

## 32<sup>nd</sup> Day

### rand\_mode and constraint\_mode

#### when rand is off rand\_mode(0)

```
class msd;  
    rand bit [3:0]a;  
    constraint size {a<10;}  
endclass
```

```
module tb;
```

```
    bit s;
```

```
    initial
```

```
    begin
```

```
        msd m=new();
```

```
    if(m.a.rand_mode) //by default 1 enable randomization
```

```
        begin
```

```
            repeat(10)
```

```
            begin
```

```
                m.a.rand_mode(0);
```

```
                s=m.randomize();
```

```
                if(s)
```

```
                    $display("randomized values of a=%d",m.a);
```

```
                else
```

```
                    $display("randomization failed");
```

```
            end
```

```
        end
```

```
    m.size.constraint_mode(0);
```

```
    m.randomize();
```

```
$display("when constraint is off values of a=%0d",m.a);  
    m.size.constraint_mode(1);  
m.randomize();  
$display("when constraint is on values of a=%0d",m.a);  
end  
  
endmodule
```

## Simulation

Contains Synopsys proprietary information.

Compiler version U-2023.03-SP2\_Full64; Runtime version U-2023.03-SP2\_Full64; Apr 22 11

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

randomized values of a= 0

when constraint is off values of a=0

when constraint is on values of a=0

V C S S i m u l a t i o n R e p o r t

Time: 0 ns

## When rand\_mode(1) and constraint\_mode is enabled or disabled

```
class msd;

    rand bit [3:0]a;

    constraint size {a<10;}

endclass


module tb;


    bit s;


    initial
    begin
        msd m=new();

        if(m.a.rand_mode) //by default 1 enable randomization
        begin
            repeat(10)
            begin
                m.a.rand_mode(1);
                s=m.randomize();
                if(s)
                    $display("randomized values of a=%d",m.a);
                else
                    $display("randomization failed");
            end
        end
    end
end
```

```

m.size.constraint_mode(0);

m.randomize();

$display("when constraint is off values of a=%0d",m.a);

    m.size.constraint_mode(1);

m.randomize();

$display("when constraint is on values of a=%0d",m.a);

end

endmodule

```

## Simulation

Contains Synopsys proprietary information.

Compiler version U-2023.03-SP2\_Full64; Runtime version U-2023.03-SP2\_Full64; Apr 22 11:07 2025

randomized values of a= 3

randomized values of a= 6

randomized values of a= 7

randomized values of a= 5

randomized values of a= 2

randomized values of a= 6

randomized values of a= 0

randomized values of a= 6

randomized values of a= 9

randomized values of a= 7

when constraint is off values of a=14

when constraint is on values of a=0

V C S S i m u l a t i o n R e p o r t

Time: 0 ns

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