```
#include "myinclude.h"

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

pid_t fiu1,fiu2,fiu3;
key_t key;
int semid,shmid;
char * shmp;
char * uzenet1;
char * uzenet2;
int * charnum1;
int * charnum2;

key=ftok(".",44);



struct sembuf down0 = {0, -1, 0};
struct sembuf up0 = {0, 1, 0};
struct sembuf down1 = {1, -1, 0};
struct sembuf up1 = {1, 1, 0};
struct sembuf down2 = {2, -1, 0};
struct sembuf up2 = {2, 1, 0};

//szemafor tomb lefoglalasa 3 szemafor
if((semid=semget(key,3,IPC_CREAT|0660))<0)
        syserr("szemafor");

//szemafor inicializalas szem0=1 szem1=0 szem2=0
if(semctl(semid, 0, SETVAL, 1) == -1 || semctl(semid, 1, SETVAL, 0) ==
-1 || semctl(semid, 2, SETVAL, 0) == -1)
        syserr("szemafor beallitas");


//osztott memoria lefoglalasa 2 db int 2* 63db char
if((shmid=shmget(key,2*sizeof(int)+(63*2*sizeof(char)),0660 |
IPC_CREAT))<0)
        syserr("memoria");

//osztott memoria felcsatolasa
shmp = (char *) shmat(shmid,NULL,0);
if(shmp==(void *) -1)
        syserr("memory at");

charnum1=(int*)shmp;
uzenet1=shmp+sizeof(int);
charnum2=(int*)shmp+sizeof(int)+(63*sizeof(char));
uzenet2=shmp+sizeof(int)+(63*sizeof(char))+sizeof(int);

if((fiu1=fork())<0) syserr("fork1");
if (fiu1==0){

        //masodiknak lep be a kritikus szekcioba
        if(semop(semid,&down1,1)<0) syserr("semdown");

        printf("fiu1: apa pid:%d  sajat pid:%d\n",getppid(),getpid());
```

```
        fgets(uzenet1,63,stdin);
        *charnum1=strlen(uzenet1);

        if(semop(semid,&up2,1)<0) syserr("semdown");

        if (shmdt((void*) shmp)<0) syserr("dt");
        exit(0);
}


if((fiu2=fork())<0) syserr("fork2");
if (fiu2==0){



        if((fiu3=fork())<0) syserr("fork3");
        if (fiu3==0){
                //fiu3 utolsonak lep be a kritikus szekcioba
                if(semop(semid,&down2,1)<0) syserr("semdown");

                printf("fiu3: apa pid:%d  sajat
pid:%d\n",getppid(),getpid());

                if((*charnum1==*charnum2)||
(strcmp(uzenet1,uzenet2)==0)){
                printf("%s",uzenet1);
                printf("%d\n",*charnum1);
                printf("%s",uzenet2);
                printf("%d\n",*charnum2);
                }


                if(semop(semid,&up0,1)<0) syserr("semdown");

                if (shmdt((void*) shmp)<0) syserr("dt");
                exit(0);
        }

        //fiu2 elsonek lep be a kritikus szekcioba
        if(semop(semid,&down0,1)<0)     syserr("semdown");

        printf("fiu2: apa pid:%d  sajat pid:%d\n",getppid(),getpid());

        fgets(uzenet2,63,stdin);
        *charnum2=strlen(uzenet2);

        if(semop(semid,&up1,1)<0) syserr("semdown");

        if (shmdt((void*) shmp)<0) syserr("dt");
        wait(NULL);
        exit(0);
}

printf("apa: apa pid:%d  sajat pid:%d\n",getppid(),getpid());

wait(NULL);
```

```
wait(NULL);
if (shmdt((void*) shmp)<0) syserr("dt");
if(semctl(semid,0,IPC_RMID)<0) syserr("sem del");
if(shmctl(shmid,IPC_RMID,0)<0) syserr("ctl2");


exit(0);
}
```