ASIC Verification
ECE745

Lab 2

Fall 2009

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Lab 2

- Generate

```
task gen();
    number_instructions=5;
    GenInstructions=new[number_instructions];
        for (i=0; i<number_instructions; i++) begin
            GenInstructions[i]=new();
        end

        for (i=0; i<number_instructions; i++) begin

            if(!inst2send.randomize())
            begin
                $display("randomization failed");
            end
            GenInstructions[i].src1=inst2send.src1;
            GenInstructions[i].src2=inst2send.src2;
            GenInstructions[i].alu_operation=inst2send.alu_operation;
        end
endtask
```

Lab 2

- Send

```
Task send();
        for (i=0; i<number_instructions; i++)
        begin
             inst2send=GenInstructions[i];
             ALU_Interface.cb.aluin1<=inst2send.src1;
             ALU_Interface.cb.aluin2<=inst2send.src2;
             ALU_Interface.cb.aluoperation<=inst2send.alu_operation;
             Inputs.push_back(inst2send);
             @(ALU_Interface.cb);
        end
        GenInstructions.delete();
endtask
```

Lab 2

- Receive

```
Task recv();
        @(ALU_Interface.cb);
        for (i=0; i<number_instructions; i++)
        begin
            aluout2cmp=ALU_Interface.cb.aluout;
            aluout_q.push_back(aluputcmp);
            @(ALU_Interface.cb);
        end

endtask
```

Lab 2

- Check

```
Task check();
        for (i=0; i<number_instructions; i++)
        begin
            inst_sent=Inputs.pop_front();
            case(inst_sent.alu_operation)
                ADD: aluout_cmp =
                SUB: aluout_cmp =
                NOT: …
                AND: …
                OR:  …
                XOR: …
            endcase
        aluout_q_val=aluout_q.pop_front();
        if(aluput_cmp=aluout_q_val) begin
            ….
            end
        end
endtask
```