OPERATING SYSTEMS

Course Code : SWE3001   Slot : F2+TF2

Lab Assignment - 4

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Peterson algorithm (Algorithm-3) using Semaphores / POSIX Pthreads library.

Code :

```c
#include <pthread.h>

#include <unistd.h>

#include <stdarg.h>

#include <stdio.h>

#include <stdlib.h>

#include <string.h>


void die(const char* fmt, ...)

{

va_list ap;

va_start(ap, fmt);

vfprintf(stderr, fmt, ap);

va_end(ap);

if(fmt[0] && fmt[strlen(fmt) - 1] == ':') {

fputc(' ', stderr);

perror(NULL);

} else {

fputc('\n', stderr);

}

exit(0);

}
```

```c
int turn;
int flag[2];
void* f0(void* arg) {
while(1) {
flag[0] = 1;
turn = 1;
while(flag[1] && turn == 1);
puts("First Thread: Thread1");
flag[0] = 0;
sleep(1);
}
}
void* f1(void* arg) {
while(1) {
flag[1] = 1;
turn = 0;
while(flag[0] && turn == 0);
puts("Second Thread: Thread2");
flag[1] = 0;
sleep(1);
}
}

int main(void)

{
pthread_t t0, t1;
if(pthread_create(&t0, NULL, f0, NULL)) die("unableto create thread");
if(pthread_create(&t1, NULL, f1, NULL)) die("unableto create thread");
while(1);
}
```