

Exercises

Cricket related

- model the pitch and player positions
- animate the scoreboard, scorebook, scorecard
- animate the movements of the bowler, batsmen and fielders
for a ball in the over
- add a commentary to the simulation

DONALD elementary

- run room, perform changes to the display
- re-design dependencies
e.g. introduce revolving, sliding doors, French windows
- add features to the room, such as windows

DONALD (more advanced)

- make 3d room

SDE

- extract components of the VCCS display
 - run under DONALD alone
 - run with SCOUT
- add monitors and constraints

- revisit the blocks simulation
- consider the Towers of Hanoi in ARCA

VCCS

- fix the integrator to work on a different step-size
- adapt speedo window to suit values of minA and maxA
- adapt dynamics to reflect relation between performance and mass
(e.g. as extra passengers / loads get on the car)
- adapt acceleration to reflect wind resistance in the design
- add an item to the visualisation
 - e.g. visualisation of the speed transducer
via a second speedo and actual speed display

LSD -> ADM/EDEN

- elaborate and animate the attendance form example
- animate the catflap
- animate the telephone

GCD with folk-dance under different conventions re perception

During many restless nights in preparation for this course, I have observed the top half of a digital clock display in a half-wakened state. The digits can then only be distinguished by looking at the 3 of the seven display lines above the middle, and making subjective judgements about whether I have been observing the display sufficiently attentively to detect significant events. [By observing the top half of the digits, you can't tell the difference

between 2, 3 and 7, *or* 5 and 6, *or* 8, 9 and 0, but the other digits 1 and 4 are recognisable.] For example, if I look at the clock at 2.34 in the morning, having just woken up, I cannot tell whether it's 2.24/2.34 or 3.24/3.34 or whether it's 7.24/7.34 and I've overslept. If I watch the clock carefully for some minutes, I will see the display change to 2.40, at which point I know that – provided I haven't dozed off for ten minutes along the way – it was ?.34 not ?.24 originally. If I look intermittently, and later coincidentally observe the watch at what looks like 2.24, it's clear that it was originally 2.34, and is now 3.24/3.34 or 7.24/7.34. I may be able to use other information: perhaps I'm confident that 4 hours haven't passed since my first observation, or perhaps it's light by 7.24 anyway, or perhaps I hear the milkman a few minutes later and know he comes at about 4.30. I'd be interested in *a systematic analysis of the relationship between my state of knowledge about the time, the observations I make, and other knowledge I have about correlation between time and external events or the history of my observation*. This is the type of issue that surrounds the semantics of oracles in LSD; in reality, I suspect much of our knowledge is gleaned from observation and prior knowledge in a similar complex manner. One possibility would be to develop a definitive script to express the state of my knowledge of time so that it can be changed incrementally to take account of new observations.