ECPS 203 Discussion

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Agenda

1. Review of Assignment 2
2. Assignment 3

Mistakes

- Missing initialization for variables
- freeing non-dynamic variables

Variable Initialization

- local int/char/... variable does not automatically initialize itself
- uninitialized variables may lead to undefined behavior

Freeing non-dynamic variable

- free(ptr)
- if ptr is not a dynamic memory allocated by malloc, calloc and relloc, free(ptr) causes undefined behavior
- This is because, free may free an undefined size of memory

Assignment 3

due: Wednesday 6:00 p.m. next week
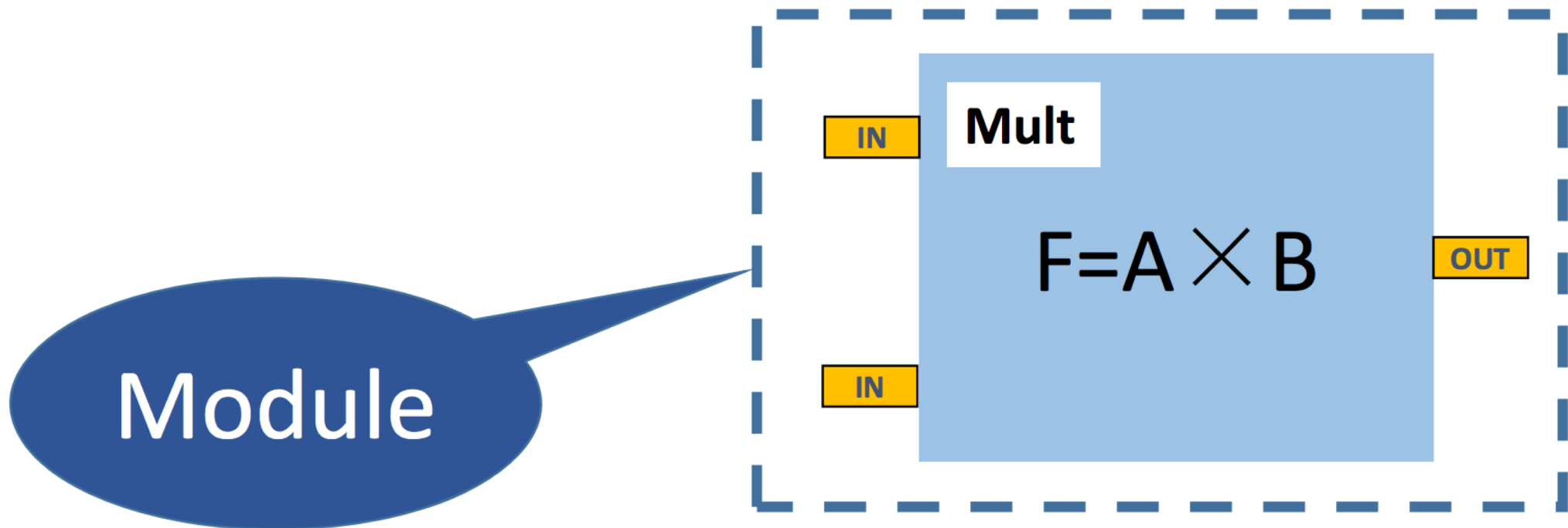
Assignment 3

Get involved in SystemC

- Build a model for a multiplier in SystemC

- Compile code

- Simulate your model

SC_THREAD and SC_METHOD

- SC_THREAD: the registered function executes only once
- SC_METHOD: the registered function executes when sensitivity list is triggered

