33ʳᵈ Day

Types Of Constraints

Constraint Overriding

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


class manoj extends msd;
  constraint undersize {a>10;}
  endclass


module tb;


  initial
   begin
    manoj m=new();
    m.randomize();      //overrides the constraint gives the override value
    $display("randomized values of a=%d",m.a);
   end
endmodule
```

Simulation

```
CPU time: .310 seconds to compile + .277 seconds to elab + .280 seconds to link
Chronologic VCS simulator copyright 1991-2023
Contains Synopsys proprietary information.
Compiler version U-2023.03-SP2_Full64; Runtime version U-2023.03-SP2_Full64;  Apr 23 09:38 2025
randomized values of a=12
         V C S   S i m u l a t i o n   R e p o r t
Time: 0 ns
CPU Time:      0.320 seconds;       Data structure size:   0.0Mb
Wed Apr 23 09:38:23 2025
Done
```

Soft Constraint

When we use soft keyword in constraints it should be ignored eventhough constraints are conflicting,randomization will not fail

```
class msd;
  rand bit [3:0] a;
  constraint c1 { soft a > 10; }
endclass


class manoj extends msd;
  constraint c2 { a < 10; }
endclass


module tb;

  initial
   begin
    manoj m = new();
    m.randomize();
```

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

  end


endmodule
```

Simulation

Inside Constraint

```
class msd;

  randc bit[3:0]a;


  bit [3:0]arr[]= '{1,2,3,5,13,7};


  constraint c1 {a inside {arr};}


endclass


module tb;
```

```
  initial

    begin

      repeat(6)

        begin

        msd m=new();

        m.randomize();

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

          end

      end
endmodule
```

Simulation

Code2

```
class msd;

   randc int a;

  constraint c1 {a inside {2,3,[11:15]};}

  endclass
```

```
module tb;

  initial
    begin
     msd m=new();
     repeat(8)
     begin

     m.randomize();
     $display ("randomized values of a=%0d",m.a);
     end

    end
endmodule
```

Simulation

Compiler version U-2023.03-SP2_Full64; Runtime version U-2023.03-SP2_Full64; Apr 23 10:23 2025
randomized values of a=15
randomized values of a=13
randomized values of a=11
randomized values of a=12
randomized values of a=3
randomized values of a=14
randomized values of a=2
randomized values of a=3
          V C S   S i m u l a t i o n   R e p o r t
Time: 0 ns