Name: Lab # and Title

Instructor (or Lab TA) Name: Date:

Your summary for sections 1, 3 & 4 combined should be about 1 page.

1. **Background & Purpose**: The background should be a paragraph that contains the goals of the lab and briefly explains what significance it has to the scientific community.
   State the objective of the lab exercise. Though this is provided in the lab documents, the purpose should be restated in your own words. The purpose should be specific and focus on scientific principles. *Example*: In this lab, the Xilinx Vivado software was introduced and used to design an XOR function using NAND gates.
   In a sentence or two, explain why the purpose of the lab is important to the scientific community. What is the motivation behind performing this lab? *Example*: Vivado software is one of the main software packages used in the design of logic circuits, and this lab shows the students how to use it to design simple logic circuits.

2. **Pre-Lab Response:** Include pre-lab responses in this section. These include, Verilog code, test-benches, simulation outputs, responses to any questions asked, etc. Each item should be labeled.

Summary of Design Implementation

3. **Results and Analysis:** In 1-2 paragraphs, summarize the most important results and trends in the experiment. Figures, tables, or code in the pre-lab section or in an appendix can be referenced to support your analysis.

- State results and content independent of your own influence. These observations should be relevant to the purpose of the lab experiment.
- Describe trends and implications by referencing your results. What can you infer from your data/output? *Example*: Decreasing the gate delay shortens the propagation delays on the output, as shown in Figure 4. An overflow was observed when values were out of range.
- Briefly describe possible errors and discuss potential solutions.

4. **Conclusion & Recommendations:** The final paragraph should emphasize the conclusions drawn from the results and how the results can be used in your scenario.

- State your conclusions based on the results of the lab.
- Provide recommendations for the scenario posed at the beginning of the lab procedure, based on the lab results. *Example*: Based on the results of the procedure, it is recommended to use at least 10 test values to exhaustively verify correct behavior of the design.

5. **Appendices**: Create a new appendix for each category of content ***not included in the pre-lab section***. Title each appendix using the format *Appendix A: Descriptive Title*. For example, the summary report might contain the appendices:

- Appendix A: Test Data/Samples Tested
- Appendix B: Design Program Files (*Verilog modules, testbenches, etc*) – *Not included in the pre-lab.*
- Appendix C: Output Screen Captures (*e.g. terminal output or photo of board showing the switches and LED output*).
  Place any necessary figures and tables in an appendix and label each of them. Keep the summary report brief and to the point.