

ECE 448: Quiz 3

Draw a block diagram of the execution unit (datapath) of the circuit that computes in parallel the minimum and the maximum of sixteen 8-bit numbers stored in a 16 x 8-bit RAM. The circuit should allow initialization of the RAM using externally provided address RAdd and data DataIn. After initialization, the circuit should be able to compute the minimum and maximum element in the memory in about 16 clock cycles, and should allow reading out the result using output DataOut and the select signal min_max, which chooses between reading out the minimum or maximum.

Bonus: Design a control unit for the specified above circuit, and describe it using a block diagram and/or an ASM chart.

Answers

Your name:

Block diagram of the execution unit:

Control unit (bonus):