NAZARETH COLLEGE OF ARTS AND SCIENCE

Affiliated to University of Madras, Re-Accredited by NAAC with 'B' Grade

USES OF STATISTICS IN DAY TO DAY LIFE

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IT IS A MATHEMATICAL SCIENCE PERTAINING TO THE COLLECTION, ANALYSIS, INTERPRETATION OR EXPLANATION, AND PRESENTATION OF DATA. ALSO WITH PREDICTION AND FORECASTING BASED ON DATA.

Statistics form a key basis tool in business and manufacturing as well. It is used to understand measurement systems variability, control processes for summarizing data, and to make data-driven decisions.

Some fields of inquiry use applied statistics so extensively that they have specialized terminology. Ex- engineering statistics, social statistics, statistics in sports, etc...

ORIGIN

The word 'statistics' and 'statistical' are derived from the Latin word status, means political state.

INTRODUCTION

STATISTICS IS CONCERNED WITH SCIENTIFIC METHOD FOR COLLECTING AND PRESENTING, ORGANIZING AND SUMMARIZING AND ANALYZING DATA AS WELL AS DERIVING VALID CONCLUSIONS AND MAKING REASONABLE DECISIONS ON THE BASIS OF THIS ANALYSIS.

The History of Statistics

STATISTICAL METHODS DATE BACK AT LEAST TO THE 5TH CENTURY BC.

Some scholars pinpoint the origin of statistics to 1663, with the publication of **Natural and Political Observations** by John Graunt. Early applications of statistical thinking revolved around the needs of states to base policy on demographic and economic data. The scope of the discipline of statistics broadened in the early 19th century to include the collection and analysis of data in general. Today, statistics is widely employed in government, business, and natural and social sciences.

Blaise Pascal, an early pioneer on the mathematics of probability.

The Seventeenth and Eighteenth Centuries

Its mathematical foundations were laid in the 17th century with the development of the probability theory by Blaise Pascal and Pierre de Fermat. Mathematical probability theory arose from the study of games of chance, although the concept of probability was already examined in medieval law and by philosophers such as Juan Caramuel. The method of least squares was first described by Adrien-Marie Legendre in 1805.

Pierre de Fermat

7 The Nineteenth Century

- At the turn of the century Sir Francis Galt transformed statistics into a rigorous math used for analysis, not just in science, bu politics as well.

Galton's contributions to the field included introducing the concepts of standard deviation, correlation, regression and the application of these methods to the study of the variety of human characteristics Pearson developed the Correlation coefficient, defined as a product-moment, the method of moments for the fitting of distributions to samples and the Pearson's system of continuous curves, among many otherthings.

Karl Pearson, a founder of mathematical statistics.

USE OF STATISTICS IN OUR TODAY'S LIFE

Today, statistics is widely employed in government, business, and natural and social sciences.

Today, statistical methods are applied in all fields that involve decision making, for making accurate inferences from a collated body of data and for making decisions in the face of uncertainty based on statistical methodology. The use of modern computers has expedited large-scale statistical computations, and has also made possible new methods that are impractical to perform manually. Statistics continues to be an area of active research, for example on the problem of how to analyze big data.

USE OF STATISTICS IN REAL LIFE

INDUSTRIES AND BUSINESS

Report of early sales & comparison others.
It shows where the factory or its sales lack and where they are good

AGRICULTURE

What amount of crops are grown this year in comparison to previous year or in comparison to required amount of crop for the country
Quality and size of grains grown due to use of different fertilizer.

FORESTERY

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How much growth has been occurred in area under forest or how much forest has been depleted in last 5 years?

How much different species of flora and fauna have increased or decreased in last 5 years?

EDUCATION

Money spend on girls education in comparison to boys education?

Increase in no. of girl students who seated in who Seated for different exams?

Comparison for result for last 10 years.

ECOLOGICAL STUDIES

Comparison of increasing impact of pollution on global warming?

Increasing effect of nuclear reactors on environment?

MEDICAL STUDIES

No. of new diseases grown in last 10 year.

Increase in no. of patients for a particular disease.

SPORTS

Used to compare run rates of to different teams.

Used to compare to different players.

USE OF STATISTICS IN REAL LIFE

USE OF GRAPHS

Nowadays graphs are used almost everywhere. In Stock Market, graphs are used to determine the profit margins of Stock.

There is always a graph showing how prices have changed over time , unemployment figures , inflation , exchange rates , NASA space stories , global warming statistics , mortgage lending figures , house price comparisons , inflation , budget forecasts. taxation or pension forecasts, Food prices , and how they have changed over time etc.

Graphs are used to explain large amounts of data Medical graphs are used to collect information about patients, such as graphs showing a 1 to 10 pain scale for patients after surgery. These charts can help doctors and nurses quickly assess the effectiveness of pain medications and help doctors determine when to adjust medications as needed for a patient's comfort.

In business, graphs are used to collect and present data used to evaluate the effectiveness of sales campaigns and to assess other aspects of daily business functions, such as comparing expenses to revenues earned. it is used in rating the climate, indicate money and sales chart, stock rates and other financial stuff. it is used to rate annual sales figure. it is used in daily news papers and magazine. it used in computer networking and to rate our savings in year. it is used in surveys, monthly budget, in presentations

MEAN

MEAN IS USED AS ONE OF THE COMPARING PROPERTIES OF STATISTICS. IT IS DEFINED AS THE AVERAGE OF ALL THE CLARIFICATIONS.

