

“Matchlib Coding Style”: example 06: Throughput Accurate

```
2 #include <mc_connections.h>
3
4 #pragma hls_design top
5 class dut : public sc_module {
6 public:
7     sc_in<bool> INIT_S1(clk);
8     sc_in<bool> INIT_S1(rst_bar);
9
10    Connections::In <sc_uint<32>> INIT_S1(in1);
11    Connections::In <sc_uint<32>> INIT_S1(in2);
12    Connections::In <sc_uint<32>> INIT_S1(in3);
13    Connections::Out<sc_uint<32>> INIT_S1(out1);
14    Connections::Out<sc_uint<32>> INIT_S1(out2);
15
16    SC_CTOR(dut)
17    {
18        SC_THREAD(main);
19        sensitive << clk.pos();
20        async_reset_signal_is(rst_bar, false);
21    }
22
23 private:
24
25    void main() {
26        in1.Reset();
27        in2.Reset();
28        in3.Reset();
29        out1.Reset();
30        out2.Reset();
31
32        wait();
33
34        #pragma hls_pipeline_init_interval
35        #pragma pipeline_stall_mode flush
36        while(1) {
37            uint32_t i1 = in1.Pop();
38            uint32_t i2 = in2.Pop();
39            uint32_t i3 = in3.Pop();
40            out1.Push(i1 + i2);
41            out2.Push(i1 + i3);
42        }
43    }
44 };
```

3 concurrent IO
reads

2 concurrent IO
writes

06 Waveforms

Pre-HLS

Question:
What's the throughput?

Post-HLS