Multiplier module

- two inputs
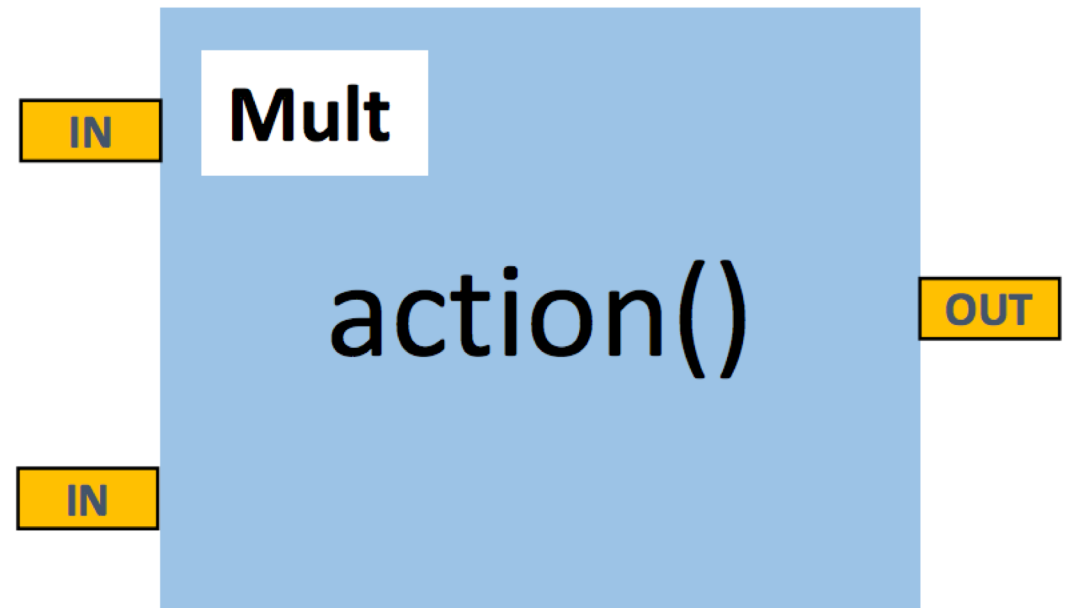- output the multiplication of the inputs

