1. write a sequence which generates output has 1010.... we need to write constaint for this sequence and variable is 15 bit

class pack;

randc bit [14:0] a;

constraint c1{foreach(a[i])

if(a[0] == 0)

a[0] ==1;}

constraint c2{ foreach(a[i])

if(i>0)

a[i] == ~a[i-1];}

endclass

module top;

pack pk =new();

initial begin

repeat(4)begin

void'(pk.randomize());

$display(" array = %b", pk.a);

end

end

endmodule

Output:

# KERNEL: array = 101010101010101  
# KERNEL: array = 101010101010101  
# KERNEL: array = 101010101010101  
# KERNEL: array = 101010101010101

Other method:

class test;

rand bit [15:0] a;

  constraint c{​​ foreach(a[i])

  if(i%2==0)

  a[i] inside {​​0}​​;

    else

      a[i] inside {​​1}​​;               }​​

endclass

module top;

test t;

initial begin

  t=new();

  t.randomize();

    $display("%b",t.a);

  end

endmodule

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1. What are pass by value and pass by reference with own example

module top;

int a =1;

int b= 2;

int c,d;

initial begin

pass\_value(a,b);

$display(" value: a = %0d, b= %0d", a,b);

d= pass\_ref(a,b);

$display(" refer: a = %0d, b= %0d", a,b);

end

function int pass\_value( input int a,b);

int temp;

temp =a;

a= b;

b=temp;

$display(" inside pass\_value a = %0d, b= %0d", a,b);

endfunction

function automatic int pass\_ref(ref int a, b);

int temp1;

temp1= a;

a=b;

b=temp1;

$display(" inside refer: a = %0d, b= %0d", a,b);

endfunction

endmodule