1. Create a thread in either a C or a Java program and run it. The thread should read a keyboard value “x” and exit from the code, or it can also use an “ESC” to exit. That is, the thread should run until the keyboard exit character is entered. Print your source code and output to a single file and generate a pdf and submit it in Blackboard. Put your compile and run options if any in the code as comments.

Source:

**import** java.io.\*;

**import** java.util.\*;

/\*\*

\* **@author** Kevin Kuo

\*

\*/

**public** **class** Homework4AJava **implements** Runnable{

/\*\*

\* **@param** args

\*/

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

**new** Thread(**new** Homework4AJava()).start();

}

@Override

**public** **void** run() {

// **TODO** Auto-generated method stub

**long** threadId = Thread.*currentThread*().getId();

System.***out***.println("Begin Thread! Thread ID: " + threadId);

**char** c = 'y';

;

//wait for escape character

**while**(c != 'x'){

**try** {

c = (**char**) System.***in***.read();

} **catch** (IOException e) {

e.printStackTrace();

}

**if** (c == 'x'){

**break**;

}

}

threadId = Thread.*currentThread*().getId();

System.***out***.println("End Thread! Thread ID: " + threadId);

}

}

Output:

Begin Thread! Thread ID: 11

asdf

sa

xa

End Thread! Thread ID: 11

2. Using the above thread program, now create 20 threads in your program and run them. No need to wait for the keyboard in each thread, just print “Hello” and its thread id in each thread on a single line and exit. Append your source code and output to the same file as listed above. Add enough comments in your program to make it readable.

Source:

/\*\*

\* **@author** Kevin Kuo

\*

\*/

**public** **class** Homework4BJava **implements** Runnable{

/\*\*

\* **@param** args

\*/

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

**for** (**int** i = 0; i < 20; i++){

(**new** Thread(**new** Homework4BJava())).start();

}

}

@Override

**public** **void** run() {

// **TODO** Auto-generated method stub

**long** threadId = Thread.*currentThread*().getId();

System.***out***.println("Hello World! Thread ID: " + threadId);

}

}

Output:

Hello World! Thread ID: 11

Hello World! Thread ID: 15

Hello World! Thread ID: 14

Hello World! Thread ID: 13

Hello World! Thread ID: 12

Hello World! Thread ID: 17

Hello World! Thread ID: 18

Hello World! Thread ID: 16

Hello World! Thread ID: 19

Hello World! Thread ID: 20

Hello World! Thread ID: 21

Hello World! Thread ID: 22

Hello World! Thread ID: 23

Hello World! Thread ID: 24

Hello World! Thread ID: 25

Hello World! Thread ID: 26

Hello World! Thread ID: 27

Hello World! Thread ID: 28

Hello World! Thread ID: 29

Hello World! Thread ID: 30