

EE446 Pre Liminary#2

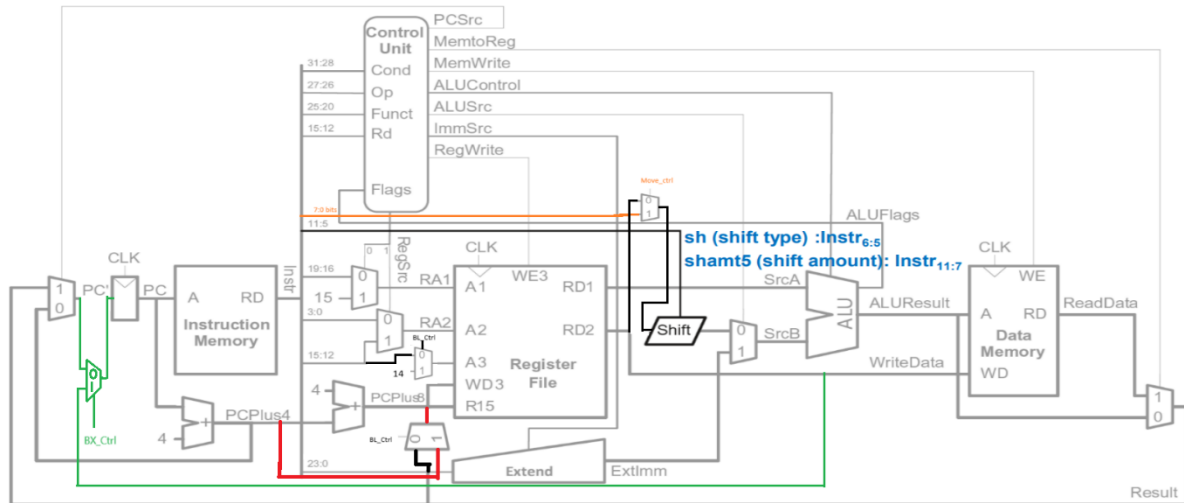


Fig 1 Modified and Updated Data Path

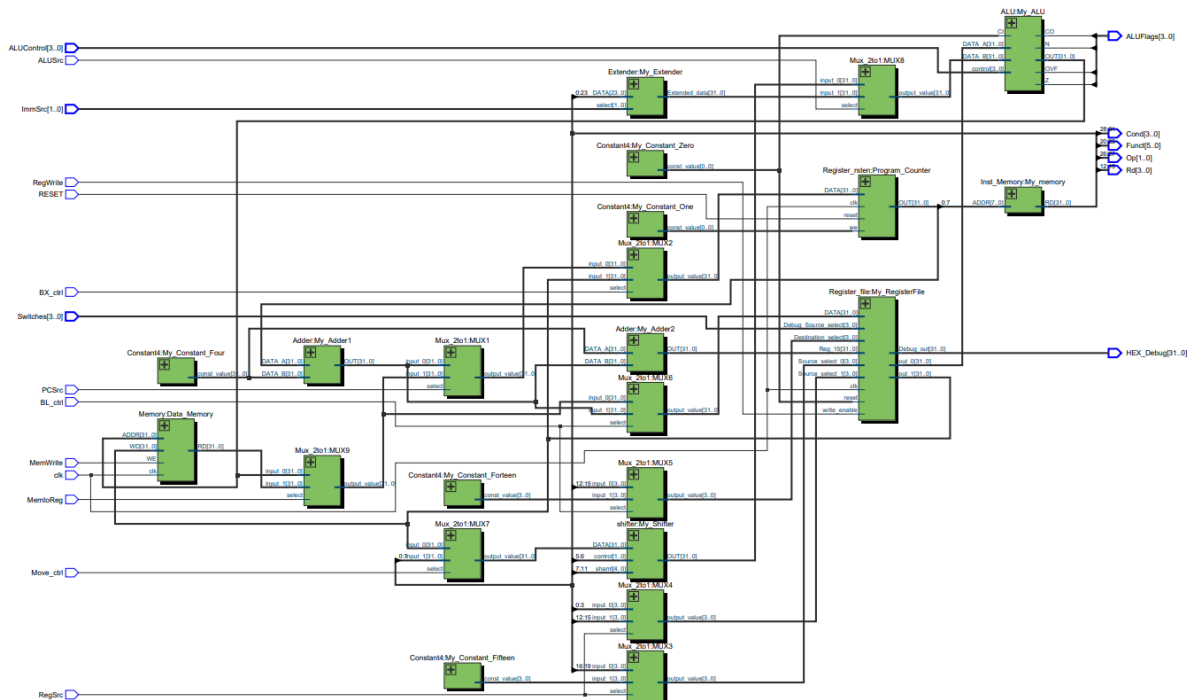


Fig RTL View of the Data Path

Explanation for Operations:

MOV (First One): The move operation can be realized by the original operation by the ALU control signal of 1101 that directly after the shifter just passes SrcB value which then can be loaded in the Rd.

