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#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <signal.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <string.h>
#include <semaphore.h>
#include <errno.h>
#include "header.h"

#define PORT1 "55558"

int main(int argc, char **argv){

    /*******variables*****
    struct requete structure;

    //creation de la memoire partagée
    int* shmem = shm_creation(128);
    memcpy(shmem, spect, sizeof(spect));

    //initialisation structure
    init_struct(&structure);
    //initialisation du sémaphore
    sem_init(&semaphore, 1, 1);

    /*******config socket*****
    int sock_fd, srvc_fd;
    struct addrinfo s_init, *servinfo, *p;
    struct sockaddr_storage client_addr;
    socklen_t s_taille;

    memset(&s_init, 0, sizeof(s_init));
    s_init.ai_family = AF_UNSPEC;
    s_init.ai_socktype = SOCK_STREAM;
    s_init.ai_flags = AI_PASSIVE;
    if (getaddrinfo(NULL, PORT1, &s_init, &servinfo) != 0) {
        fprintf(stderr, "Erreur getaddrinfo\n");
        exit(1);
    }
    for(p = servinfo; p != NULL; p = p->ai_next) {
        if ((sock_fd = socket(p->ai_family, p->ai_socktype, p->ai_protocol)) == -1) {
            perror("Serveur: socket");
            continue;
        }
        if (bind(sock_fd, p->ai_addr, p->ai_addrlen) == -1) {
            close(sock_fd);
            perror("Serveur: erreur bind");
            continue;
        }
        break;
    }
    if (p == NULL) {
        fprintf(stderr, "Serveur: echec bind\n");
        exit(2);
    }
    freeaddrinfo(servinfo);
    if (listen(sock_fd, 5) == -1) {
        perror("listen");
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exit(1);
}

// signal pour ignorer les fils
signal(SIGCHLD, SIG_IGN);

//*****

while(1){

    s_taille = sizeof(client_addr);
    srvc_fd = accept(sock_fd, (struct sockaddr *) &client_addr, &s_taille);

    if (srvc_fd == -1) {
        perror("accept");
        continue;
    }

    printf("Nouvelle requete recue.\n");

    if(fork() == 0){

        close(sock_fd);
        //reception de la requete
        recv(srvc_fd, &structure, sizeof(struct requete), 0);

        //si reservation
        if(structure.type == 1){

            if(fork()==0){
                // On attend la disponibilité du sémaphore
                sem_wait(&semaphore);
                if((shmem[structure.spectacles]-structure.nb_place_resa)>=0){
                    shmem[structure.spectacles]=shmem[structure.spectacles]-
structure.nb_place_resa;
                    structure.nb_place_dispo=shmem[structure.spectacles];
                    structure.confirm_resa=1;
                }else{
                    structure.nb_place_dispo=shmem[structure.spectacles];
                    structure.confirm_resa=0;
                }
                // On relache le sémaphore
                sem_post(&semaphore);

                send(srvc_fd, &structure, sizeof(struct requete), 0);

                close(srvc_fd);
                exit(0);
            }
            //si consultation
            if(structure.type == 0){
                if(fork()==0){
                    //renseignement du nombre de places
                    structure.nb_place_dispo=shmem[structure.spectacles];
                    send(srvc_fd, &structure, sizeof(struct requete), 0);

                    close(srvc_fd);
                    exit(0);
                }
            }

            close(srvc_fd);
        }
    }
}
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        exit(0);
    }

}

//sem_destroy(&semaphore);
close(sock_fd);
exit(0);
}
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