Makeup Skill Test Code explanation

Design Sources (7)
  System (System.v) (2)
    clkdivarr : ClockDivArray (ClockDivArray.v) (24)
    grayCounter : GrayCounter (GrayCounter.v)

Module

1. ClockDivArray

Hold array of `ClockDiv`.

2. ClockDiv

Simple clock divider.

3. GrayCounter

Counter that count up on clock's positive edge and translate the internal count number to gray code via the use of XOR.

The counter can set LIMIT parameter to limit the maximum number that it can count before roll back to zero .

4. System

Top file of the system which get the clk and led port of BASYS3 and put it to use.

Led7 register control the blink of led[7] toggled every posedge of the clock;

ClockDivArray with 24 clock divider output as clkdiv16 with period 0.16 second

ClockCount reg count change of clkdiv16.

Every 3 change of ClockCount toggle clkdiv50 which is the effective clock in this system with 0.5 second period.