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Extract the working directory by using tar xvfz ~cis620s/pub/xt.tar.gz to current working directory of proj2 in cis620s

Task-1

Handler:

Generally when we run a program xmain.c calls thread yield method . it stops present thread running and start other thread.

Actually, in xmain.c we have to call 100 times but after increment one it call xthread_yeild(xidbar) it stop foo execution and jumps to bar function. It call one by one but cannot run parallely.

SIGALRM we have to use signal.h header file

Unialaram we have to use unistd.h header file

(Sigalrm,handler) when we call sigalrm it call handler function

In ualaram it will call every 0.01sec and handler executed

Ctxsw it call one thread to another thread

When we call sigalarm the handler is executing one thread information jump to another thread by using resched();

It stops thread execution and ready another thread testcase-1 that's why output executing foo and bar.

Testcase-1:

Step-1 download the test case by using command cp ~cis620s/pub/xmain1.c .

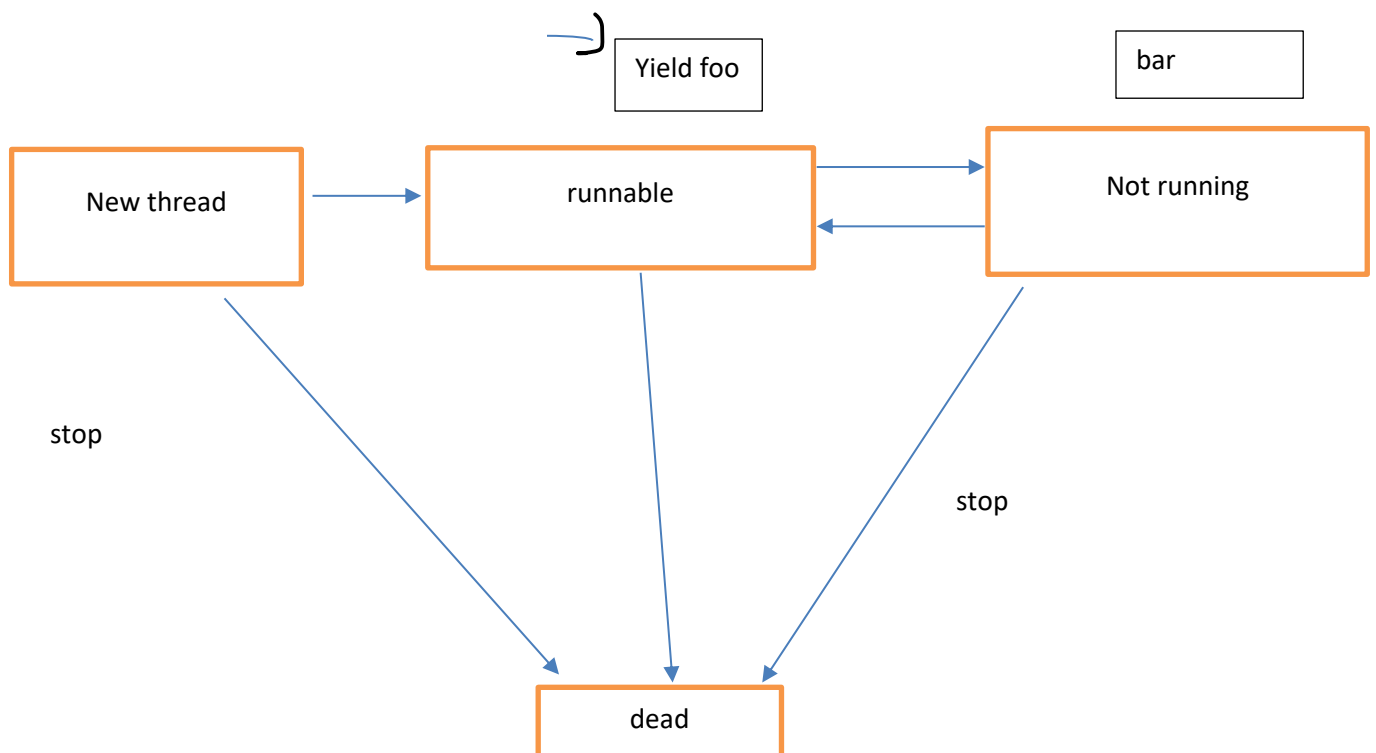Step-2 copy the command cp xmain1.c xmain.c

