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CEC 470

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Instruction Decoder Questions

1. When the memory is blank, it looks like a memory opcode for storing into the accumulator from an operand address.
2. We use 19 different opcodes so the number of possible opcodes that could be added is 237 other opcodes.
3. In order to compare ACC with a constant, we need another opcode, which in the case of using three bits, could be 111 for the type of branching opcode. In order to push and pull from the stack, we would need more memory opcodes as well as more simulated registers to hold the location of the stack and the value of the top of the stack. In order to take the 2's complement of ACC, we would need another mathematical opcode as well as another register to store the temporary value during the mathematical process.
4. We would need at least one more simulated register to store the decoded instruction and operands.