Not sure on how many slides or problems so I just chose a few but this will tell you exactly what is needed. Statistics Project One major goal of statistics is to answer questions about a broadly defined group—the population—based only on data from a sample. This is inferential statistics. The goal of this project is for you to answer a question of your own choosing by using the methods we learn in chapter 5, 6, 7, and 8. The two main techniques of inferential statistics are confidence intervals and hypothesis tests. Although in chapters 5, 6, 7, and 8 we cover the assumptions for inference, and outline how to determine a confidence interval, and perform a hypothesis test, we almost never have the opportunity to do everything for one question. Do not panic! All I am asking of you in this project is answer one question of your choice using a hypothesis test, or a confidence interval, and to check the assumptions for inference. Think about it like one long homework question. General Guidelines Failure to adhere to the following guidelines will result in an automatic 50% or lower.  Your project must be typed!  To answer your question you must use a confidence interval or hypothesis test procedure from chapters 5, 6, 7, or 8  Copying someone else’s data analysis is plagiarism, and is just as serious as copying text without citation.  Cite your sources! Give a full citation in APA format for your data source. If you do not know APA format, that is OK. You may use a citation engine such as http://www.citationmachine.net/apa Some Advice for Choosing Your Own Question You will need to determine your own question to answer in your project. So I have some advice. When choosing a question remember that your writing will be its best if you remember the three p’s: pertinent, personal, and passionate. Find a topic that really does interest you, and that you think is important. In addition to questions about means and proportions, be aware:  That you can use a hypothesis test to find associations between two categorical variables, regardless of the number of groups. (section 7.2) For example you might be interested in ethnic groups rather than gender.  That you can compare more than two means with a hypothesis test. (section 8.1) For example you might want to compare means for different ethnicities.  That you can perform a hypothesis test on the slope of a regression line. (section 9.1) Before dedicating yourself to one question ask yourself, “Can I find the right data?” The advice below will help. 1. Decide on a general topic that interests you, and then search for data. 2. Do not decide on a specific question until you have found a dataset that seems interesting. You can pin down your question once you see what variables you have to work with. 3. You may use datasets from your textbook. Appendix B (p. 729) in your textbook describes the contents of the larger datasets. 4. You may use Google to search for interesting datasets. 5. If you cannot think of a question to ask, look through the homework problems in the book for ideas, or use Google to search for “datasets for statistics projects.” 6. You actually need a sample! You do not need a confidence interval or hypothesis test for population data. So you should not be using a population. 7. Summarized data is almost never good enough. This issue comes about when using proportions. Websites from polling agencies such as Gallup, Marist, and Pew Research usually do not give sample sizes with their reported percentages. But you will need sample sizes. 8. Be certain that your question is answerable using a hypothesis test or confidence interval. 9. Finally, do not get stuck on one question! If you cannot find the right data for your question, move on to another possibility. You do not want to waste your time chasing down data that might not exist. Data Analysis You can upload data into StatKey if it is in CSV format. You can save as this format using Excel, or any other spreadsheet program. In many cases, you may want to include a graph. StatKey will make the graphs. Most computers will allow you to take a screen shot. In Windows simultaneously press the Ctrl and Print Screen button on your keyboard. Then paste into an editing program such as Paint to remove any part of the picture that you do not want. The Final Written Report The following sections are required. 1. Introduction. a. An introduction that states clearly your question, your method of analysis, and where you obtained your data. 2. 3. 4. 5. 6. b. Your method of analysis might be “I will carry out a hypothesis test for two means,” for example. c. To say where you obtained your data, you might say “I obtained my data from the U.S. Census Bureau,” or “I obtained my data from Statistics: Unlocking The Power of Data, 2nd ed.” Keep the details, such as the URL or author of the book, for your citations which come at the end of your report. Exploration of the data. a. Include accompanying graphs. I cannot tell you which graphs you need, because this will be different for everyone. Explain your reasoning behind including the graphs. For example, “the scatterplot shows a strong linear relationship between X and Y.” b. You should always check the conditions for inference. These are different for different procedures, and may be found in your class notes. Analysis. a. You can do this entirely in StatKey. I do not need to see calculations, and I do not need to see your data. b. If you are doing a hypothesis test, state the null and alternative hypotheses, the test statistic, and the p-value. c. If you are doing a confidence interval, you can just give me the interval and the confidence level you used. d. If you found any violations to the conditions for inference, explain how these might have affected your results. Conclusion. a. State in plain English the meaning of your results. Try your best to not use statistics jargon. Reflect on your results. a. This is your real conclusion. Try to answer the questions: How are the results meaningful to you? Are they meaningful to me? b. Most importantly, can the results be trusted? Remember there are three types of lies, “lies, damned lies, and statistics.” Works Cited a. Cite the source of your data. This is the same citation as you have in your outline.