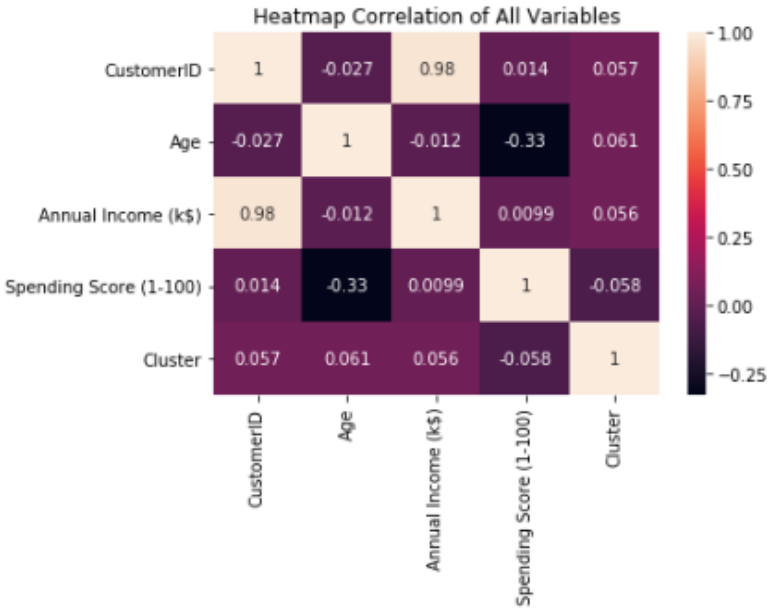
7. **Distribution of income by gender**



8. **Age and income by gender**

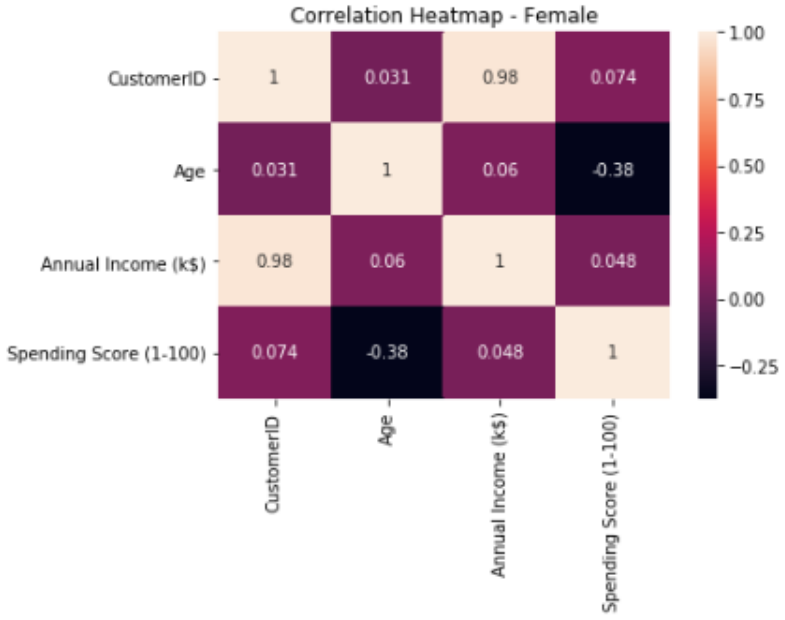


9. **Correlation heat map of each variable**



10. **Age to spending score (the higher the score the more money a customer spends)**

11. **Correlation heat map for female customers**



12. Correlation heatmap for male customers

13. Age to spending score for women with a regression line

14. Income to spending score