module lab2demo(x3,x2,x1,x0,y3,y2,y1,y0,a1,a2,b1,b2,c1,c2,d1,d2,e1,e2,f1,f2,g1,g2);

input x3,x2,x1,x0,y3,y2,y1,y0;

output a1,a2,b1,b2,c1,c2,d1,d2,e1,e2,f1,f2,g1,g2;

hexdisp hex1(x3,x2,x1,x0,a1,b1,c1,d1,e1,f1,g1);

name hex2(y3,y2,y1,y0,a2,b2,c2,d2,e2,f2,g2);

endmodule

module hexdisp(x3,x2,x1,x0,a,b,c,d,e,f,g);

input x3,x2,x1,x0;

output a,b,c,d,e,f,g;

assign a = (x3 | ~x2 | ~x0) & (~x3 | x2 | x1) & (x2 | x1 | x0) & (~x3 | ~x2 | ~x1) & (x3 | ~x1) & (~x3 | x0);

assign b = (~x3 & ~x1 & x0) | (x2 & x1 & ~x0) | (x3 & x2 & ~x0) | (x3 & x1 & x0);

assign c = (x3 | x1 | x0) & (x3 | ~x1 | ~x0) & (x3 | ~x2) & (~x3 | x1 | ~x0) & (~x3 | x2);

assign d = (x2 + ~x1 + ~x0) & (x3 | ~x1 | x0) & (~x2 | x1 | ~x0) & (~x3 | ~x2 | x0) & (x2 | x1 | x0);

assign e = (~x3 & x1 & x0) | (~x3 & x2 & ~x1) | (x3 & ~x2 & ~x1 & x0);

assign f = (x3 & x2 & ~x1 & x0) |(~x3 & ~x2 & x1) | (~x3 & x1 & x0);

assign g = (x2 | ~x1) & (~x1 | x0) & (x3 | ~x2 | x1) & (~x3 | ~x0) & (~x3 | x2);

endmodule

module name(x3,x2,x1,x0,a,b,c,d,e,f,g);

input x3,x2,x1,x0;

output a,b,c,d,e,f,g;

assign a = (x2 | ~x0) & (~x2 | ~x1);

assign b = (x2 | x1 | ~x0) & (~x3);

assign c = (~x2 & x1) | (x1 & x0);

assign d = (x3 | x2 | x1 | x0) & (~x2 | ~x0) & (~x1 | ~x0) & (~x2 | ~x1);

assign e = (~x3 & x2 & ~x0);

assign f = (~x3 & x2 & ~x1) | (~x2 & x1 & ~x0);

assign g = (x2 & ~x1 & ~x0) | (x2 & x1 & x0);

endmodule

