P1.c

/\*Design three processes in such a way that p1 process will write small letters,p2 process will write capital letters,p3 process will write digits into a file.\*/

#include<stdio.h>

#include<sys/sem.h>

#include<fcntl.h>

main()

{

int id,fd,i;

char a[20]="abcdefghijk";

struct sembuf v;

id=semget(5,3,IPC\_CREAT|0664); fd=open("ttt",O\_WRONLY|O\_CREAT|O\_TRUNC|O\_APPEND,0664);

if(id<0)

{

perror("semget");

return;

}

v.sem\_num=1; //semaphore number

v.sem\_op=0; //wait for zero operation

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

printf("writing data into file...\n");

for(i=0;a[i];i++)

{

write(fd,a+i,1); //critical section of code

sleep(1);

}

printf("p1 process writing data into file is completed...\n");

v.sem\_num=1;

v.sem\_op=1; //sem\_op positive(semval=semval+sem\_op)

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

}

P2.c

#include<stdio.h>

#include<sys/sem.h>

#include<fcntl.h>

main()

{

int id,fd,i;

char a[20]="ABCDEFGHIJKL";

struct sembuf v;

id=semget(5,3,IPC\_CREAT|0664);

fd=open("ttt",O\_WRONLY|O\_CREAT|O\_TRUNC|O\_APPEND,0664);

if(id<0)

{

perror("semget");

return;

}

v.sem\_num=1;

v.sem\_op=-1;

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

printf("P2 process writing data into file...\n");

for(i=0;a[i];i++)

{

write(fd,a+i,1); //p2 process critical section of code

sleep(1);

}

printf("writing data into file is completed...\n");

v.sem\_num=1;

v.sem\_op=2;

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

}

P3.C

#include<stdio.h>

#include<sys/sem.h>

#include<fcntl.h>

main()

{

int id,fd,i;

char a[20]="1234567890";

struct sembuf v;

id=semget(5,3,IPC\_CREAT|0664); fd=open("ttt",O\_WRONLY|O\_CREAT|O\_TRUNC|O\_APPEND,0664);

if(id<0)

{

perror("semget");

return;

}

v.sem\_num=1;

v.sem\_op=-2;

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

printf("p3 process writing data into file...\n");

//while(1);

for(i=0;a[i];i++)

{

write(fd,a+i,1);

sleep(1);

}

printf("writing data into file is completed...\n");

v.sem\_num=1;

v.sem\_op=0;

v.sem\_flg=0;

printf("before...\n");

semop(id,&v,1);

printf("after...\n");

}