

Throughout the first exercise, we were asked to create a calculation between two given files (RAM0 and RAM1) and subsequently write them into two other files. This process was solely done when the value of k was less than 256. To do this, we created a couple of statements that would run through the values and check if the values were signed or unsigned.

If k is smaller than 256, our if statements would verify that in the code. When $k < 256$ is true, we would also verify whether W and X are negative. However, when k is greater than 256, a different calculation would be used.

Our variables `val_1` and `val_2` were used to store 16 different registers in our lab. 25 other registers were used for other blocks such as the second flip flop. This amounted to a total of 41 registers in this lab. The total number of logic elements was 108, which we matched with the compilation report.

The slowest compilation process was accessing the Random Access Memory (RAM), whilst the fastest process was reading and writing to the program.