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C340 Concurrency
Tutorial1 - Answer Sheet

Exercise 1:

```
MEASURE(N=9) = MEASURE [5],
MEASURE[i:0..N] =
   ( when (i<2) low -> MEASURE[i]
   | when (i>8) high -> MEASURE[i]
   | when (i>1 && i<9) normal -> MEASURE[i]
   | when (i>0) fall -> MEASURE[i-1]
   | when (i<9) rise -> MEASURE[i+1]).
```

Exercise 2:
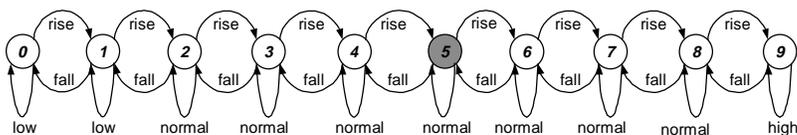
Exercise 3:

```
CLIENT = (call -> reply -> continue -> CLIENT)@{call,reply}.
SERVER = (call -> serve -> reply -> SERVER)@{call,reply}.
||CLIENTS_AND_SERVER =
   (a:CLIENT || b:CLIENT || c:CLIENT|| {a,b,c}::SERVER).
```
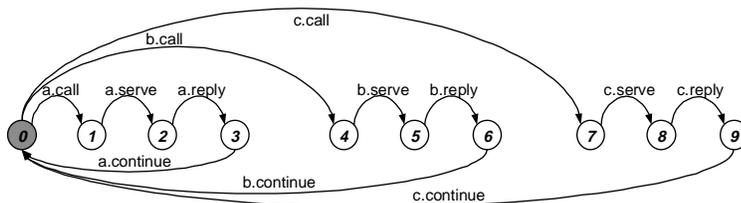

Exercise 4:
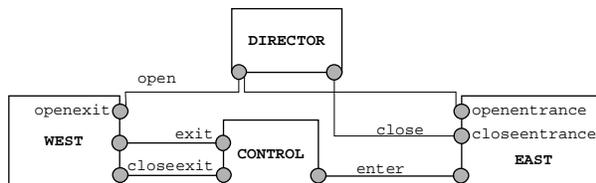

```
EAST = (openentrance-> EASTOPEN),
EASTOPEN = ( enter -> EASTOPEN | closeentrance -> EAST).
WEST = (openexit-> WESTOPEN),
WESTOPEN = ( exit -> WESTOPEN | closeexit -> WEST).
DIRECTOR = (open -> close->DIRECTOR).
CONTROL(N=100) = CONTROL[0],
CONTROL[i:0..N]= ( when (i==0) closeexit -> CONTROL[0]
                 | when (i>0) exit -> CONTROL[i-1]
                 | when (i<N) enter -> CONTROL[i+1]).
||MUSEUM = (EAST || WEST || DIRECTOR || CONTROL)
         /{open/openentrance, open/openexit, close/closeentrance}.
```