#include<stdio.h>

#include<stdlib.h>

#include<pthread.h>

#include<stdbool.h>

int student[3][4]={0};

void \*teacher();

void \*student1();

void \*student2();

void \*student3();

pthread\_mutex\_t lck;

int ch1,ch2;

int r1,r2;

int main()

{

printf("\t\t\t---Welcome---\n");

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

student[1][1]=1;

student[2][2]=2;student[3][3]=1;

pthread\_t t\_thread;

pthread\_t s\_thread;

printf("Resources Menu: \n\t\tPress '1' for pen\n\t\tPress '2' for paper \n\t\tPress '3' for question\_paper \n");

while(1)

{

if(student[1][4]==1 && student[2][4]==1 && student[3][4]==1){break;}

pthread\_create(&t\_thread, NULL, teacher, NULL);

pthread\_join(t\_thread,NULL);

if((ch1==1 && ch2==2 || ch2==1 && ch1==2 ) && student[3][4]==0)

{

pthread\_create(&s\_thread, NULL, student3, NULL);

pthread\_join(s\_thread,NULL);

}

else if((ch1==1 && ch2==3 || ch2==1 && ch1==3 ) && student[2][4]==0)

{

pthread\_create(&s\_thread, NULL, student2, NULL);

pthread\_join(s\_thread,NULL);

}

else if((ch1==2 && ch2==3 || ch2==2 && ch1==3 ) && student[1][4]==0)

{

pthread\_create(&s\_thread, NULL, student1, NULL);

pthread\_join(s\_thread,NULL);

}

else

{

printf("\n\t Error .. Try again with different choices.\n");

}

}

printf("\n\t----Done---\n");

}

void \*teacher()

{

pthread\_mutex\_lock(&lck);

printf("\nFirst Resource on shared table:-\t");

scanf("%d",&ch1);

printf("Second Resource on shared table:-\t");

scanf("%d",&ch2);

pthread\_mutex\_unlock(&lck);

}

void \*student2()

{

pthread\_mutex\_lock(&lck);

printf("\nChoices Made = 'pen', 'question\_paper'\n");

student[2][4]=1;

printf("\n\tStudent 2 has Completed the assignment. \n");

pthread\_mutex\_unlock(&lck);

}

void \*student3()

{

pthread\_mutex\_lock(&lck);

printf("\nChoices Made = 'pen', 'paper'\n");

student[3][4]=1;

printf("\n\tStudent 3 has Completed the assignment.\n");

pthread\_mutex\_unlock(&lck);

}

void \*student1()

{

pthread\_mutex\_lock(&lck);

printf("\nChoices Made = 'paper', 'question\_paper'\n");

student[1][4]=1;

printf("\n\tStudent 1 has Completed the assignment.\n");

pthread\_mutex\_unlock(&lck);

}