Your project write-up should consist of the following four sections. The sections should be as long as is needed to provide thoughtful content and a clear presentation of your data and methods (I expect this to be about 3-6 pages total, but use your judgment).

(Note: Please list on the title page of your write-up the names of everyone in your group and the sections of the write-up that she/he contributed to. You will all get the same grade, but I want to make sure that everyone contributed. If you’re turning in a write-up that was written solely by yourself, then you don’t need to do this.):

**INTRODUCTION (10 points):**
In this section you should motivate the project by answering four questions:

Why should anyone care about the project?
Why did you think it would work?
Do you think the results should be in a particular direction or just different from the null hypothesis? Why? (i.e., motivate your alternative hypothesis)

**METHODS (30 points):**
In this section you should explain how you collected your data. You should provide enough detail such that someone else could replicate your study. You’ll need to answer the following questions:

Is your study an experiment or observational study? What are your dependent and independent variables (if any)? What levels of measurement are your variables (nominal, ordinal, or interval/ratio)?

Who volunteered to participate in your study and how did you find them (e.g., friends, people on library walk)? Where they aware of the purpose of the study or how you expected the results to turn out?

Did you explicitly exclude anyone from participation (e.g., outliers, people below the age of 18)?

In what setting did you collect the data? Was it in a public setting where your volunteers may have been influenced by the presence of others, or was it in a private setting where a volunteer’s responses were only heard by the experimenter?

What instructions did you give your volunteers? Did they all get the same instructions or did different members of your group give slightly different instructions? If so, please specify how the instructions may have differed.

Motivate your methods. Why did you do things they way you did?
RESULTS (30 points):
In this section you should present you data with an appropriate graph and summary statistics. Then you should perform the appropriate hypothesis test. Please attach your raw data so that I can check to make sure you performed the test accurately. Please show your work and provide the following information about your hypothesis test so that I can assign partial credit. Explain your results with some text (e.g., “The effect of caffeine on the number of words memorized was highly significant.”)

1. Null Hypothesis:
2. Alternative Hypothesis:
3. The "tail" of the test (two-tailed, upper-tailed, or lower-tailed):
4. The type of hypothesis test you chose
5. Significance Level:
6. Critical Values of your Test Statistic (e.g., a $z$-score of 1.65 for an upper tailed $z$-test with a significance level of 0.05):
7. The Sample Test Statistic Value (e.g., a sample mean of 65.1 gives you a $z$-score of 2.1):
8. Your Conclusion (Do you reject or fail to reject the null hypothesis?):
9. Cohen’s $d$

DISCUSSION (30 points):
In this section, you should interpret your data and the outcome of the hypothesis test, and discuss the implications of your results. You should answer the following questions:

If your results were significant (i.e., you rejected the null hypothesis), then what knowledge have we gained? Do your results refute what some people think (e.g., disproving cultural stereotypes)? Does your study have practical implications (e.g., you should listen to classical music when studying)? Is it possible that your results simply reflect a confounding variable (e.g., a biased sample or an uncontrolled variable)? Do you think your results generalize beyond the population you sampled from?

If your results weren’t significant, do you think it’s because of problems with your research design (e.g., your sample size was too small or your testing conditions were too variable) or do you think that the null hypothesis is likely to be true? If the latter, then do your results refute what some people think (e.g., disproving cultural stereotypes) or do they have practical implications (e.g., it doesn’t matter if you listen to classical music when studying)? If the former, discuss how you would re-do the study to correct these problems (Was there a trend in the expected direction? If so, perhaps you just need more data or to use a within-subjects design). Do you think your results generalize beyond the population you sampled from?

Note that NO SCIENTIFIC STUDY IS PERFECT. You will not lose points for having problems with your research design/execution, but you will lose points if you do not call attention to those problems.