THE SCOPE OF TOOLS AND TECHNIQUES
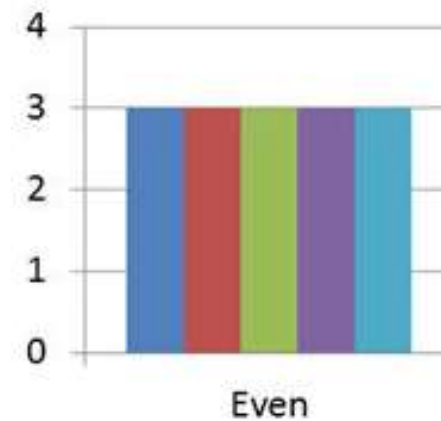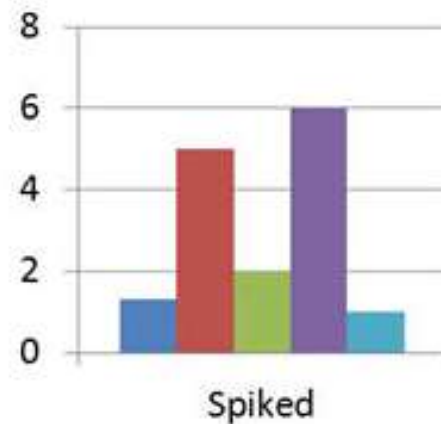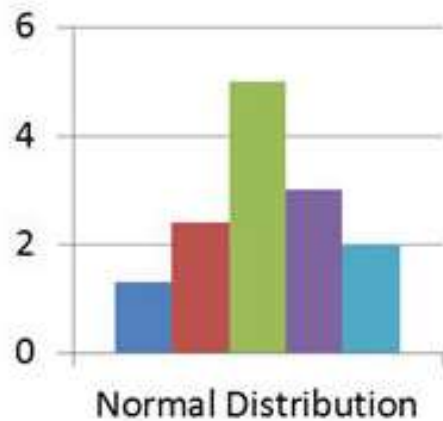
K.M.Eazhil
Assistant Professor
Department of Mechanical Engineering
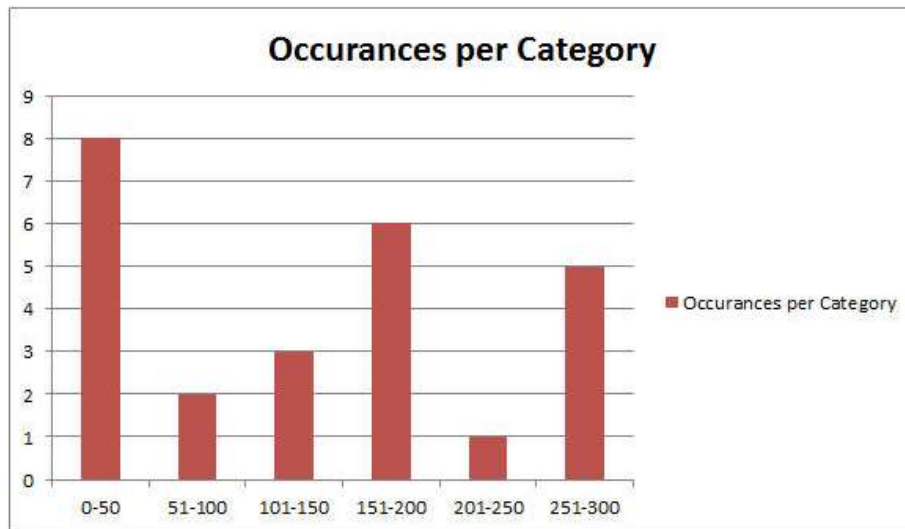**SNS College of Engineering**
Coimbatore

HISTOGRAM

➢ Histogram to discern a process variation

➢ This is an kind of data visualization

➢ Here, a histogram is useful in evaluating the shape of the

data

CREATING A HISTOGRAM:

1. Get Data

2. Order it and Assign Categories

3. Create a Bar Chart Preserving Counts and Categories

Entry	Time in Mins
1	153
2	162
3	280
4	282
5	158
6	11
7	9
8	158
9	7
10	160
11	269
12	259
13	223
14	71
15	9
16	157

Entry	Category	Time in Mins
9	0-50	7
7	0-50	9
15	0-50	9
6	0-50	11
24	0-50	22
18	0-50	29
25	0-50	39
23	0-50	41
19	51-100	55
14	51-100	71
21	101-150	103
17	101-150	142
22	101-150	146
1	151-200	153
16	151-200	157
5	151-200	158
8	151-200	158

Occurances per Category

ACTIVITY

Jeff is the branch manager at a local bank. Recently,

Jeff's been receiving customer feedback saying that the

wait times for a client to be served by a customer service

representative are too long. Jeff decides to observe and

write down the time spent by each customer on waiting.

Here are his findings from observing and writing down

the wait times spent by 20 customers:

Customer Wait Time in Seconds (n=20)	
43.1	42.2
35.6	45.5
37.6	30.3
36.5	31.4
45.3	35.6
43.5	45.2
40.3	54.1
50.2	45.6
47.3	36.5
31.2	43.1

Draw histogram with (5-second intervals in X-axis & Customers in Y axis)