Built it by making the command make
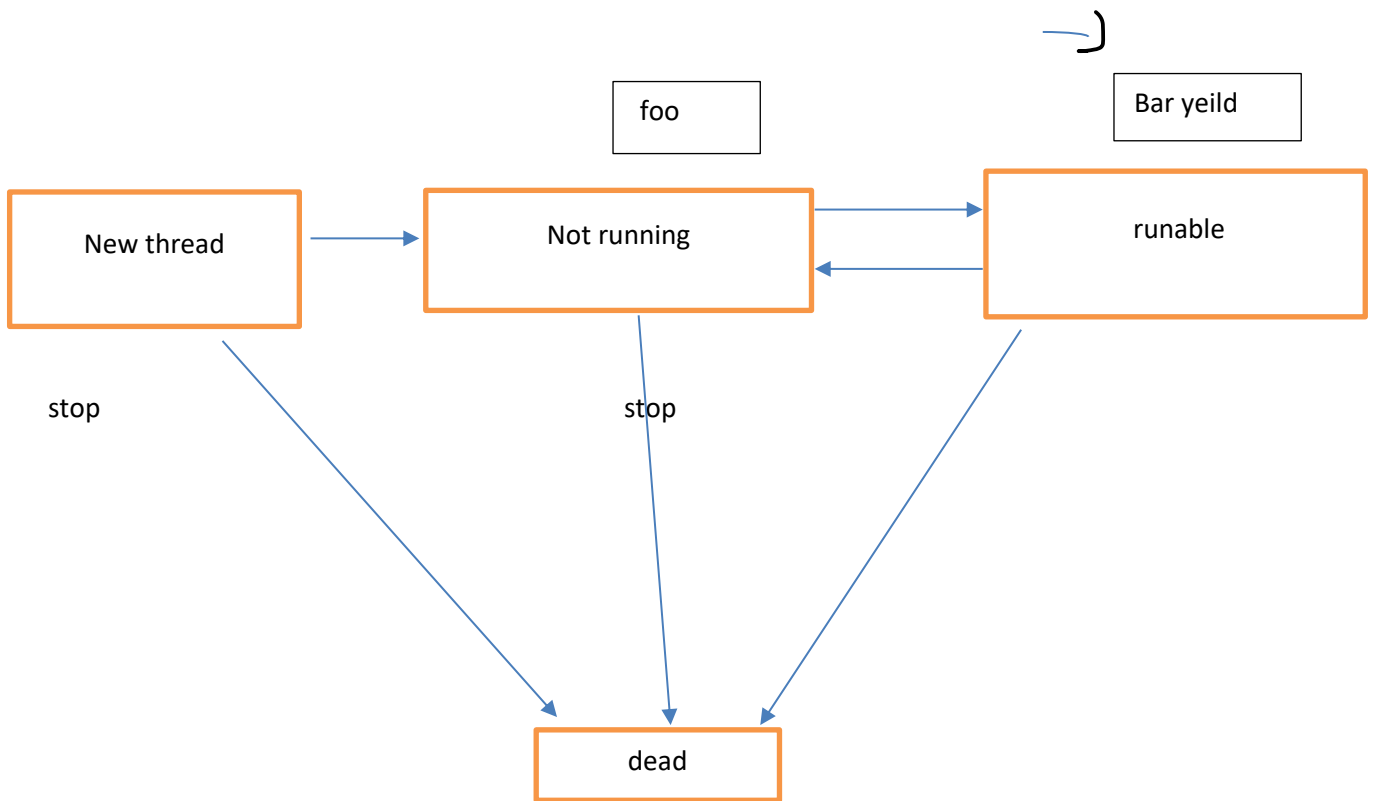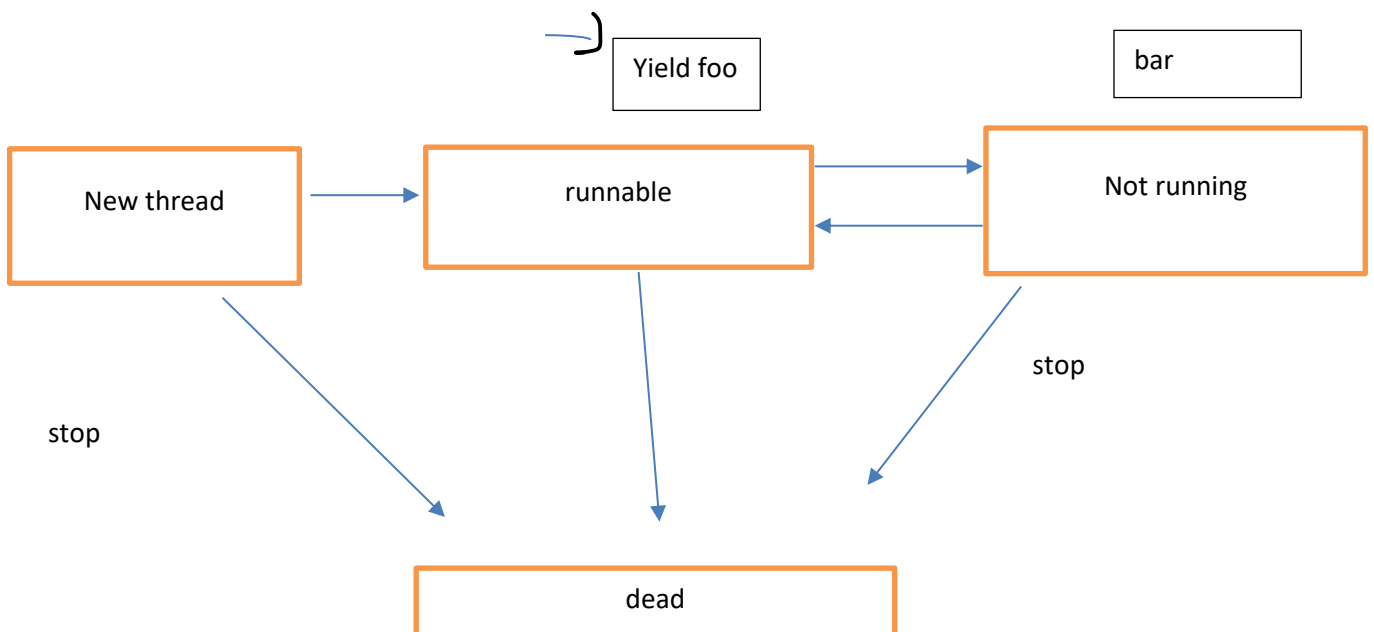
And observing the output for the following test case.


```
cis.csuohio.edu - PuTTY                                                           —  □  ×
gcc -m32 -g -I. -I/usr/lib/gcc/x86_64-linux-gnu/7/include -Wno-implicit   -c -o
xmain.o xmain.c
gcc -m32 -g -I. -I/usr/lib/gcc/x86_64-linux-gnu/7/include -Wno-implicit xmain.o
./libxt.a
spirit:~/cis620s/proj2/xt% ./a.out
Finish main
XT: Old threads never die; they just fade away. (id:0)
This is foo 7, 0
This is foo 7, 1
This is foo 7, 2
This is bar 20, 0
This is bar 20, 1
This is bar 20, 2
This is bar 20, 3
This is foo 7, 3
This is foo 7, 4
This is foo 7, 5
This is bar 20, 4
This is bar 20, 5
This is bar 20, 6
This is foo 7, 6
This is foo 7, 7
This is foo 7, 8
This is bar 20, 7
This is bar 20, 8
This is bar 20, 9
This is bar 20, 10
This is foo 7, 9
This is foo 7, 10
This is foo 7, 11
This is foo 7, 12
This is bar 20, 11
This is bar 20, 12
This is bar 20, 13
This is foo 7, 13
This is foo 7, 14
This is foo 7, 15
This is bar 20, 14
This is bar 20, 15
This is bar 20, 16
This is foo 7, 16
This is foo 7, 17
This is foo 7, 18
This is bar 20, 17
This is bar 20, 18
This is bar 20, 19
XT: Old threads never die; they just fade away. (id:2)
This is foo 7, 19
XT: Old threads never die; they just fade away. (id:1)
XT: no threads to run!
```


