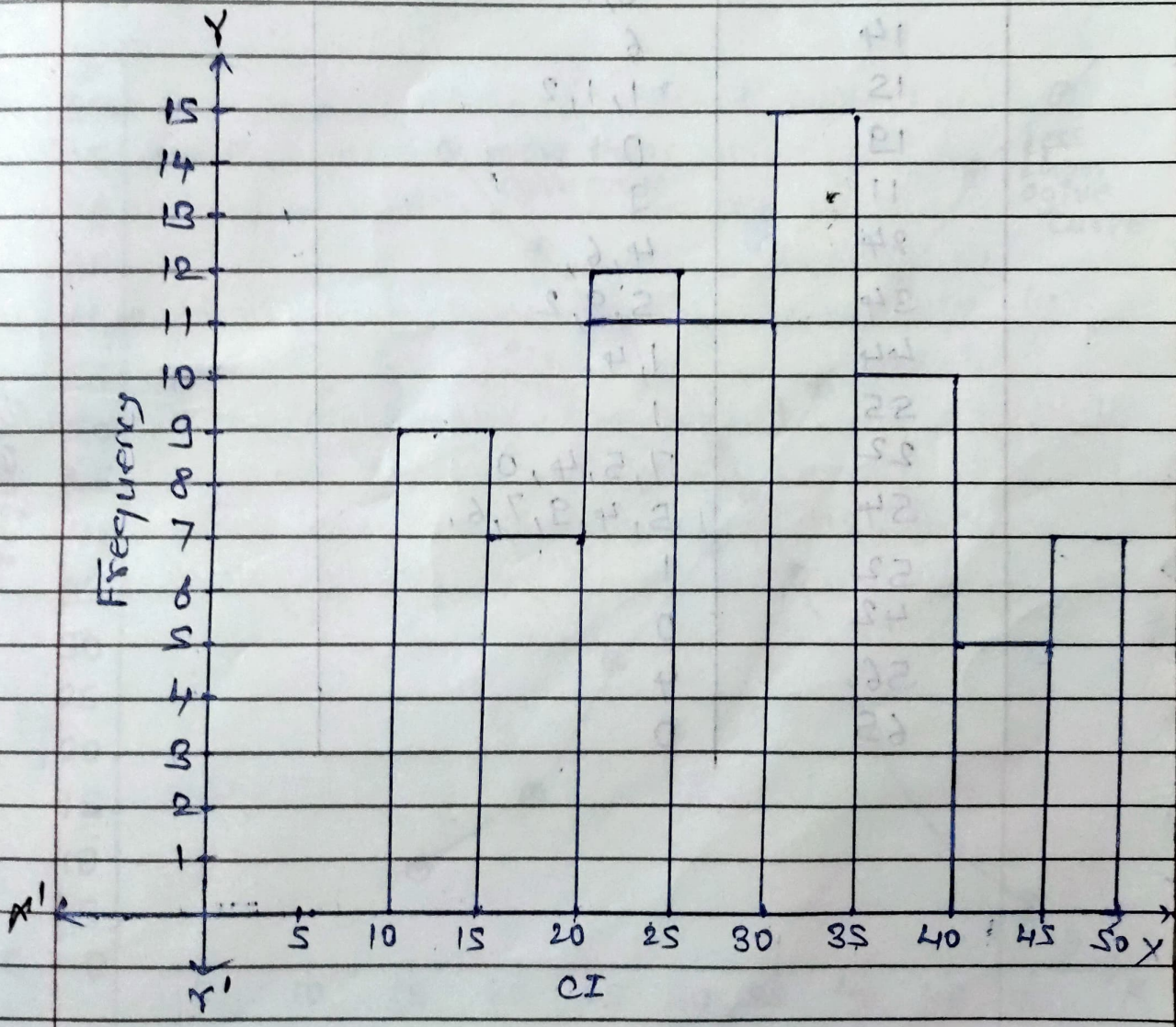
Assignment NO.1

Q1. Differentiate between Attribute & Variable with an example.

SR NO	Attribute	Variable
(1)	Attributes are qualitative in nature and represent categorical charecteristics with distinct categories or groups	Variables are quantitative in nature and represent measurable charecteristics with numerical values that can vary across
(2)	They do not posses inherent numerical value or order	They have a meaningful order or scale.
(3)	Data associated with attributes are called as nominal data, as they are simply labels or names for different categories	Data associated with Variable are called as numerical data, as they consist of numerical values representing measurable quantities.
(4)	Attribute are often used in descriptive statistics to summarize and categorize data.	Variable are typically used in inferential statistics to make predictions.
(5)	Since attributes are categorical, mathematical operations do not make the sense in the context of attributes	Variables can be subjected to various mathematical operations due to their numerical nature
(6)	Examples: ① marital status ② Education level ③ Type of vehicle ④ Eye color	Examples: ① Income of person ② Age ③ Blood Pressure ④ No. of students in class

