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typedef struct {
    unsigned long id;           // Node identification
    char *name;
    double lat, lon;          // Node position
    unsigned short nsucc;     // Node successors: wighted edges
    unsigned long *successors;
} node;

unsigned long nnodes = 23895681UL;
node *nodes;

if((nodes = (node *) malloc(nnodes*sizeof(node))) == NULL) ExitError("when allocating
memory for the nodes vector", 5);

FILE *fin;

/***** Writing *****/

unsigned long ntotnsucc=0UL;
for(i=0; i < nnodes; i++) ntotnsucc += nodes[i].nsucc;

strcpy(name, argv[1]); strcpy(strrchr(name, '.'), ".bin");
if ((fin = fopen(name, "wb")) == NULL) ExitError("the output binary data file cannot be
opened", 31);

/* Global data --- header */
if( fwrite(&nnodes, sizeof(unsigned long), 1, fin) +
    fwrite(&ntotnsucc, sizeof(unsigned long), 1, fin) != 2 ) ExitError("when
initializing the output binary data file", 32);

/* Writing all nodes */
if( fwrite(nodes, sizeof(node), nnodes, fin) != nnodes ) ExitError("when writing nodes
to the output binary data file", 32);

/* Writing successors in blocks */
for(i=0; i < nnodes; i++) if(nodes[i].nsucc) {
    if( fwrite(nodes[i].successors, sizeof(unsigned long), nodes[i].nsucc, fin) !=
        nodes[i].nsucc ) ExitError("when writing edges to the output binary data file", 32);
}

fclose(fin);

/***** Reading *****/

if ((fin = fopen(argv[1], "r")) == NULL) ExitError("the data file does not exist or
cannot be opened", 11);

/* Global data --- header */
if( fread(&nnodes, sizeof(unsigned long), 1, fin) +
    fread(&ntotnsucc, sizeof(unsigned long), 1, fin) != 2 ) ExitError("when reading the
header of the binary data file", 12);

/* getting memory for all data */
if((nodes = (node *) malloc(nnodes*sizeof(node))) == NULL) ExitError("when allocating
memory for the nodes vector", 13);
if((allsuccessors = (unsigned long *) malloc(ntotnsucc*sizeof(unsigned long))) == NULL)
ExitError("when allocating memory for the edges vector", 15);

/* Reading all data from file */
if( fread(nodes, sizeof(node), nnodes, fin) != nnodes ) ExitError("when reading nodes
from the binary data file", 17);
if( fread(allsuccessors, sizeof(unsigned long), ntotnsucc, fin) != ntotnsucc )
ExitError("when reading successors from the binary data file", 18);
fclose(fin);

/* Setting pointers to successors */
for(i=0; i < nnodes; i++) if(nodes[i].nsucc) { nodes[i].successors = allsuccessors;
allsuccessors += nodes[i].nsucc; }

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