Clocks, resets, etc...

module paddle

* Input: up/down input from user
* Output: the paddles current Y location
* Just moves the paddle up or down depending on input, but stops it at the top/bottom of screen

module ball

* Input: left/right paddle positions
* Output: ball position, game over condition
* internally stores the balls position, and its current direction
* just increments the balls position in the current direction, unless it hits a L/R edge. In that case it has to reference the paddle locations to see if a point was lost

module drawLogic:

* Input: all paddle locations and ball locations
* Output: a pixel to draw
* when given start flag, will cycle the output pixel through drawing everything on the screen
* has an FSM to go through everything - left paddle, right paddle, ball
* you would instantiate the "paddle" module you have written right now inside here, and send it the start flag when in the "'paddle" stage of fsm – my already coded paddle, should be renamed drawPaddle

top level module:

* create two paddle modules, hook them up the P1 and P2's controls
* create a ball module, hook it up to the paddle position outputs
* create a drawLogic module, hook the paddles and ball position up to it
* create a VGA module, just feed it the drawLogic output

I'd add that the paddle module has its own internal register to keep track of the position. So everyone else can just pull the output from the module, and it'll always be correct.