#include<stdio.h>

#include<stdlib.h>

#include<Windows.h>

#include<process.h>

#define TIMES 100

#define TOTAL\_STAFF 5

HANDLE hMutex;

UINT \_\_stdcall Staff(PVOID lp) {

INT Staff\_Number = \*(INT\*)lp;

for(INT i = 0; i < TIMES; i++){

WaitForSingleObject(hMutex, INFINITE);

printf("Staff %d enter toilet\n", Staff\_Number);

Sleep(rand() % 2);

printf("Staff %d leave toilet\n", Staff\_Number);

ReleaseMutex(hMutex);

}

return 0;

}

int main(int argc, TCHAR\* argv[]) {

HANDLE Staff\_Handles[TOTAL\_STAFF];

INT Staff\_Numbers[TOTAL\_STAFF];

srand(GetTickCount());

hMutex = CreateMutex(NULL, FALSE, NULL);

for (int i = 0; i < TOTAL\_STAFF; i++) {

Staff\_Numbers[i] = i;

Staff\_Handles[i] = (HANDLE)\_beginthreadex(NULL, 0, Staff, &Staff\_Numbers[i], CREATE\_SUSPENDED, NULL);

}

printf("Stuffs are ready\n");

for (int i = 0; i < TOTAL\_STAFF; i++) {

ResumeThread(Staff\_Handles[i]);

}

WaitForMultipleObjects(TOTAL\_STAFF, Staff\_Handles, TRUE, INFINITE);

for (int i = 0; i < TOTAL\_STAFF; i++) {

CloseHandle(Staff\_Handles[i]);

}

CloseHandle(hMutex);

system("pause");

return 0;

}