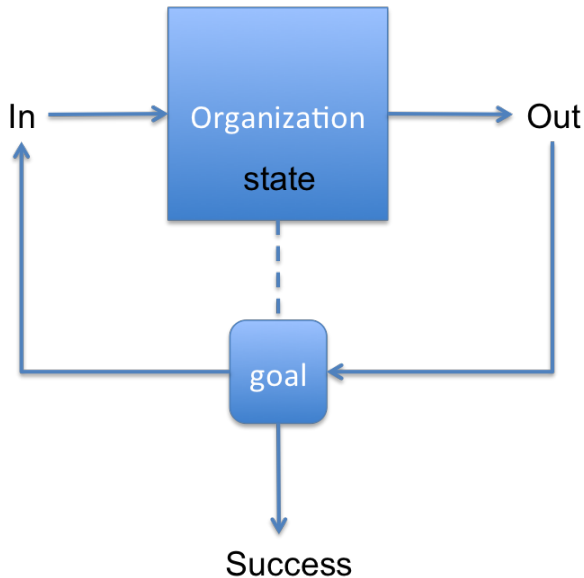


# ESL: Simple Examples

Tony Clark

February 21, 2016

# Simple Goals



# ESL Implementation

```
1 export main; // all ESL programs export main.
2 act main { // main is a behaviour.
3   act organization(goal) { // the simulated organization.
4     state = 0 // init state.
5     In -> { // simple input event.
6       probably(50) state := state + 1 else {}; // stochastically modify state.
7       case goal(state,now) { // check goal.
8         Achieved -> { // goal is achieved.
9           print('Completed at time ' + now); // print something.
10          stopAll(); // halt.
11        };
12        Inputs(ins) -> // goal produces more inputs.
13          for At(message,t) in ins do // each message has a time.
14            self <- message@t // send to the organization.
15        }
16      };
17      Time(_) -> {} // ignore time clicks.
18    };
19    goal(state,time) = // an example goal.
20      if state = 10 // satisfied when state is 10.
21        then Achieved
22        else Inputs([At(In,time+random(100))]) // produces event at future time.
23    -> new organization(goal) <- In; // initialise the main actor.
24    Time(_) -> {} // main actor ignores time.
25 }
```

# Simulation Runs

```
1 Run 1:
2 [../xpl/src/xpl/xpl.xpl 1070 ms,161]
3 [esl/esl.xpl 610 ms,75]
4 [esl/ast.xpl 14 ms,336]
5 [esl/feedback.esl 48 ms,187]
6 Completed at time 1158
7 [ Completed 57433 instructions in 31 ms ]
8
9 Run2:
10 [../xpl/src/xpl/xpl.xpl 1069 ms,161]
11 [esl/esl.xpl 659 ms,75]
12 [esl/ast.xpl 17 ms,336]
13 [esl/feedback.esl 50 ms,187]
14 Completed at time 806
15 [ Completed 40345 instructions in 23 ms ]
16
17 Run3:
18 [../xpl/src/xpl/xpl.xpl 1022 ms,161]
19 [esl/esl.xpl 634 ms,75]
20 [esl/ast.xpl 14 ms,336]
21 [esl/feedback.esl 50 ms,187]
22 Completed at time 647
23 [ Completed 31734 instructions in 21 ms ]
```