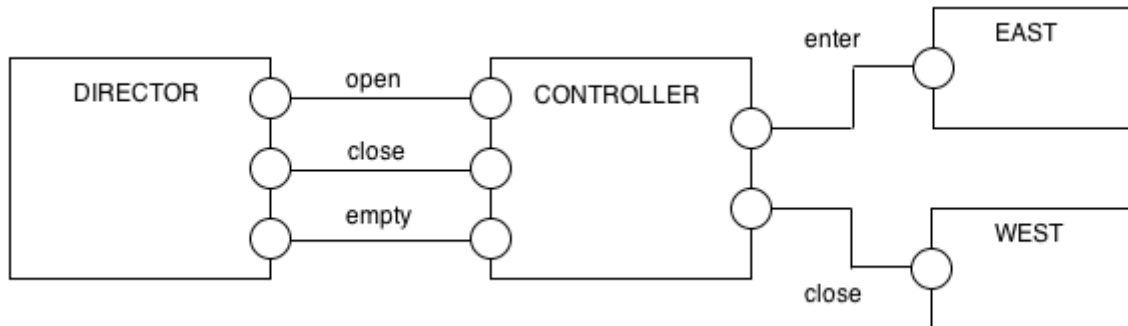


CONCURRENCY ASSESSED COURSEWORK 1

Jack Thorp

1.



2.

```
EAST = (enter -> EAST).
```

```
WEST = (exit -> WEST).
```

```
CONTROL (N=3) = (open -> OPEN[0]),
```

```
OPEN[i:0..N] = ( when(i<N) enter -> OPEN[i+1]
                  | when(i>0) exit -> OPEN[i-1]
                  | close -> CLOSE[i]),
```

```
CLOSE[i:0..N] = (when(i>0) exit -> CLOSE[i-1]
                  |when(i==0) empty -> CONTROL).
```

```
DIRECTOR = (open -> close -> empty -> DIRECTOR).
```

```
||MUSEUM = (DIRECTOR || CONTROL || EAST || WEST).
```

3.

```
CLOSE_ENTER_T = (open -> ENTER_T),
```

```
ENTER_T = (enter -> ENTER_T
           | exit -> ENTER_T
           | close -> CLOSE_T),
```

```
CLOSE_T = (enter -> ERROR
           | exit -> CLOSE_T
           | empty -> CLOSE_ENTER_T).
```

4.

Trace to DEADLOCK:

```
open
enter
close
```