**Mutex**

# With mutex

#include <stdio.h>

#include <pthread.h>

#include <unistd.h>

int i;

pthread\_t tid[10];

pthread\_mutex\_t mutex1;

void \* thr\_func(void \* arg) {

if(!(pthread\_mutex\_lock(&mutex1)))

printf("lock 1 acquired\n");

int val =\*(int\*)arg;

printf("thread %d count %d tid:%ld\n", val, i, pthread\_self());

i++;

//printf("thread count now %d\n",i);

//printf("Exit Thread\n");

if(!(pthread\_mutex\_unlock(&mutex1)))

printf("lock 1 released\n\n");

return NULL;

}

int main(void) {

int j;

pthread\_mutex\_init(&mutex1,NULL);

for(j = 0; j < 5; ++j) {

pthread\_create(&tid[j], NULL, &thr\_func, (void\*)&j);

}

for(j = 0; j < 5; j++) {

pthread\_join(tid[j],NULL);

}

pthread\_mutex\_destroy(&mutex1);

return 0;

}

Output:

lock 1 acquired

thread 0 count 0 tid:139954226566912

lock 1 released

lock 1 acquired

thread 0 count 1 tid:139954218174208

lock 1 released

lock 1 acquired

thread 1 count 2 tid:139954209781504

lock 1 released

lock 1 acquired

thread 1 count 3 tid:139954201388800

lock 1 released

lock 1 acquired

thread 1 count 4 tid:139954192996096

lock 1 released

# Without Mutex

#include<stdio.h>

#include<pthread.h>

#include<unistd.h>

int i;

pthread\_t tid[10];

pthread\_mutex\_t mutex1;

void \* thr\_func(void \* arg) {

// if(!(pthread\_mutex\_lock(&mutex1)))

// printf("lock 1 acquired\n");

int val =\*(int\*)arg;

printf("thread %d count %d tid:%ld\n", val, i, pthread\_self());

i++;

//printf("thread count now %d\n",i);

//printf("Exit Thread\n");

// if(!(pthread\_mutex\_unlock(&mutex1)))

// printf("lock 1 released\n\n");

return NULL;

}

int main(void) {

int j;

pthread\_mutex\_init(&mutex1,NULL);

for(j = 0; j < 5; ++j) {

pthread\_create(&tid[j], NULL, &thr\_func, (void\*)&j);

}

for(j = 0; j < 5; j++) {

pthread\_join(tid[j],NULL);

}

pthread\_mutex\_destroy(&mutex1);

return 0;

}

Output:

ratnesh@ratnesh-VirtualBox:~/Desktop/thread$ ./out

thread 0 count 0 tid:140056484169472

thread 0 count 0 tid:140056509347584

thread 0 count 0 tid:140056500954880

thread 0 count 0 tid:140056492562176

thread 0 count 1 tid:140056475776768

ratnesh@ratnesh-VirtualBox:~/Desktop/thread$ ./out

thread 0 count 0 tid:140293811275520

thread 0 count 1 tid:140293802882816

thread 0 count 2 tid:140293794490112

thread 0 count 3 tid:140293786097408

thread 0 count 4 tid:140293777704704

ratnesh@ratnesh-VirtualBox:~/Desktop/thread$ ./out

thread 0 count 0 tid:140545640335104

thread 0 count 1 tid:140545631942400

thread 0 count 0 tid:140545615156992

thread 1 count 3 tid:140545623549696

thread 0 count 0 tid:140545606764288