Spinal CheatSheet - Tips and Tricks

v0.1

Scala

foreach

```
val myReady = Bool
val vecStream = Vec(Stream(Bool),4)
vecStream.foreach(_.ready := myReady) // Connect to each stream.ready the myReady signal
```

zipped

```
val vecStream1 = Vec(Stream(Bool), 3)
val vecStream2 = Vec(Stream(Bool), 3)
(vecStream1, vecStream2).zipped.foreach(_ >> _) // Connect all Streams of vecStream1 to vecStream2
```

reduce

```
val myBits = B"00110011"
val xorBits = myBits.reduce(_ ^ _) // XOR all bits
```

map

```
val addresses = Vec(UInt(8 bits),4)
val key = UInt(8 bits)
val hits = addresses.map(address => address === key) // hits is a Vector of Bool

val vecStream = Vec(Stream(Bool), 4)
val andValid = srcStreams.map(_.valid).reduce(_ && _) // AND all valid signals of the Stream together
```

Miscellaneous

String to Bits

```
val vecOfBits = Vec("Salut".map(c => B(c.toInt,8 bits)))
```

Remove io prefix

```
val io = new Bundle{
  val pulse = in Bool
  val counter = out UInt(3 bits)
}.setName("")
```

Cross Clock Domain

```
val area_clkB = new
ClockingArea(ClockDomain(io.clkB,io.rstB)){
  val buf0 = RegNext(area_clkA.reg) init(False)
addTag(crossClockDomain)
  val buf1 = RegNext(buf0) init(False)
} // Or by using a BufferCC
val area_clkB = new ClockingArea(clkB){
  val buf1 = BufferCC(area_clkA.reg, False)
}
```