RAMA UNIVERSITY

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FACULTY OF EGINEERING

DATA MINING & WAREHOUSEING
LECTURE-39

MR. DHIRENDRA

ASSISTANT PROFESSOR

RAMA UNIVERSITY

OUTLINE

- MEASURING THE CENTRAL TENDENCY
- HISTOGRAM ANALYSIS
- QUANTILE PLOT
- QUANTILE-QUANTILE (Q-Q) PLOT
- SCATTER PLOT
- MCQ
- REFERENCES

Measuring the Central Tendency

Variance

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2 = \frac{1}{n-1}\left[\sum x_i^2 - \frac{1}{n}(\sum x_i)^2\right]$$

- Standard deviation: the square root of the variance
  - Measures spread about the mean
  - It is zero if and only if all the values are equal
  - Both the deviation and the variance are algebraic

Histogram Analysis

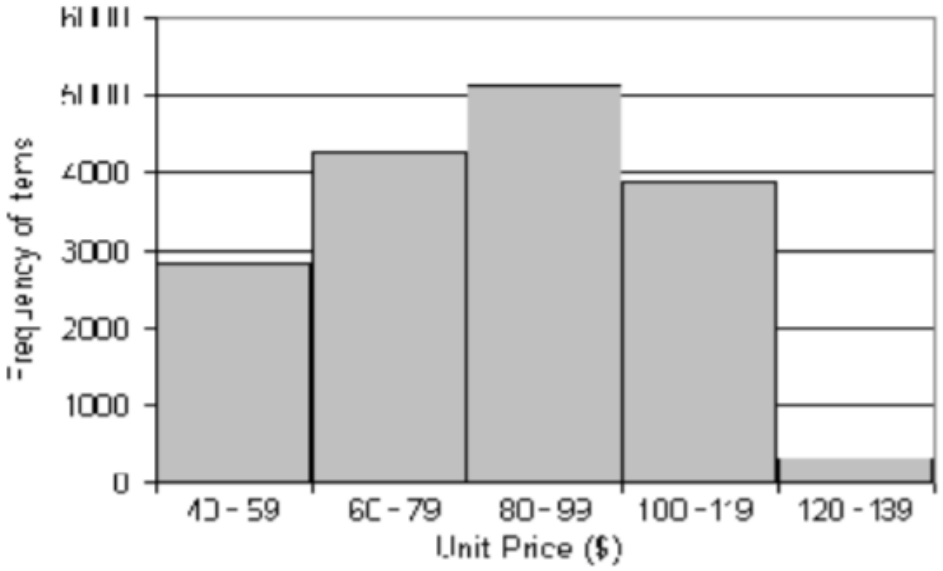
Graph displays of basic statistical class descriptions

– Frequency histograms

• A univariate graphical method

• Consists of a set of rectangles that reflect the counts or frequencies

of the classes present in the given data



Quantile Plot

Displays all of the data (allowing the user to assess

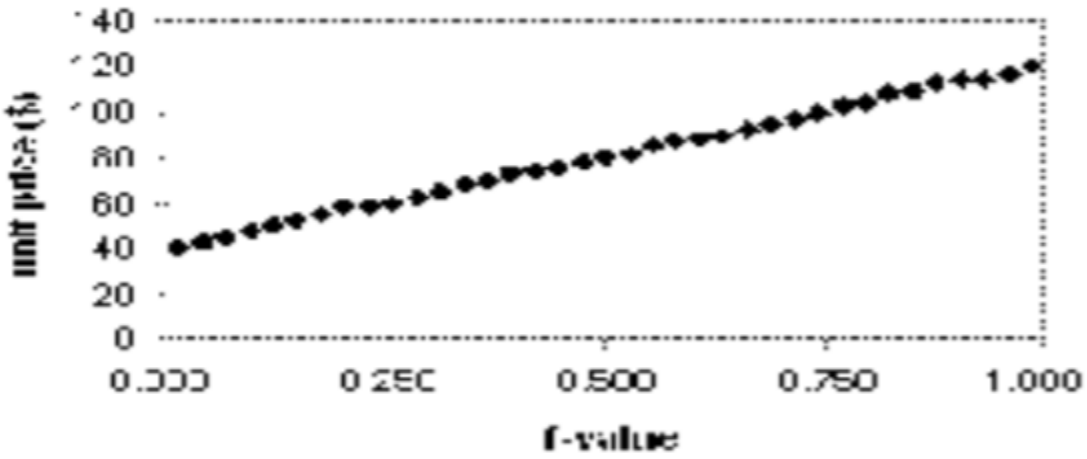
both the overall behavior and unusual occurrences)

