

```
var i, y, dat, root, val;
// contract:
requires \forall t; \on(root, t) == root;
requires 0 <= root < NPROCS && len(dat) >= NPROCS;
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;
```