This project provided me with an opportunity to put the theoretical knowledge learned in class into practice, and experience the process and challenges of applying programming skills to solve practical engineering problems.

The main challenges included:

1. Interacting with the Arduino hardware required some new functions and syntax, giving me a feeling of "starting from scratch".
2. When designing the temperature prediction algorithm, it was necessary to balance accuracy and efficiency, and determine a reasonable data smoothing method.
3. When implementing the temperature monitoring logic in Task 2, it was important to pay attention to the synchronization of multiple concurrent tasks.

Some strengths of my project were:

1. It was close to a real application scenario, enhancing hands-on ability and providing a more intuitive understanding of emerging technologies such as the Internet of Things.
2. It required the comprehensive application of various programming concepts and techniques learned previously, improving the ability to solve complex problems.
3. Using Git for version control, mastering a professional code management model.

Of course, my project also had some limitations:

1. The testing conditions were limited and could not fully simulate various abnormal situations that may occur in real environments.
2. The hardware resources were limited, making it impossible to implement more complex monitoring and control logic.
3. It did not involve more advanced features such as cloud-based data processing.

Therefore, in the future, we could consider the following improvements:

1. Introduce more sensors to simulate more environmental parameters, increasing the system's adaptability.
2. Deploy algorithms in the cloud to enhance computing power and support large-scale deployment.
3. Optimize hardware design, using more compact and low-power control circuits.
4. Improve the user interface to provide more user-friendly monitoring data visualization.