File   Edit   Selection   View   Go   Run   Terminal   Help

EXPLORER

pthreads_skeleton.cpp M   pthreads_p2.cpp   pthread_test_3.cpp M ✕

ITSC_3146_A_4_2 > pthread_test_3.cpp > main()

∨ ITSC-3146-PROGRAMS-EDWARD-...
  > .vscode
  ∨ assign-2-1-2
  > CPPBasics1
  > ITSC_3146_A_3_2
  > ITSC_3146_A_3_2_2
  ∨ ITSC_3146_A_4_2
    ≡ pthread_test_3   U
    pthread_test_3.cpp   M
    pthreads_p2.cpp
    pthreads_skeleton.cpp   M
    ① README.md
  > ITSC_3146_A_9_1
  > ITSC_3146_Processes
    ≡ main
    main.cpp

```cpp
 6    void *PrintHello(void *arg) {
 7        int actual_arg = *((int*) arg);
 8        cout << "Hello World from thread with arg: " << actual_arg << "!\n";
 9        return 0;
10    }
11
12    int main() {
13        pthread_t id;
14        int rc;
15        cout << "In main: creating thread \n";
16
17        int t;
18        cout << "Enter an integer: ";
19        cin >> t; // Read user input
20
21        rc = pthread_create(&id, NULL, PrintHello, (void*) &t);
22
23        if (rc) {
24            cout << "ERROR; return code from pthread_create() is " << rc <<
25            return -1;
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   bash - ITSC_3146_A_4_2

```
hread_test_3.cpp -pthread
○ vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthread_test_3
  In main: creating thread
  Hello World from thread with arg: 23!
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ g++ pthread_test_3.cpp -
  o pthread_test_3 -lpthread
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthread_test_3
  In main: creating thread
  Enter an integer: 4
  Hello World from thread with arg: 4!
○ vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ □
```

> OUTLINE
> TIMELINE

master*   ⊗ 0 ⚠ 0   Ln 16, Col 1   Spaces: 3   UTF-8   LF   {} C++   Linux

File   Edit   Selection   View   Go   Run   Terminal   Help

EXPLORER

∨ ITSC-3146-PROGRAMS-EDWARD-...
  > .vscode
  ∨ assign-2-1-2
    > CPPBasics1
    > ITSC_3146_A_3_2
    > ITSC_3146_A_3_2_2
    ∨ ITSC_3146_A_4_2
      ≡ pthread_test_3   U
      ⓖ pthread_test_3.cpp   M
      ≡ pthreads_p2   U
      ⓖ pthreads_p2.cpp   M
      ⓖ pthreads_skeleton.cpp M
      ⓘ README.md
    > ITSC_3146_A_9_1
    > ITSC_3146_Processes
    ≡ main
    ⓖ main.cpp

pthreads_skeleton.cpp M   •   pthreads_p2.cpp M   ×   pthread_test_3.cpp M

ITSC_3146_A_4_2 > ⓖ pthreads_p2.cpp > ✪ main()

```
57
58
59
60  ∨  int main()
61     {
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

bash - ITSC_3146_A_4_2

```
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ g++ pthreads_p2.cpp -o p
  threads_p2 -lpthread
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthreads_p2
  Enter 10 integers:
  10
  12
  143
  -1
  -12
  12
  0
  3
  4
  5
  Total negative numbers: 2

  Average: 17.6

  The numbers in reverse:
  5
  4
  3
  0
  12
  -12
  -1
  143
  12
  10
○ vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ▯
```

> OUTLINE
> TIMELINE

⌥ master*   ↻   ⊗ 0 ⚠ 0   Ln 68, Col 12   Spaces: 3   UTF-8   LF   {} C++   Linux

---

Ubuntu [Running] - Oracle VM VirtualBox

File   Machine   View   Input   Devices   Help

Activities   Visual Studio Code   Tue 09:37

File   Edit   Selection   View   Go   Run   Terminal   Help

EXPLORER

∨ ITSC-3146-PROGRAMS-EDWARD-...
  > .vscode
  ∨ assign-2-1-2
    > CPPBasics1
    > ITSC_3146_A_3_2
    > ITSC_3146_A_3_2_2
    ∨ ITSC_3146_A_4_2
      ≡ pthread_test_3   U
      ⓖ pthread_test_3.cpp   M
      ≡ pthreads_p1   U
      ⓖ pthreads_p1.cpp   U
      ≡ pthreads_p2   U
      ⓖ pthreads_p2.cpp   M
      ≡ pthreads_ppp1.cpp   U
      ≡ pthreads_skeleton   U
      ⓖ pthreads_skeleton.cpp M
      ⓘ README.md
    > ITSC_3146_A_9_1
    > ITSC_3146_Processes
    ≡ main
    ⓖ main.cpp

pthreads_p1.cpp U   ×

ITSC_3146_A_4_2 > ⓖ pthreads_p1.cpp > ✪ main()

```
 5      @author: student name2, student2@uncc.edu
 6      @author: student name3, student3@uncc.edu
 7
 8      @description: A program that demonstrates processes.
 9
10      @course: ITSC 3146
11      @assignment: in-class activity [n]
12      */
13
14      #include <pthread.h>
15      #include <iostream>
16
17      using namespace std;
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

bash - ITSC_3146_A_4_2

```
  pthreads_program.cpp -pthread
  g++: error: pthreads_program.cpp: No such file or directory
  g++: fatal error: no input files
  compilation terminated.
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ g++ pthreads_ppp1.cpp -o
  pthreads_ppp1 -lpthread
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthreads_ppp1
  Thread is running...
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ g++ pthreads_ppp1.cpp -o
  pthreads_ppp1 -lpthread
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthreads_ppp1
  Thread is running...
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ g++ pthreads_p1.cpp -o p
  threads_p1 -lpthread
● vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ./pthreads_p1
  Spanish: Hola!
  English: Hello!
  Italian: Ciao!
  Hindi: Namaste!
○ vboxuser@Ubuntu:~/ITSC-3146-Programs-Edward-Yang/ITSC_3146_A_4_2$ ▯
```

> OUTLINE
> TIMELINE

⌥ master*   ↻   ⊗ 0 ⚠ 0   Ln 88, Col 2   Spaces: 3   UTF-8   LF   {} C++   Linux

Right Ctrl