CU Design Document

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    The control unit takes as input the contents of the C register, the least significant bit of Q (Q_0), and the value of the 1 bit register Q_{-1} and outputs $C - 1$ as well as two control bits: one specifying if an arithmetic operation needs to be performed on the accumulator register ($math$) and one specifying if that operation must be subtraction (sub). Below is the truth table for the CU. Since the output of C is always $C - 1$, it has been left out.

Q_0	Q_{-1}	$math$	sub
0	0	0	0
0	1	1	0
1	0	1	1
1	1	0	0