MOV (Second One): The second move operation can be considered with the help of a MUX with Move_Ctrl select and a hardwired control signal which decodes the opcode and based on the opcode directly left shifts the rot value and then loads the corresponding signals as an input to the

EE446 Pre Liminary#2

combinational shifter which further uses the ALU control logic to rotate right and then feeds back the result

BL: This operation can be considered with the help of another MUX with select input BL_ctrl that directly selects the destination as R14 and also selects the PCplus4 value and loads in to the Rd register.

BX: This operation is realized by another mux with select input BX_Ctrl that utilizes the Rm input line and based on the control signal loads the Rm into PC.

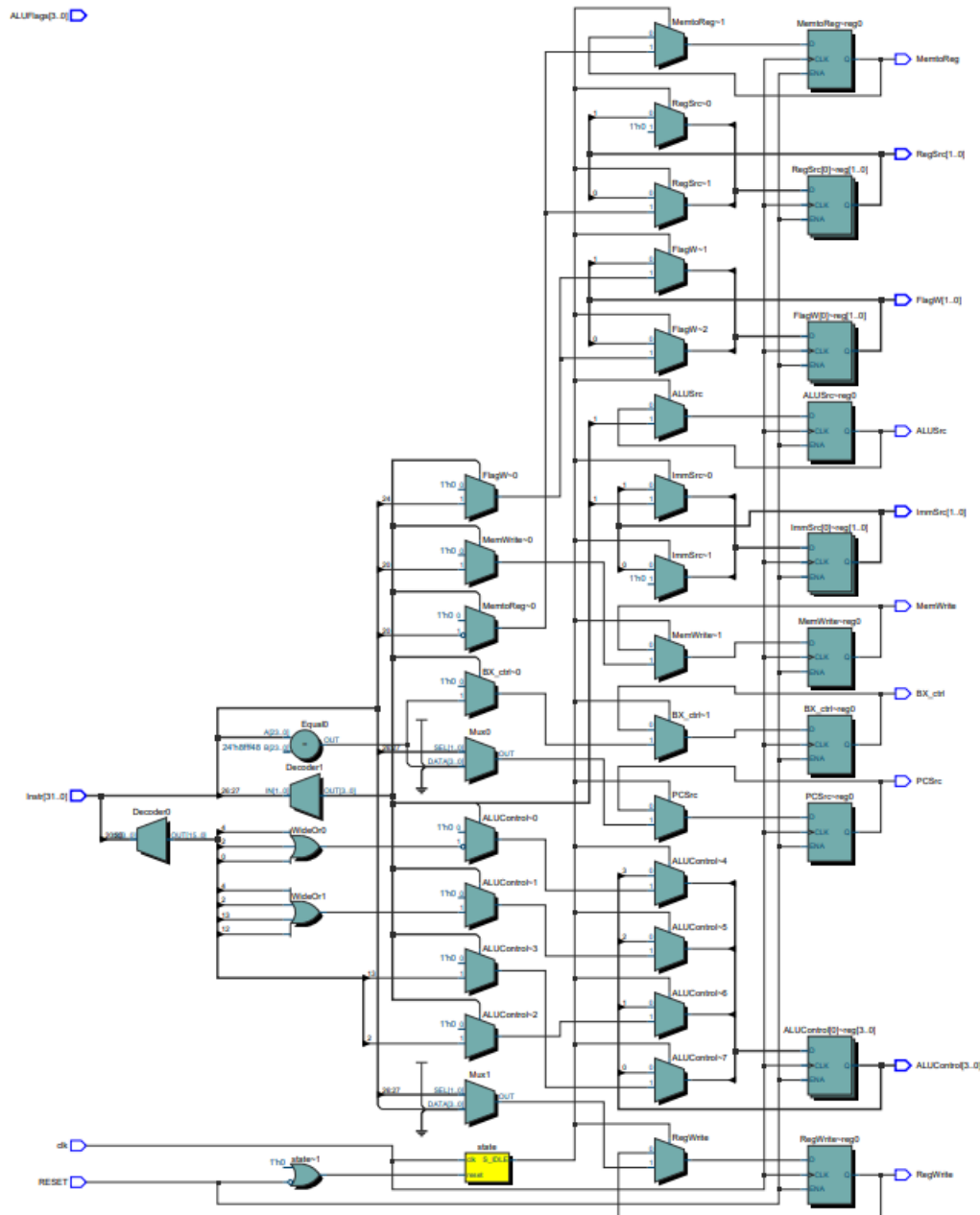


Fig Synthesized RTL View of Controller