(2) Construct a Histogram for following data

CI	Frequency
10-15	9
15-20	7
20-25	12
25-30	11
30-35	15
35-40	10
40-45	5
45-50	7



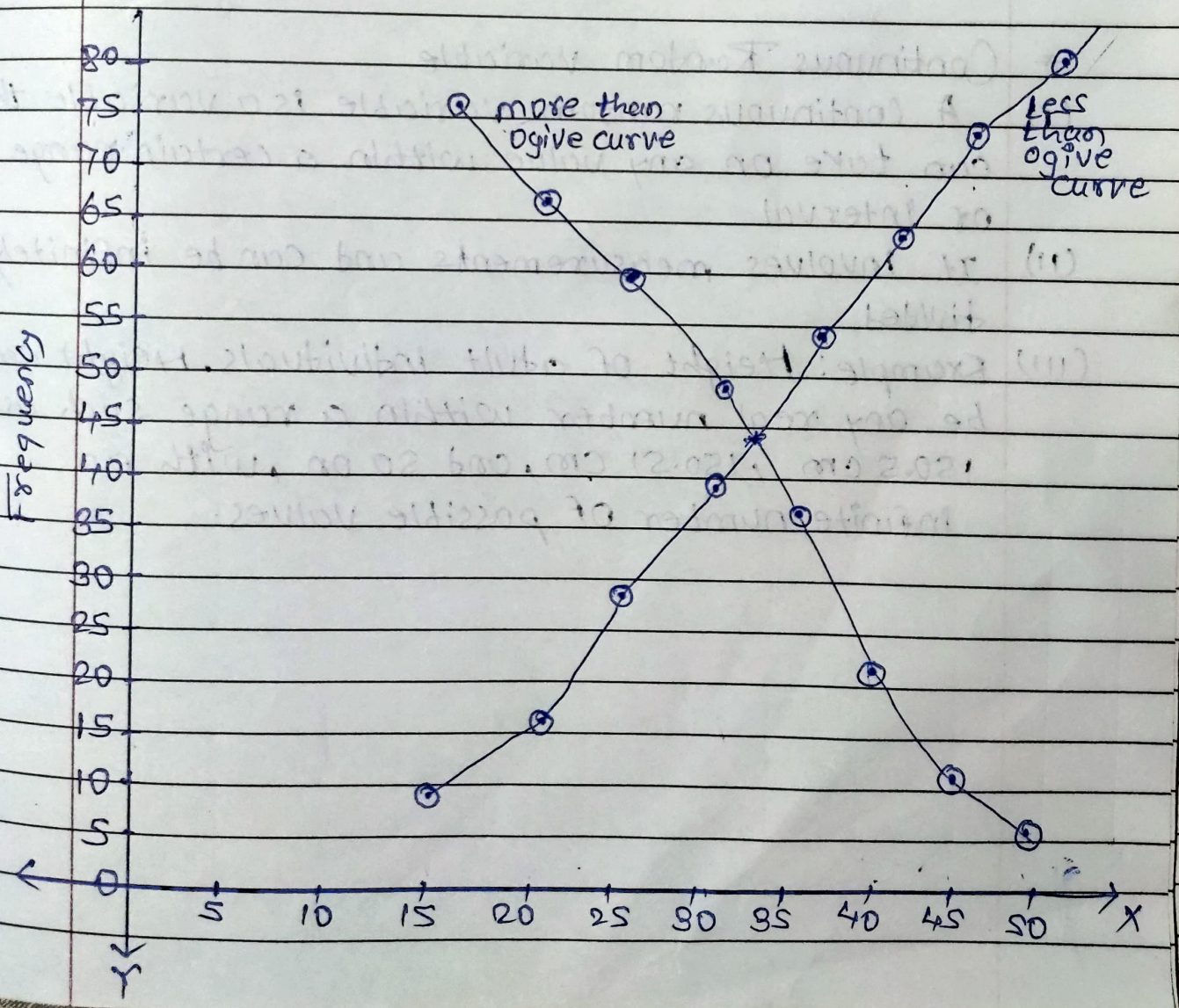
Q3 Construct a Steam and Leaf display for following

[136, 126, 146, 151, 121, 190, 119, 244, 345, 246, 349, 441, 444, 551, 227, 225, 545, 342, 151, 152, 521, 544, 549, 547, 546, 224, 220, 420, 564, 650]

Steam	Leaf
13	6
12	6, 1
14	6
15	1, 1, 2
19	0
11	9
24	4, 6,
34	5, 9, 2
44	1, 4.
55	1
22	7, 5, 4, 0
54	5, 4, 9, 7, 6.
52	1
42	0
56	4
65	0

Q.4 Construct ogive curve for less than & more than for following data.

CI	F	Less than ogive	more than ogive	Points for less than	Points for more than
10-15	9	9	76	(15, 9)	(15, 76)
15-20	7	16	67	(20, 16)	(20, 67)
20-25	12	28	60	(25, 28)	(25, 60)
25-30	11	39	48	(30, 39)	(30, 48)
30-35	15	54	37	(35, 54)	(35, 37)
35-40	10	64	22	(40, 64)	(40, 22)
40-45	5	69	12	(45, 69)	(45, 12)
45-50	7	76	7	(50, 76)	(50, 7)
	76				



Q5) Explain Discrete & Continuous Random Variable with an Example.

→ Discrete Random variable:

(i) A discrete random variable is a type of variable that can only take on specific, seperate value with gaps between them

(ii) It usually involves counting or whole number data.

(iii) Example: Number of coins tosses to get a heads The possible values are 1, 2, 3 and so on, with no values in between

* Continuous Random variable

(i) A continuous random variable is a variable that can take on any value within a certain range or interval

(ii) It involves measurements and can be infinitely divided

(iii) Example: Height of adult individuals. Height can be any real number within a range such as 150.5 cm, 150.51 cm, and so on, with an infinite number of possible values.