ACTIVITY

➢ How many customers waiting between **1 and 35 seconds?**

➢ How many customers waiting between **1 and 40 seconds**

➢ How many customers waiting between **1 and 45 seconds**

➢ How many customers waiting between **1 and 50 seconds**

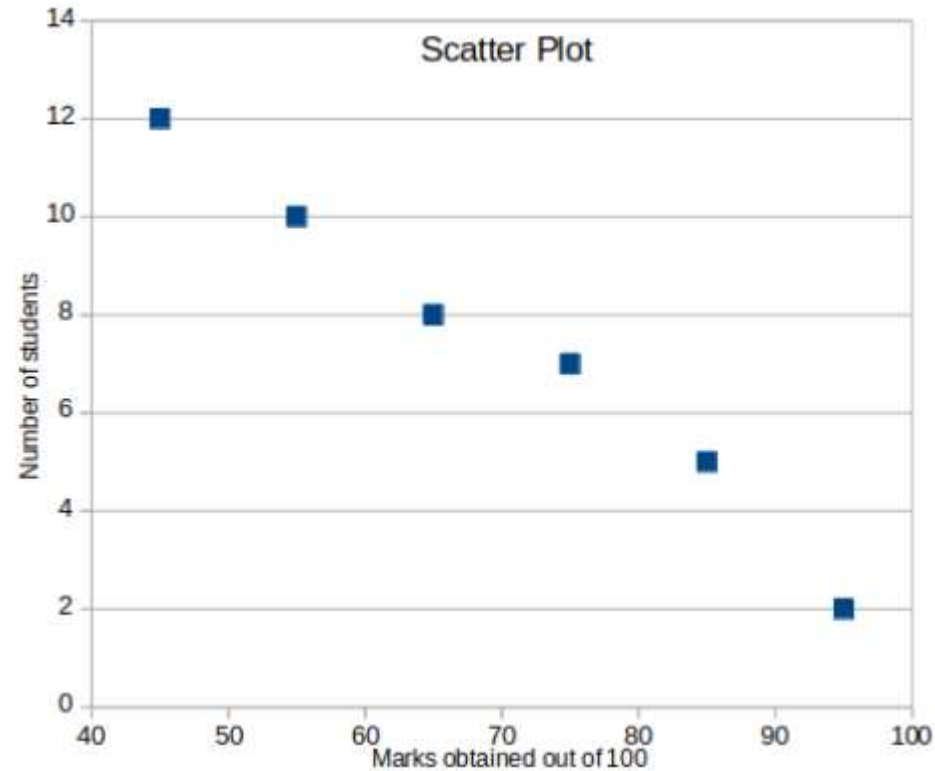➢ How many customers waiting between **1 and 55 seconds**

SCATTER DIAGRAM

Scatter Diagrams are convenient mathematical tools to study the correlation between two variables

Draw the scatter diagram for the given pair of variables and understand the type of correlation between them

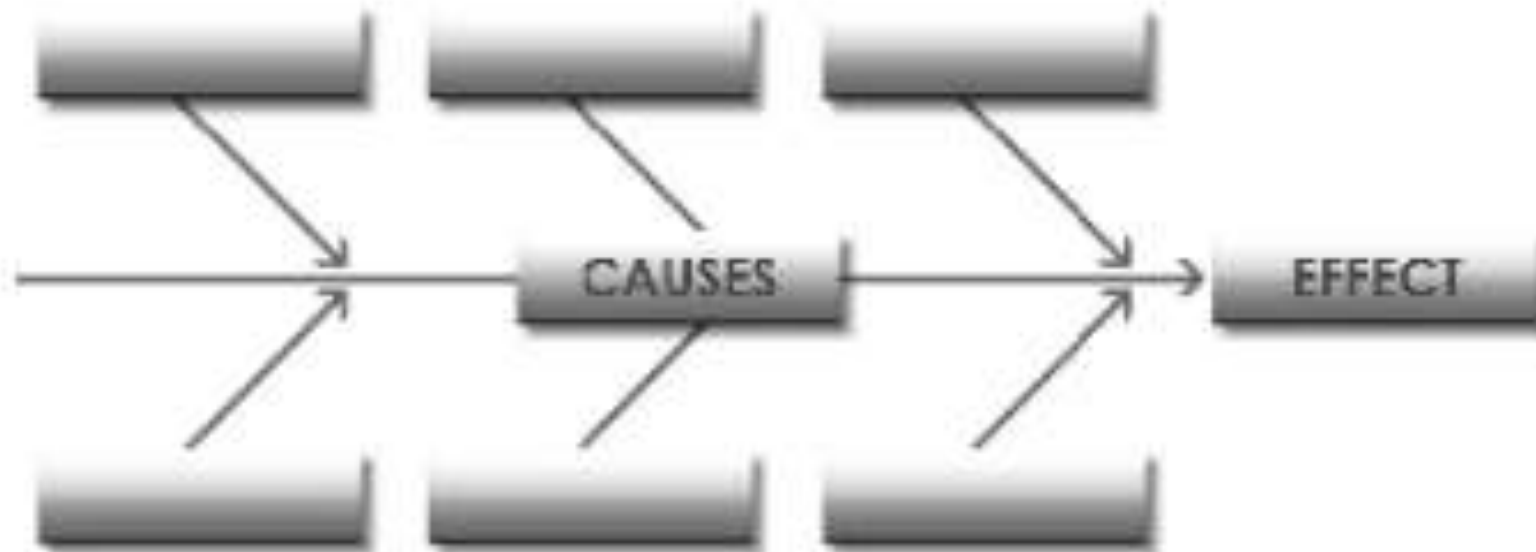| No. of Students	Marks obtained (out of 100)
12	40-50
10	50-60
8	60-70
7	70-80
5	80-90
2	90-100

Scatter Plot

CAUSE AND EFFECT DIAGRAM

A **Cause and Effect Diagram** is a graphical tool for displaying a list of causes associated with a specific effect

It is also known as a fishbone diagram or an Ishikawa diagram

REFERENCES

1. https://www.mathsisfun.com/data/scatter-xy-plots.html

2. https://study.com/academy/lesson/six-sigma-histogram-examples-tutorial.html

3. **What is Lean Six Sigma** By Michael L. George, David T. Rowlands, Bill Kastle

THANK YOU