• Plots quantile information

– For a data xi data sorted in increasing order, fi indicates

that approximately 100 fi% of the data are below or equal

to the value x

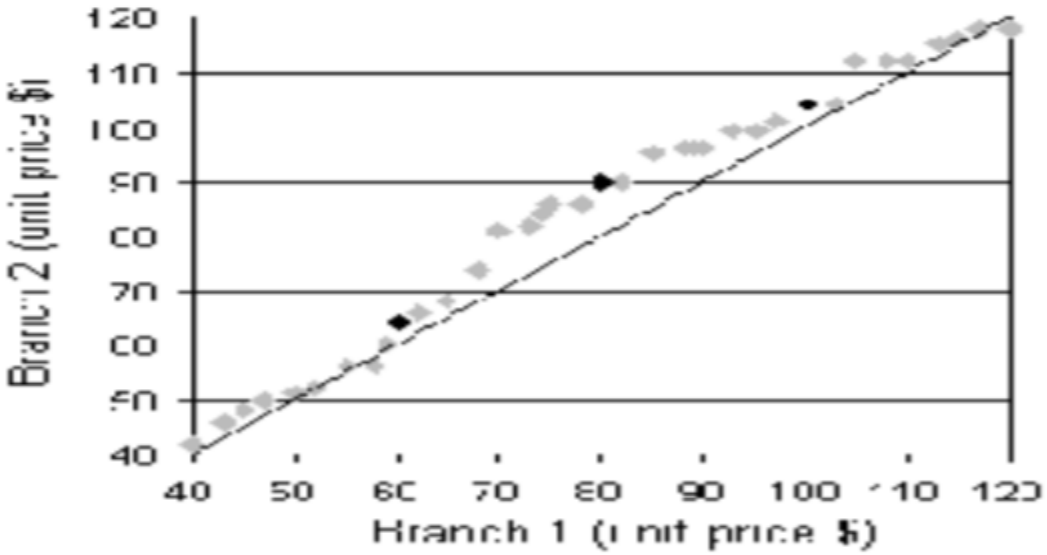


Quantile-Quantile (Q-Q) Plot

Graphs the quantiles of one univariate distribution

against the corresponding quantiles of another

• Allows the user to view where there s a shift in going from one distribution to another



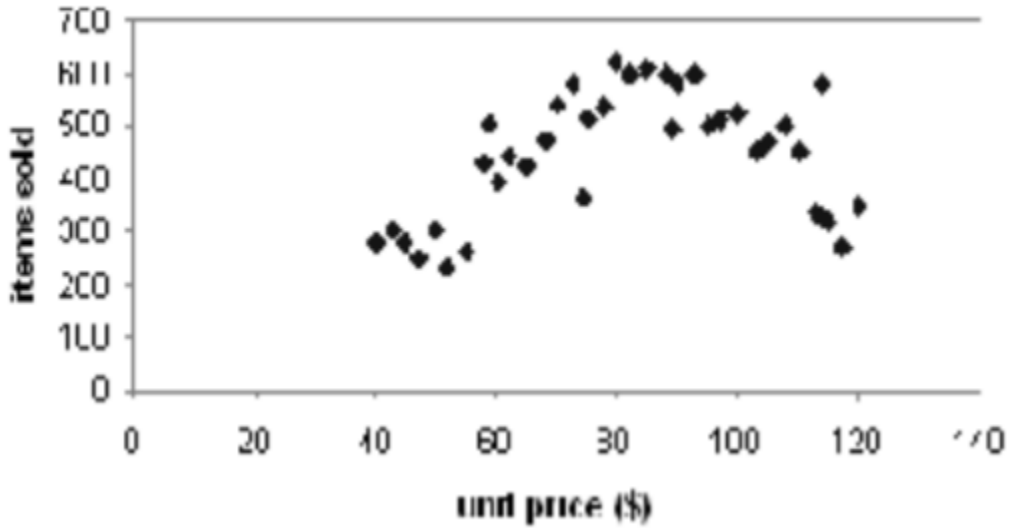
Scatter plot

Provides a first look at bivariate data to see clusters

of points, outliers, etc

• Each pair of values is treated as a pair of coordinates

and plotted as points in the plane



Multiple Choice Question

1. Various visualization techniques are used in _____ step of KDD.
a) selection
b) transformaion
c) data mining.
d) interpretation.

2. Extreme values that occur infrequently are called as _____.
a) outliers
b) rare values.
c) dimensionality reduction.
d) All of the above.

3. Box plot and scatter diagram techniques are _____.
a) Graphical
b) Geometric
c) Icon-based.
d) Pixel-based.

4. _____ is used to proceed from very specific knowledge to more general information.
a) Induction
b) Compression.
c) Approximation.
d) Substitution.

5. Describing some characteristics of a set of data by a general model is viewed as _____
a) Induction
b) Compression
c) Approximation
d) Summarization

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