The file code.zip contains 4 files: test.c, sim.c, comm.c and common.h. The code is self-explanatory :). It performs a broadcast on a 2D Torus using a single spanning tree. The code reports the total packets received by every node and the maximum congestion on any link. For the current version of the code, each node receives 1 packet and congestion=1. Modify the code to perform the broadcast using 4 non-contending spanning trees. Each node should receive 4 packets, congestion should remain 1. You can use the header fields to distinguish between the packets of different spanning trees (see hdr1 in code below).

YOU ARE ONLY ALLOWED TO MODIFY sim.c!!! I will be replacing the other files with my own version that does some extra checking (do not bother for the contents of these files - they are only for reference). For instance I might use the arrays stats, estats to store additional statistics. Currently, there is no data carried in the packets. The size field in pkt signifies the amount of data carried. Your new broadcast routine should look something like....

```c
void broadcast( pkt *p, int src )
{
    int s = p->size;
    p->src = src;
    p->dst = -1;
    p->hdr1 = 1;
    p->size = s/4 + ((s%4 > 0)?1 : 0);
    recv(p, src);
    p->hdr1 = 2;
    p->size = s/4 + ((s%4 > 1)?1 : 0);
    recv(p, src);
    p->size = s/4 + ((s%4 > 2)?1 : 0);
    p->hdr1 = 3;
    recv(p, src);
    p->size = s/4;
    p->hdr1 = 4;
    recv(p, src);
}
```