**Register File:**

We have implemented this Block by choosing the register you want to write it on using decoder, it takes the address that you want to write it on, then it enables only the register you called, RegWrite control signal must be equal to 1 for the AND gate, if RegWrite was equal to 1 , then the desired register will work and take the input from the control signal (BusW 16-bit ), but if it was equal to 0 , then you can’t write to any register, instead of it can be read any register you want.

We used (Registers Block) to build Register File, Registers Block represent as an input for the MUXES, then the upper MUX choose the registers that it must pass to BusA(out1) according to the address in RA(reg1) control signal, same way in getting BusB(out2) according to the address in RB(reg2) control signal.

