```
////////////////////////////////////////////////////////////////////////
//                                                                    //
//  File name : undersize_packet/testcase.sv                          //
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//  License   : GNU Lesser General Public License                     //
//  Course    : Advanced Verification with SystemVerilog OOP          //
//              Testbench - UCSC Silicon Valley Extension             //
//                                                                    //
////////////////////////////////////////////////////////////////////////

`include "../../testbench/packet.sv"
`include "../../testbench/driver.sv"
`include "../../testbench/monitor.sv"
`include "../../testbench/coverage.sv"
`include "../../testbench/scoreboard.sv"
`include "../../testbench/env.sv"

program testcase (  interface tcif_driver,
                    interface tcif_monitor  );

  class undersize_packet extends packet;
    constraint C_payload_size
      {
        // When payload size is less then 46B, the DUT is supposed
        // to pad the packet to the minimum 64B required for Ethernet.
        payload.size()  inside {[1:45]};
      }
  endclass : undersize_packet

  env               env0;
  int unsigned      num_packets;
  undersize_packet  testcase_packet;

  initial begin
    env0            = new(tcif_driver, tcif_monitor);
    testcase_packet = new();

    // Connect packet handle from driver to testcase_packet
    env0.drv.xge_mac_pkt = testcase_packet;
    num_packets = $urandom_range(40,60);
    tcif_driver.init_tb_signals();
    tcif_driver.make_loopback_connection();
    tcif_driver.wait_ns(2000);
    env0.run(num_packets);
    tcif_driver.wait_ns(100000);
    $finish;
  end

  final begin
    int unsigned    num_pkts;
    int unsigned    num_errors;
    num_pkts    =   packet::get_pktid();
    num_errors  =   env0.scbd.num_of_mismatches;
    $display("\nTESTCASE: ----------------- End Of Simulation -----------------");
    $display("TESTCASE: Number of packets sent       :  %0d", num_pkts);
    $display("TESTCASE: Number of mismatched packets :  %0d", num_errors);
    if ( num_errors==0 )
      $display("TESTCASE: ---------------------- PASSED ----------------------\n");
    else
      $display("TESTCASE: ---------------------- FAILED ----------------------\n");
```

```
61    end
62
63 endprogram
64
```