

Verification of Cyber-Physical System

Fall 2017

Exercice Sheet 1

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Exercice 1

Exercice 2

Exercice 3

When looking for non-progress cycles :

Does Spin detect an error when using the *week fairness* constraint ? No

Does Spin detect an error when is not using the *week fairness* constraint ? No

It looks like that Spin does not detect any non-progress cycles with the given code :

```
byte x = 2;

active proctype A(){
  do
    :: x = 3 - x; progress : skip;
  od
}

active proctype B(){
  do
    :: x = 3 - x; progress : skip;
  od
}
```

By the way, if we remove one progress label (either from proc A or proc B), Spin does detect a non-progress cycle when not using *week fairness* constraint:

```
byte x = 2;

active proctype A(){
  do
    :: x = 3 - x;
  od
}
```

```
}  
  
active proctype B(){  
    do  
        :: x = 3 - x; progress : skip;  
    od  
}
```