COMPUTATIONAL THINKING

STATISTICAL ANALYSIS OF DATA USING CHARTS OR GRAPHS

Ex No:7   Date: 3-11-2023

Activity 1:

Students study the linear association between variables by analyzing two sets of data. They learn to **analyze data** in a spreadsheet as well as in a graph, and to **generalize patterns** of positive and negative linear association based on the shape of the graph. Students also learn how to **represent data** in a spreadsheet and relate the "slope" of their graphs to the association between two sets of data.

|	A	B	C
1	Name	Height	Shoe Size
2	Sasha	63	6
3	Hector	68	9
4	Kayla	67	8
5	Adriana	65	7
6	Sean	64	7
7	Kay	61	3
8	Hillary	69	9
9	Thomas	68	9
10	Luis	64	8
11	Mayra	66	6
12	Michael	68	10
13	Tonya	64	8
14	Philip	65	8
15	Raymond	66	9
16	Jalen	70	10
17	Samantha	62	4

Use the corresponding formula to determine the following

   A. Draw the Bar chart for the above-given data.

   B. Find the average Height and shoe size.

   C. Determine the Maximum or Minimum Shoe size among the above-given data.

   D. Who is taller and smaller from the above data?

Activity 2: Create a scatter plot and analyze data

Activity:
Create a scatter plot chart to visualize the collected data like the one below
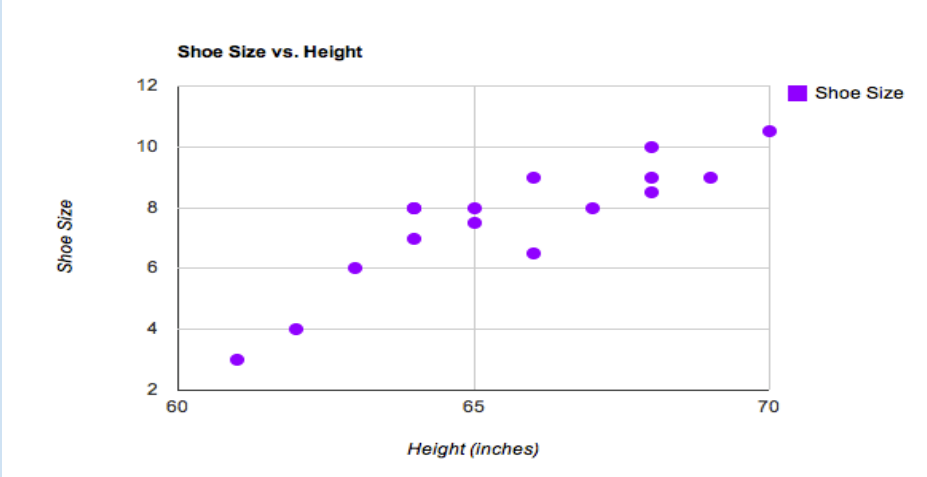
questions:

Q1: What piece of information can we get from the spreadsheet that we cannot from the graph?

Q2: Describe any advantages of representing the data graphically.

Q3: Describe any patterns in the trends between height and shoe size.

Q4: What term do we use to describe trends represented by graphs with "positive slope"?

Q5: Based on the scatter plot, list at least one exception to the trend of shoe size increasing as height increases.

Activity 3: In this activity, students will represent data in an additional graph. Students will compare two patterns and their graphical representations to strengthen their understanding of positive and negative association.

Breed	Lifespan (years)	Male Weight (lbs)
Afghan Hound	12	60
Airedale Terrier	11	60
American Stafford. Terrier	12	62
Basset Hound	13	42
Beagle	13	23
Bearded Collie	12	42
Bedlington Terrier	14	20

Bernese Mountain Dog	7	92
Border Collie	13	37
Border Terrier	13	14
Boxer	10	65
Bull Terrier	13	62
Bullmastiff	9	120
Cairn Terrier	13	16
Cav. King Charles Spaniel	11	14
Chihuahua	13	4
Chow Chow	14	57
Cocker Spaniel	13	23
Dachshund	12	15
Dalmatian	13	68
Doberman Pinscher	10	78
English Cocker Spaniel	12	33
English Setter	11	67
English Springer Spaniel	13	50
English Toy Spaniel	10	11
Flat-Coated Retriever	10	65
German Shepherd	10	80
German Shorthaired Pointer	12	63
Golden Retrievers	12	70
Gordon Setter	11	68
Great Dane	8	160
Greyhound	13	68
Irish Setter	12	70
Irish Wolfhound	6	110
Jack Russell Terrier	14	16
Labrador Retriever	13	72
Miniature Poodle	15	16
Norfolk Terrier	10	11
Old English Sheepdog	12	62
Pekingese	13	8
Pomeranian	15	5
Rhodesian Ridgeback	9	110
Rottweiler	10	115
Samoyed	11	55
Scottish Deerhound	10	100
Scottish Terrier	12	21
Shetland Sheepdog	13	18
Shiba Inu	14	25
Shih Tzu	13	13
Siberian Husky	14	47
Soft Coated Wheaten Terrier	13	40

Staffordshire Bull Terrier	14	35
Standard Poodle	12	40
Tibetan Terrier	14	24
Toy Poodle	14	7
Vizsla	12	53
Weimaraner	10	63
Welsh Springer Spaniel	12	40
West Highland White Terrier	13	18
Wire Fox Terrier	13	18

Q1: Draw a line chart for the above given data.

Q2: Compare the trend in the graph in weight vs. lifespan.

Q3: If we draw a straight line that passes through the "middle" of the plotted data, would the line have a positive slope or a negative slope?