

```
var i, y, dat, root, val;  
// contract:  
requires \forall t; \on(root, t) == root;  
requires 0 <= root < NPROCS && len(dat) >= NPROCS;  
requires \no \send(PID, root) \after \exit(PID)  
        \until \exit(root);  
assigns dat, i, y;  
ensures PID == root ==> \forall t;  
    0 <= t < NPROCS ==> dat[t] == \on(val, t);  
// code:  
01: if (PID == root) {  
02:     i = 0;  
03:     dat = new [NPROCS];  
04:     dat[root] = val;  
05:     while (i < NPROCS) {  
06:         if (i != root) {  
07:             recv val from any y;  
08:             dat[y] = val;  
09:         }  
10:         i = i + 1;  
11:     }  
12: } else  
13:     send val to root;
```