Write Java programs to implement multiple threads and apply join method for thread and thread has to be started after 500ms using sleep ().

CODE:

import java.util.Scanner;

class MyThread extends Thread {

@Override

public void run() {

System.out.println(Thread.currentThread().getName() + " is running");

try {

Thread.sleep(1000);

} catch (InterruptedException e) {

System.out.println(e);

}

System.out.println(Thread.currentThread().getName() + " is completed");

}

}

public class ThreadExample {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter the number of threads: ");

int numThreads = scanner.nextInt();

scanner.nextLine(); // Consume newline

System.out.print("Enter the name of the delayed thread: ");

String delayedThreadName = scanner.nextLine();

scanner.close();

MyThread[] threads = new MyThread[numThreads];

for (int i = 0; i < numThreads; i++) {

threads[i] = new MyThread();

threads[i].start();

}

// Starting a thread after a delay

Thread delayedThread = new Thread(() -> {

try {

Thread.sleep(500);

System.out.println(delayedThreadName + " is running after delay");

} catch (InterruptedException e) {

System.out.println(e);

}

});

delayedThread.start();

// Applying join

for (MyThread thread : threads) {

try {

thread.join();

} catch (InterruptedException e) {

System.out.println(e);

}

}

System.out.println("All threads have completed execution");

}

}

OUTPUT:

C:\javap>javac ThreadExample.java

C:\javap>java ThreadExample

Enter the number of threads: 9

Enter the name of the delayed thread: D

Thread-0 is running

Thread-7 is running

Thread-5 is running

Thread-1 is running

Thread-8 is running

Thread-2 is running

Thread-3 is running

Thread-6 is running

Thread-4 is running

D is running after delay

Thread-0 is completed

Thread-2 is completed

Thread-7 is completed

Thread-3 is completed

Thread-8 is completed

Thread-1 is completed

Thread-6 is completed

Thread-5 is completed

Thread-4 is completed

All threads have completed execution

