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Reflection

In this lab, we created a Python program to calculate the distance a ski jumper travels based on their speed, and then assign points based on that distance. The goal was to apply a physics formula for projectile motion and use logic in programming to determine the jumper’s score. By the end, we needed a working program that took speed as input, calculated the distance, and assigned points accordingly.

I started by learning how speed and the angle of the ramp affect the jump distance. After understanding the formula, I wrote the program to accept user input for speed and ramp angle, then calculated the jumper’s distance. Based on that distance, the program used conditionals to assign points. To make sure it worked, I tested it with different speeds to see if the calculations and scores were accurate.

One of the biggest challenges was correctly applying the physics formula. After fixing the formula and refining my code, I was able to get more accurate outputs. Another challenge was getting the point system right, especially for lower speeds. I solved this by adjusting the conditions and testing different cases.

The results were mostly what I expected. Higher speeds led to longer jumps and higher scores. I tested the program with various speeds, from low to high, and everything worked as expected. There were a few unexpected results with very low speeds, but I fixed them by refining the scoring system.

Looking back, the biggest challenges was applying the formula correctly. To overcome this, I focused on one issue at a time, stayed patient, and made sure I understood my code fully before making changes. Overall, this lab taught me how important it is to apply theory correctly in code and how to troubleshoot problems effectively. I also gained a better understanding of the relationship between speed, distance, and scoring in the context of programming.