The mean of a number of observations is the sum of the values of all the observations divided by the total number of observations.
It is denoted by the symbol $\bar{x}$, *read as 'x bar'.*

APPLICATIONS OF MEAN

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It helps teachers to see the average marks of the students.

It is used in factories, for the authorities to recognize whether the benefits of the workers is continued or not.

It is also used to contrast the salaries of the workers.

To calculate the average speed of anything.

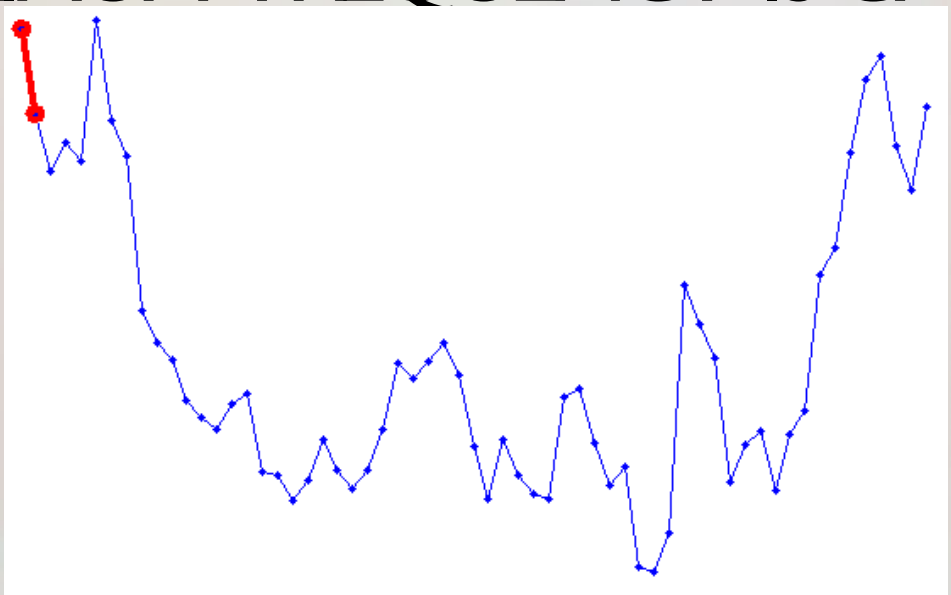
It is also used by the government to find the income or expenses of any person.

The average daily expenditure in a month of a family gives the concept of ***MEAN****.*

If in a tour, the total money spent by10 students is Rs. 500. Then the average money spent by each student is Rs. 50. Here Rs. 50 is the mean.

MODE

THE MODE IS THAT VALUE OF THE OBSERVATION WHICH OCCURS MOST FREQUENTLY, I.E., AN OBSERVATION WITH THE MAXIMUM FREQUENCY IS CALLED



APPLICATIONS OF MODE

The no. of games succeeded by any team of players.

The frequency of the need of infants.

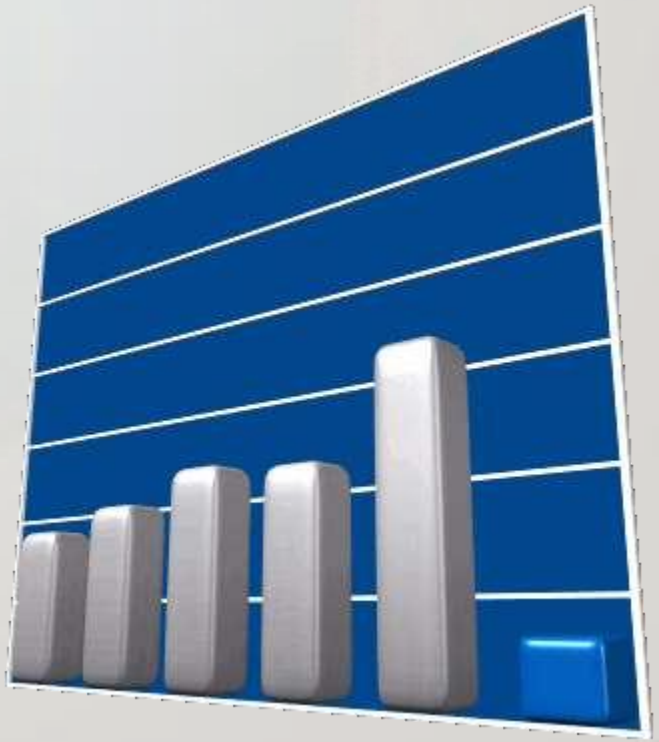
Used to find the number of the mode is also seen in calculation of the wages, in the patients going to the hospitals, the mode of travel etc.

A shopkeeper, selling shirts, keeps more stock of that size of shirt which has more sale. Here the size of that shirt is the mode among other .

*A shopkeeper keeps more stock of a particular type of shoe which has more sale. Here the concept of **MODE** applies.*

MEDIAN

THE MEDIAN IS THAT VALUE OF THE GIVEN NUMBER OF OBSERVATIONS, WHICH DIVIDES IT INTO EXACTLY TWO PARTS.



APPLICATIONS OF MEDIAN

It is used to measure the distribution of the earnings

Used to find the players height e.g. football players.

To find the middle age from the class students.

Also used to find the poverty line.

If 15 people of different heights are standing height-wise, then the middle man's height is the ***MEDIAN*** *height.*

If you have 25 people lined up next to each other by age, the median age will be the age of the person in the very middle. Here the age of the middle person is the median.

Thank you