AP Statistics Final Project (a PowerPoint presentation)

Global Warming? A temperature study between 1995-2009

http://academic.udayton.edu/kissock/http/Weather/default.htm

1. Title Page (with graphics)
    Name and ID
    Period #
    Year (2011-2012)

2. CA Standards:

    8.0 Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

    17.0 Students determine confidence intervals for a simple random sample from a normal distribution of data and determine the sample size required for a desired margin of error.

    18.0 Students determine the P-value for a statistic for a simple random sample from a normal distribution.

3. Hypothesis
    Predict average temperature for BOTH cities
    Predict Standard deviation for BOTH cities
    Predict the Difference in the mean temperatures between BOTH cities (small independent samples)
    Predict the Difference in the standard deviation temperatures between BOTH cities

4. Data Sets and Source
    Data 1 (City A), n=30
    Data 2 (City B), n=15
    http://academic.udayton.edu/kissock/http/Weather/default.htm

5. 2 Histograms (5 classes)

6. Statistics (BOTH cities)
    Sample mean, $\bar{x}$
    Sample Standard Deviation, s
    Find the top 5% temperature for EACH city

7. Construct a 95% confidence interval for Means (BOTH cities)

8. Construct a 95% confidence interval for Standard Deviation (city A ONLY)

9. Hypothesis Testing for Means (BOTH cities), use $\alpha = 0.05$
   Hypothesis
   Test Statistics
   Conclusion

10. Hypothesis Testing for Standard Deviation (city A ONLY), use $\alpha = 0.05$
    Hypothesis
    Test Statistics
    Conclusion

11. Hypothesis Testing for Difference in the mean temperatures between BOTH cities (small independent samples), use $\alpha = 0.05$
    Hypothesis
    Test Statistics
    Conclusion

12. Hypothesis Testing for Difference in the standard deviation temperatures between BOTH cities (small independent samples), use $\alpha = 0.05$
    Hypothesis
    Test Statistics
    Conclusion

Number 13 to 18, city B only

13. Construct scatter plot for city A (x axis is time, y axis is temperature)
    Find the correlation coefficient, r for city A and write a conclusion

14. Based on the conclusion from r, perform hypothesis testing for a population correlation coefficient, ρ, use $\alpha = 0.05$

15. Finding the equation of a regression line (line of best fit, best fitted line)
    Predict the temperature for year 2030

16. Construct a 95% prediction interval to the temperature in 2030

17. Find the coefficient of determination, r^2 for city A and write a conclusion

18. Conclusion: Is there enough evidence to show Global warming from the data collected in city A?