Week 4 Lab Assignment
CPU for a small ARM instruction subset

In this assignment, we had to design a CPU for a small ARM instruction subset. So, we designed it using combinational and sequential behavioral circuits. Our CPU contains two parts:

1. A combinational design to do all the computations of result and output ports
2. A sequential design to change the state (which is defined using two variables: instruction class and decoded type)

In combinational part, we decoded the instruction by defining some signals, and then assigned values to reg_result which would be required to move to register file and determine the register flags at rising edge of clock.

In sequential part, we changed the state (flags and register file including PC) in accordance to the decoded variables.