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Part 2 Description

Part 2 of the project involved updating the SISC processor, with adding branches to the instruction set. The four types of branches we had to build were a Branch Not Equal (BNE), Branch Not Equal Relative (BNR), Branch Arithmetic Absolute (BRA), and Branch Arithmetic Relative (BRR). We had to be able to branch based on if a condition was true which we would check using the STAT register. If a branch was unconditional we would have to take it but wouldn’t have to compare the STAT register. To add the branches we were given a file called Br.v that was used to calculate the location of the branch and would then send it to the program counter. The program counter (PC) was held in PC.v, another file we were give, it would control if a branch was taken or the PC was only incremented. When we started this section of the project we added all the new files we were given to the SISC.v file as new module instantiations and then connected the inputs and outputs via wires.