monitors and one-way bridges -- !!non-exclusion!!

monitor Bridge {
    cond northbound, southbound; // cons are waiting stations
    int northOnBridge, southOnBridge;
    procedure enterSouthbound( ) {
        if (northOnBridge>0) wait(southbound);
        southOnBridge++;
    }
    procedure leaveSouthbound( ) {
        southOnBridge--;
        if (southOnBridge==0) signal_all(northbound);
    }
    // + northbound versions
    // note: the bridge crossing is not in monitor
}
```plaintext
Monitors and One-Way Bridges -- !!impolite!!

monitor Bridge {
    cond northbound, southbound;
    int northOnBridge, southOnBridge;
    procedure enterSouthbound( ) {
        while (northOnBridge>0) wait(southbound);
        southOnBridge++;
    }
    procedure leaveSouthbound( ) {
        southOnBridge--;
        if (southOnBridge==0) signal_all(northbound);
    }
    // + northbound versions
    // note: the bridge crossing is not in monitor
}
```
Monitors and One-Way Bridges -- !!too polite -- deadlock!!

monitor Bridge {
    cond northbound, southbound;

    int northOnBridge, southOnBridge;

    procedure enterSouthbound( ) {
        if ((northOnBridge>0) || !empty(northbound))
            wait(southbound);

        southOnBridge++;
    }

    procedure leaveSouthbound( ) {
        southOnBridge--;

        if (southOnBridge==0) signal_all(northbound);
    }

    // + northbound versions

    // note: the bridge crossing is not in monitor
}
Monitors and One-Way Bridges -- ??just right??

monitor Bridge {
    cond northbound, southbound;
    int northOnBridge, southOnBridge;
    procedure enterSouthbound( ) {
        while ((northOnBridge>0) ||
            ((southOnBridge>0) && !empty(northbound)))
            wait(southbound);
        southOnBridge++;
    }
    procedure leaveSouthbound( ) {
        southOnBridge--;
        if (southOnBridge==0) signal_all(northbound);
    }
    // + northbound versions
    // note: the bridge crossing is not in monitor
}
monitors and one-way bridges -- ??better??

monitor Bridge {
    cond northbound, southbound;
    int northOnBridge, southOnBridge;
    procedure enterSouthbound() {
        if ((northOnBridge>0) || !empty(northbound))
            wait(southbound);
        while (northOnBridge>0) wait(southbound);
        southOnBridge++;
    }
    procedure leaveSouthbound() {
        southOnBridge--;
        if (southOnBridge==0) signal_all(northbound);
    }
    // + northbound versions
    // note: the bridge crossing is not in monitor
}
