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  Course: Statistical_Inference
  Lesson: Introduction


- Class: text
  Output: "Introduction to Statistical_Inference. (Slides for this and other Data
  Science courses may be found at github
  https://github.com/DataScienceSpecialization/courses. If you care to use them, they
  must be downloaded as a zip file and viewed locally. This lesson corresponds to
  Statistical_Inference/Introduction.)"

- Class: text
  Output: In this lesson, we'll briefly introduce basics of statistical inference, the
  process of drawing conclusions "about a population using noisy statistical data where
  uncertainty must be accounted for". In other words, statistical inference lets
  scientists formulate conclusions from data and quantify the uncertainty arising from
  using incomplete data.

- Class: mult_question
  Output: Which of the following is NOT an example of statistical inference?
  AnswerChoices: Polling before an election to predict its outcome; Constructing a
  medical image from fMRI data; Testing the efficacy of a new drug; Recording the
  results of a statistics exam
  CorrectAnswer: Recording the results of a statistics exam
  AnswerTests: omnitest(correctVal='Recording the results of a statistics exam')
  Hint: Which of the choices involves concrete data that doesn't require any inference
  or generalization?

- Class: text
  Output: So statistical inference involves formulating conclusions using data AND
  quantifying the uncertainty associated with those conclusions. The uncertainty could
  arise from incomplete or bad data.

- Class: mult_question
  Output: Which of the following would NOT be a source of bad data?
  AnswerChoices: Small sample size; Selection bias; A randomly selected sample of
  population; A poorly designed study
  CorrectAnswer: A randomly selected sample of population
  AnswerTests: omnitest(correctVal='A randomly selected sample of population')
  Hint: Which of the choices would allow one to draw reasonable inferences?

- Class: mult_question
  Output: So with statistical inference we use data to draw general conclusions about a
  population. Which of the following would  a scientist using statistical inference
  techniques consider a problem?
  AnswerChoices: Our data sample is representative of the population; Our study has no
  bias and is well-designed; Contaminated data
  CorrectAnswer: Contaminated data
  AnswerTests: omnitest(correctVal='Contaminated data')
  Hint: Which of the choices is obviously bad?

- Class: mult_question
  Output: Which of the following is NOT an example of statistical inference in action?
  AnswerChoices: Estimating the proportion of people who will vote for a candidate;
  Testing the effectiveness of a medical treatment; Determining a causative mechanism
  underlying a disease; Counting sheep
  CorrectAnswer: Counting sheep
  AnswerTests: omnitest(correctVal='Counting sheep')
  Hint: Which of the choices is exact?

- Class: text
  Output: We want to emphasize a couple of important points here. First, a statistic
  (singular) is a number computed from a sample of data. We use statistics to infer
  information about a population. Second, a random variable is an outcome from an
  experiment. Deterministic processes, such as computing means or variances, applied to
  random variables, produce additional random variables which have their own
  distributions. It's important to keep straight which distributions you're talking
  about.

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- Class: text
  Output: Finally, there are two broad flavors of inference. The first is frequency,
  which uses "long run proportion of times an event occurs in independent, identically
  distributed repetitions." The second is Bayesian in which the probability estimate
  for a hypothesis is updated as additional evidence is acquired. Both flavors require
  an understanding of probability so that's what the next lessons will cover.

- Class: text
  Output: Congrats! You've concluded this brief introduction to statistical inference.

- Class: mult_question
  Output: "Would you like to receive credit for completing this course on
    Coursera.org?"
  CorrectAnswer: NULL
  AnswerChoices: Yes;No
  AnswerTests: coursera_on_demand()
  Hint: ""

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