First it executes the 0.01 second in foo later it stop and running the new thread bar

foo

New thread → Not running → runable

Bar yeild

stop

stop

dead

Testcase-2:

Step-1 download the test case by using command cp ~cis620s/pub/xmain2.c .

Step-2 copy the command cp xmain2.c xmain.c

Built it by making the command make

And observing the output for the following test case.

Yield foo

bar

New thread → runnable → Not running

stop

stop

stop

dead

Task-2:

Struct message box it is a double linked list.it save first thread address and last thread address in between we written a message

typedef struct linklist n; //here we are defining linklist node

in every thread it has id and its pointer and store next thread information.

Here we define the skeleton of function declaration

Int xthread_init_mbox(xthread_mbox_t *mptr)

If it is empty it shows -1

Int xthread_send(xthread_mbox_t *mptr,int msg)//sending a message to thread

Alarm initialised with (0,0)

we have to implement the logic here I did not point how to implement
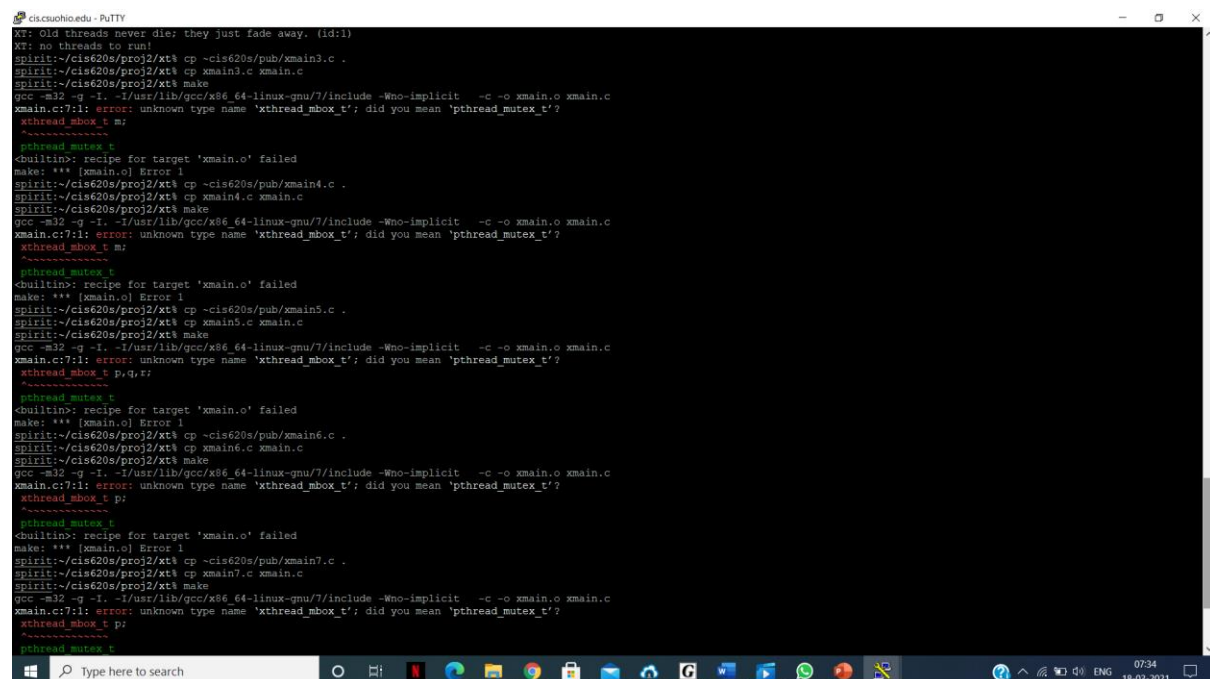
And ualarm(usec,0)

Intxthread_broadcast(xthread_mbox_t *mptr,int msg)

Int xthread_receive(xthread_mbox_t *mptr,int *msgptr)//receiving message from a thread

Here we make a block thread

Debugging experience:

error: unknown type name 'xthread_mbox_t'; did you mean 'pthread_mutex_t'?

 xthread_mbox_t p;

 ^~~~~~~~~~~~~~

 pthread_mutex_t

Here this is the error coming from the test case-3 to test case-8 saying the target is not found xmain.o . I implement little logic for one message box and remaining I did not implement for that we need to make change make file or not? I have doubt on it these the overall experience of the debugging.

Status: NOT working

Task-1 two testcases are Working