class mem\_sequence\_item extends uvm\_sequence\_item;

bit hclk;

bit hresetn;

rand bit enable;

rand var [31:0] dina;

rand var [31:0] dinb;

rand var [31:0] addr;

rand bit wr;

rand var [1:0] slave\_sel;

bit [31:0] dout;

`uvm\_object\_utils\_begin(mem\_sequence\_item)

`uvm\_field\_int(hclk,UVM\_ALL\_ON)

`uvm\_field\_int(hresetn,UVM\_ALL\_ON)

`uvm\_field\_int(enable,UVM\_ALL\_ON)

`uvm\_field\_int(dina,UVM\_ALL\_ON)

`uvm\_field\_int(dinb,UVM\_ALL\_ON)

`uvm\_field\_int(addr,UVM\_ALL\_ON)

`uvm\_field\_int(wr,UVM\_ALL\_ON)

`uvm\_field\_int(slave\_sel,UVM\_ALL\_ON)

`uvm\_field\_int(dout,UVM\_ALL\_ON)

`uvm\_object\_utils\_end

constraint randomize\_enable {

enable inside {0, 1};

}

constraint randomize\_dina {

dina inside {1,3,6,8,9};

}

constraint randomize\_dinb {

dinb inside {1,2,3,4,5};

}

constraint randomize\_addr {

addr inside {4};

}

constraint randomize\_wr {

wr inside {1,0};

}

constraint randomize\_slave\_sel {

slave\_sel inside {1,2,3};

}

function new(string name = "mem\_sequence\_item");

super.new(name);

endfunction

endclass