write a c-program to simulate the concept of Dinning philosophers problem. #Include & pthread b > minh and white # include & semaphore. h> # include Letdio.h> # define N 5 # define Thinking 2 # define Hungry # define ex taking o He define left (phinum+4) 1.N H define Right 1 phnum +1) 1. N int State [NS; int phillNo = (0,1,2,3,42); semi-timutem; 1110 3d and 1921111121 2011 111 sem-t SENJ; a som sommon ald aling void test (int phoum) constitutions & sound if 1 state [phnum) = = Hungry \$ A. State [left] = Eating & state [Right] != Eating) \$ state [phnum) = fating; (Sleep 12); Print + 1" Philosopher Y. d takes fork y. d and Y. n. \n"}, phoum +1, left +1, phoum +1); Print + 1" Philosopher / dis cating \n", phoumt); sem - post (& s(phnum)); void take - fork lint phnum) sem_wait (& muten); State [phoum] = Hungry; Print f (" Philosopher ! d is Hungry ("), phoum+1); test (phnum); Sem-post (f. mytex);

Dinning sem-wait (& s[phum); sleep(1); 21 void put - tork (int phnum) sem-wait (& muten); state [phnum] = Tunking; at 1 magnetista Printf 1"Philosopher y. a putting fork xdand xd down \n" phu phnum +1, left +1, phnum+1); Print + 1" Philosopher V. of is thinking in", phount); test (left); test (Right); sem_post (& mutem); void * philosopher (void * num) white (1) & p ban & stat 29 / (1) 91 how int * 1= num; parto 21 A resignali sleep(1); and again painting & realgon take - fork (+1); maintaint ai sleeplos; hanc put - jork (* i); . nothos of & int mainly aurob halthy & rulges 5 inti; sono 1 Siot 13401 & radges Pthread_t thread -id [N); a rade as office sem-init (& muten, 0,1); mg 3 references for 1:=0; 12N; 1++) status 12 12/19031 sem - init (as [1), 0,0); 21 1 12/22 2011 for (1=0; 12 N ; 1++) () () Pthread - create 1 & thread - id [i], NULL, phi 1000 pher 2 phil(1); 4101 and

CIASSMALE print [l''Philosopher '/d is thinking in "ity). for (i=0; i=N;9++) pthread - join I thread -id [i]. Now). philosopher 1 is thinking output philosopher 2 is thinking philosopher 3 is thinking de - de philosopher of is thinking philosopher 5 is thinking. philosopher 2 is hungry. philosopher 5 is hungry

philosopher 5 is hungry

philosopher 3 nice hungry philosophu 9 is hungry philosopher Hakes fork 3 and 43 (113/12) philosopher 4 is Gating. philosopher 4 putting down fork 3 and 4 down.
Philosopher A is thinking. philosopher 3 taker fork 2 and 3 1900 philosopher 3 is eating. 11 + 1 dial-Philosopher 5 takes fork 4 and 5 Philosopher 5 is eating. Philosopher 3 putting down fork 2 and 3. philosopher z is thinking. philosopher 2 takes fork land 2. Philosopher 2 is eating. books of books Philosopher 5 putting fork 9 and 5 down. philosopher 5 is thinking. philosopher 9 is hungry. philosopher a takes fork 3 and a. philosopher a is eating. philosopher 2 putting down fork I and 2

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Philosopher 1 is thinking
Philosopher 2 is thinking
Philosopher 3 is thinking
Philosopher 4 is thinking
Philosopher 5 is thinking
Philosopher 2 is Hungry
Philosopher 1 is Hungry
Philosopher 5 is Hungry
Philosopher 5 is Hungry
Philosopher 3 is Hungry
Philosopher 4 is Hungry
Philosopher 4 takes fork 3 and 4
Philosopher 4 is Eating
Philosopher 4 putting fork 3 and 4 down
Philosopher 4 is thinking
Philosopher 3 takes fork 2 and 3
Philosopher 3 is Eating
Philosopher 5 takes fork 4 and 5
Philosopher 5 is Eating
Philosopher 3 putting fork 2 and 3 down
Philosopher 3 putting fork 2 and 3 down
Philosopher 3 is thinking
Philosopher 2 takes fork 1 and 2
Philosopher 2 is Eating
Philosopher 5 putting fork 4 and 5 down
Philosopher 5 is thinking
Philosopher 4 is Hungry
Philosopher 4 takes fork 3 and 4
Philosopher 4 is Eating
Philosopher 2 putting fork 1 and 2 down
Philosopher 2 is thinking
Philosopher 1 takes fork 5 and 1
Philosopher 1 is Eating
Philosopher 5 is Hungry
Philosopher 3 is Hungry
Philosopher 4 putting fork 3 and 4 down
Philosopher 4 is thinking
Philosopher 3 takes fork 2 and 3
Philosopher 3 is Eating
Philosopher 2 is Hungry
Philosopher 1 putting fork 5 and 1 down
Philosopher 1 is thinking
Philosopher 5 takes fork 4 and 5
Philosopher 5 is Eating
Philosopher 4 is Hungry
Philosopher 3 putting fork 2 and 3 down
Philosopher 3 is thinking
Philosopher 2 takes fork 1 and 2
Philosopher 2 is Eating
Philosopher 1 is Hungry
Philosopher 5 putting fork 4 and 5 down
Philosopher 5 is thinking
Philosopher 4 takes fork 3 and 4
Philosopher 4 is Eating
Philosopher 2 putting fork 1 and 2 down
Philosopher 2 is thinking
Philosopher 1 takes fork 5 and 1
Philosopher 1 is Eating
Philosopher 3 is Hungry
Philosopher 5 is Hungry
Philosopher 4 putting fork 3 and 4 down
Philosopher 4 is thinking
Philosopher 3 takes fork 2 and 3
Philosopher 3 is Eating
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C:\Users\STUDENT\Desktop\dinning.exe