Multiplier module

```
SC_MODULE(Mult)
{
    sc_in<int> a;
    sc_in<int> b;
    sc_out<int> f;

    void action(); //f=a*b

    SC_CTOR(Mult)
    {
        SC_METHOD(action);
        sensitive << a << b;
    }
};
```
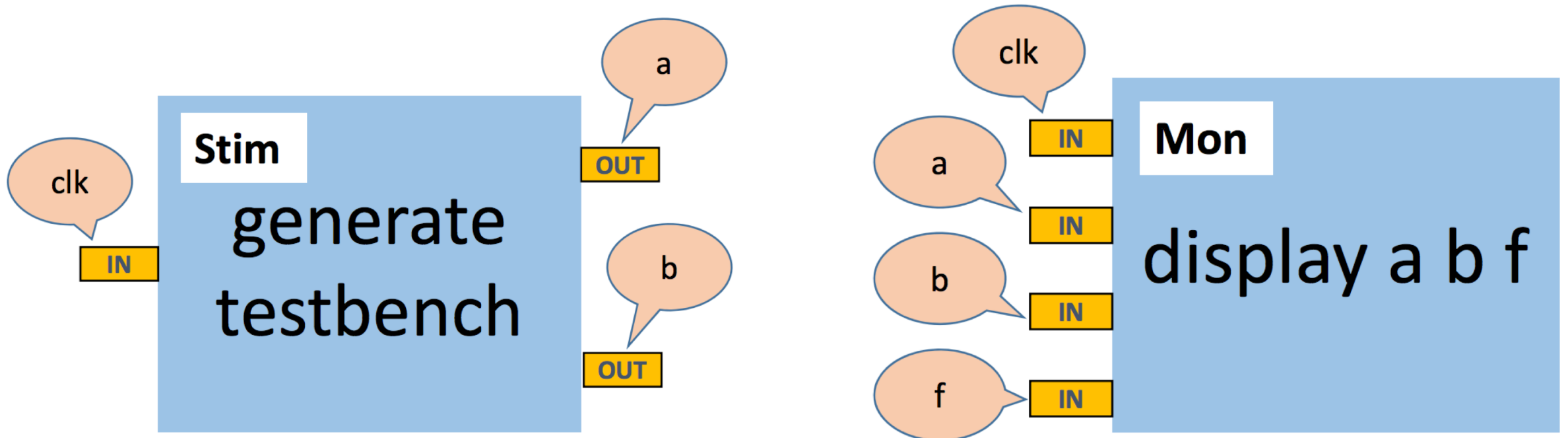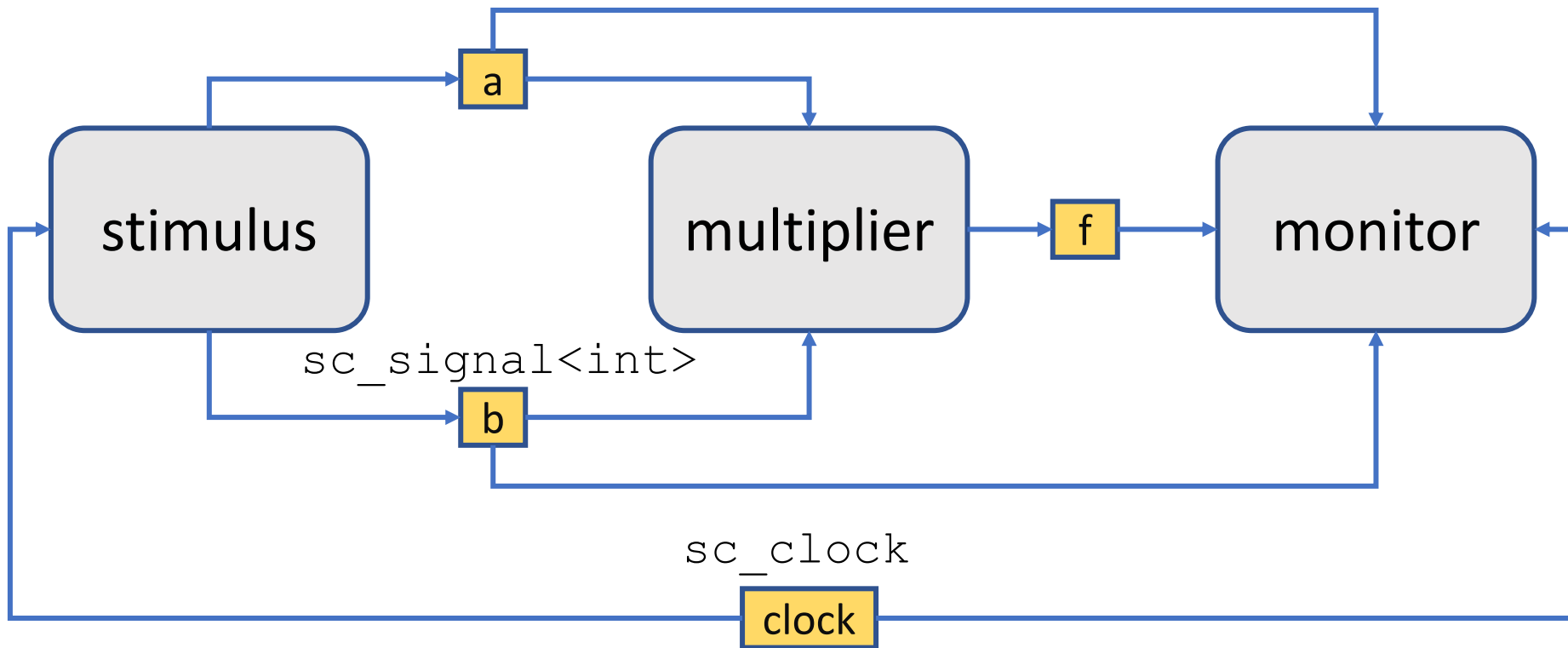
Stimulus and Monitor

- Stimulus module generates the testbench
- Monitor module displays the result
- Stimulus and Monitor take action when a clock signal is received

Top level module

- make the connections

Files

- multiple files
  - ➤ stim.h
  - ➤ stim.cpp
  - ➤ mult.h
  - ➤ mult.cpp
  - ➤ mon.h
  - ➤ mon.cpp
  - ➤ top.h
  - ➤ main.cpp

Compile

- copy the makefile from
  - ❑~ecps203/public/Makefile
- to compile:
  - ❑make
  - ❑make test

Submission

- create a tarball
- gtar cvzf hw3.tar.gz README.txt Makefile *.cpp *.h
- README.txt: describe the troubles you cannot resolve
- and then use the ~ecps203/bin/turnin.sh script