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Ports: - input a, b, c, d, e,
        - output [24:0] out
 Given five 1-bit signals (a, b, c, d, and e), compute all 25 pairwise one-
 bit comparisons in the 25-bit output vector. The output should be 1 if the
 two bits being compared are equal.
 1| val out = IO(Output(UInt(25.W)))
 3| val inputs = VecInit(a, b, c, d, e)
 4 \mid var idx = 0
 5| for(i <- 0 until 5) {
       for(i \leftarrow i until 5) {
 61
 71
           when(inputs(i) === inputs(j)) { out(24.U - idx.U) := 1.U }
           .otherwise { out(24.U - idx.U) := 0.U }
 81
 91
           idx += 1
10| }}
                                                                         Iter 0
    Syntax Error
Multiple conflicting assignments to the same bits of the output vector out
within a loop violate Chisel's enforcement of single static assignments to
IO ports for ensuring hardware determinism.
    val out = IO(Output(UInt(25.W)))
 1|
 21
 3| val tempOut = Wire(Uint(25.W))
 4| val inputs = VecInit(a, b, c, d, e)
 5 \mid var idx = 0
 6| for(i <- 0 until 5) {
      for(j <- i until 5) {</pre>
 71
 8
          when(inputs(i) === inputs(j)) {tempOut(24.U - idx.U) := 1.U }
           .otherwise {tempOut(24.U - idx.U) := 0.U }
 91
101
           idx += 1
11| }}
12 | <u>out := tempOut</u>
                                                                         Iter 1
    Syntax Error
Individual bits of a UInt are read-only in Chisel; use a Vec of Bool for
bit-level manipulation and convert it to UInt with asUInt after assignments.
 1| val out = IO(Output(UInt(25.W)))
 21
 3| val tempOut = Wire(Vec(25, Bool()))
 4 val inputs = VecInit(a, b, c, d, e)
 5| for (bit <- tempOut) { bit := false.B }</pre>
 6| var idx = 0
 7| for(i <- 0 until 5) {
      for(j <- i until 5) {</pre>
 81
           tempOut(24 - idx) := inputs(i) == inputs(j)
 9١
10|
           idx += 1
11| }}
12| out := tempOut_asUInt
                                                                         Iter 2
   Functional Error
Incorrect indexing and pairing logic in the nested loops lead to mismatched
comparisons and improper mapping in the output vector.
    // .....
   for(i <- 0 until 5) {
      for(j <- 0 until 5) {</pre>
 81
    // .....
                                                               Iter 3. Success
```