



KIDS & TEENS FREELANCING TRAINING INSTITUTE

Statistics Course Outline

Module 1: What is Statistics?

- Simple definition: Statistics is the science of collecting, analyzing, and interpreting data
 - It helps you make sense of numbers and find patterns
 - Real-life example: Counting the number of cars that pass by a street corner
 - Activity: Count and organize data (like favorite colors in class)
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Module 2: Types of Data and Measurements

- Different types of data: Categorical (qualitative) and numerical (quantitative)
 - Real-life example: Data of shoe sizes (numerical) and hair colors (categorical)
 - Learn about measurements like mean, median, and mode
 - Activity: Calculate the mean of test scores in class
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Module 3: Data Visualization – Understanding Graphs

- Types of graphs: Bar charts, pie charts, histograms, and box plots
 - Real-life example: Showing the popularity of different foods with a pie chart
 - Why graphs make it easier to understand big numbers
 - Activity: Draw a pie chart to represent favorite fruits in class
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Module 4: Descriptive Statistics – Summarizing Data

- How to summarize data with measures of central tendency (mean, median, mode)
- Real-life example: Analyzing the average height of a group of students
- Understand variability with range, variance, and standard deviation
- Activity: Calculate the range and standard deviation for a set of numbers

Module 5: Probability – Predicting Outcomes

- Introduction to probability and how it helps in making predictions
- Real-life example: Probability of getting heads in a coin toss
- Basic rules: Adding, multiplying, and conditional probability
- Activity: Use dice rolls to calculate the probability of getting a specific number

Module 6: Hypothesis Testing – Making Data-Driven Decisions

- Understanding null hypothesis and alternative hypothesis
- Real-life example: Testing if a new recipe is better than an old one
- Learn how to perform tests like t-tests and chi-square tests
- Activity: Hypothesize about the class' favorite sport and test it with a survey

Module 7: Real-World Applications of Statistics

- Statistics in business, health, sports, and government
- Real-life example: Predicting the success of a new product using statistical data
- How companies use statistics for decision-making
- Activity: Analyze a dataset to predict an outcome (e.g., sports game scores)

Module 8: Statistics for Future Careers

- Careers: Data Analyst, Statistician, Data Scientist, Researcher
- Why understanding statistics is key to working in technology, finance, and science
- Real-life example: How statistics help in public health, like tracking disease spread
- Activity: Create a career roadmap that includes statistics

Bonus Materials

- Practice problems on mean, median, mode, and probability
- Flashcards for statistical terms and formulas
- Real-world datasets for hands-on analysis
- Interactive quiz to test your knowledge
- Certificate of Completion for Statistics

