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entity exemple is
    port (
        clk      : in bit;
        resetn   : in bit
    );
end exemple;

architecture structural of exemple is
    component PIR3000
        port (
            clk      : in bit;
            resetn   : in bit;
            ireq     : out bit;
            ignt     : in bit;
            dreq     : out bit;
            dgnt     : in bit;
            opc      : out bit;
            lock     : out bit;
            read     : inout bit;
            a        : inout bit;
            d        : inout bit;
            ack      : in bit;
            tout     : in bit;
            it_0     : in bit;
            it_1     : in bit;
            it_2     : in bit;
            it_3     : in bit;
            it_4     : in bit;
            it_5     : in bit;
            snoopdo  : in bit
        );
    end component;

    component PIRAM
        port (
            clk      : in bit;
            resetn   : in bit;
            sel      : in bit;
            opc      : in bit;
            read     : in bit;
            a        : in bit;
            d        : inout bit;
            ack      : out bit;
            tout     : in bit
        );
    end component;

    component PITY
        port (
            clk      : in bit;
            resetn   : in bit;
            sel      : in bit;
            opc      : in bit;
            read     : in bit;
            a        : in bit;
            d        : inout bit;
            ack      : out bit;
            tout     : in bit
        );
    end component;

    component PIBCU
        port (
            clk      : in bit;
            req0     : in bit;
            req1     : in bit;

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        gnt0      : out bit;
        gnt1      : out bit;
        sel1      : out bit;
        sel2      : out bit;
        sel3      : out bit;
        sel4      : out bit;
        sel5      : out bit;
        sel6      : out bit;
        sel7      : out bit;
        sel8      : out bit;
        sel9      : out bit;
        snoopdo   : out bit;
        resetn    : in bit;
        opc       : in bit;
        read      : in bit;
        lock      : in bit;
        a         : in bit;
        d         : inout bit;
        ack       : inout bit;
        tout      : out bit;
        it        : out bit
    );
end component;

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signal opc      : bit;
signal read     : bit;
signal lock     : bit;
signal a        : bit;
signal d        : bit;
signal ack      : bit;
signal tout     : bit;

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signal it_0     : bit;
signal it_1     : bit;
signal it_2     : bit;
signal it_3     : bit;
signal it_4     : bit;
signal it_5     : bit;

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signal req0     : bit;
signal req1     : bit;

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signal gnt0     : bit;
signal gnt1     : bit;

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signal sel1     : bit;
signal sel2     : bit;
signal sel3     : bit;
signal sel4     : bit;
signal sel5     : bit;
signal sel6     : bit;
signal sel7     : bit;
signal sel8     : bit;
signal sel9     : bit;
signal snoopdo  : bit;

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begin
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    r3000 : Pir3000
    port map (
        clk      => clk,
        resetn   => resetn,
        ireq     => req0,
        ignt     => gnt0,
        dreq     => req1,
        dgnt     => gnt1,

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    opc      => opc,
    lock     => lock,
    read     => read,
    a        => a,
    d        => d,
    ack      => ack,
    tout     => tout,
    snoopdo  => snoopdo,
    it_0     => it_0,
    it_1     => it_1,
    it_2     => it_2,
    it_3     => it_3,
    it_4     => it_4,
    it_5     => it_5
);

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rst : piram
port map (
    clk      => clk,
    resetn   => resetn,
    sel      => sel1,
    opc      => opc,
    read     => read,
    a        => a,
    d        => d,
    ack      => ack,
    tout     => tout
);

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exc : piram
port map (
    clk      => clk,
    resetn   => resetn,
    sel      => sel2,
    opc      => opc,
    read     => read,
    a        => a,
    d        => d,
    ack      => ack,
    tout     => tout
);

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bcu : pibcu
port map (
    clk      => clk,
    req0     => req0,
    req1     => req1,

    gnt0     => gnt0,
    gnt1     => gnt1,

    sel1     => sel1,
    sel2     => sel2,
    sel3     => sel3,
    sel4     => sel4,
    sel5     => sel5,
    sel6     => sel6,
    sel7     => sel7,
    sel8     => sel8,
    sel9     => sel9,

    resetn   => resetn,
    opc      => opc,
    read     => read,
    lock     => lock,
    a        => a,

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        d      => d,
        ack    => ack,
        tout   => tout,
        snoopdo=> snoopdo,
        it     => it_1
    );

    ins : piram
    port map (
        clk     => clk,
        resetn  => resetn,
        sel     => sel3,
        opc     => opc,
        read    => read,
        a       => a,
        d       => d,
        ack     => ack,
        tout    => tout
    );

    dat : piram
    port map (
        clk     => clk,
        resetn  => resetn,
        sel     => sel4,
        opc     => opc,
        read    => read,
        a       => a,
        d       => d,
        ack     => ack,
        tout    => tout
    );

    tty : pittty
    port map (
        clk     => clk,
        resetn  => resetn,
        sel     => sel5,
        opc     => opc,
        read    => read,
        a       => a,
        d       => d,
        ack     => ack,
        tout    => tout
    );

    ttz : pittty
    port map (
        clk     => clk,
        resetn  => resetn,
        sel     => sel9,
        opc     => opc,
        read    => read,
        a       => a,
        d       => d,
        ack     => ack,
        tout    => tout
    );

end structural;

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