First Sentence

Tell the larger story of the entire lab in the first sentence. Describe what you see as the most important accomplishment in Lab 1:

- You built a launcher circuit that shot a paper clip. Give the key quantitative result describing how well the circuit worked: how far the paper clip went.

OR

- You used Matlab® as a tool to design and analyze an RLC circuit for launching a paper clip and to analyze a third-order circuit described by state-space methods. Give the key quantitative result describing how well the tool worked: what the percentage was or what the size of some other error measure was.

General Guidelines for Writing a Conclusion

Make the conclusion self-contained. Write the conclusion for the person who has read the report, but also make it decipherable for the person who only read the abstract or introduction. Eliminate external figure, table, or circuit references, (e.g., C_1), and focus on larger results that make sense on their own.

To decide what to put in the conclusion, imagine you are submitting it to an interested reader who will expect useful information. For Lab 1, you might consider the following readers:

- A fellow student who wants to know what results they should expect to get in Lab 1. This student will want to know what is the main purpose of the lab, and they will want to know what quantitative results they should obtain for each major section of the lab. Questions they would want to have answered include: what R, L, and C values are appropriate for the launcher circuit; how well do the Matlab simulations match mathematical solutions and measured waveforms; and what are the causes of mismatches between the theoretical or simulated circuit solutions and the actual circuit waveforms.
- Your boss at work. Your boss will have the same questions as listed for the fellow student, but there is added motivation on your part to satisfy this reader—they control your destiny. The boss will have high expectations and will want useful information that you were paid to produce. It is usually easy to imagine what the boss will want to see. Your boss would want to know, first and foremost, whether the circuit worked and how far the paper clip went. After that, they will want to know the key results from your analysis, and they will want numbers. Flowery qualitative statements have little value.

Be succinct. Use more specific phrases if they convey more information without making sentences unreadable. Here are two examples illustrating the contrast:

- (Poor) The main purpose of Lab 1 was accomplished by building a circuit based on electromagnetic principles.
- (Better) The Lab 1 circuit, consisting of a critically-damped coil and capacitor, successfully launched a paper clip six feet.