|  |  |
| --- | --- |
| **package** lesson11.lecture.threadssingleton;  **public** **class** Singleton {  **private** **static** Singleton *instance*;  **public** **static** **int** *counter* = 0;  **private** Singleton() {  *incrementCounter*();  }  **public** **static** Singleton getInstance() {  **if**(*instance* == **null**) {  *instance* = **new** Singleton();  }  **return** *instance*;  }  **private** **static** **void** incrementCounter() {  *counter*++;  }  } | **package** lesson11.lecture.threadssingleton;  **public** **class** Singleton2 {  **private** **static** Singleton2 *instance*;  **public** **static** **int** *counter* = 0;  **private** Singleton2() {  *incrementCounter*();  }  **public** **static** Singleton2 getInstance() {  **if**(*instance* == **null**) {  *instance* = **new** Singleton2();  }  **return** *instance*;  }  /\* Guarantees proper count of instances \*/  **synchronized** **private** **static** **void** incrementCounter() {  *counter*++;  }  } |
| **package** lesson11.lecture.threadssingleton;  **public** **class** SingleThreadedTest2 {  **public** **static** **void** main(String[] args) {  **for**(**int** i = 0; i < 1; ++i) {  *createAndStartThread*();  System.***out***.println("Num instances: " + Singleton.*counter*);  }  }  **public** **static** **void** createAndStartThread() {  Runnable r = () -> {  **for**(**int** i = 0; i < 1000; ++i) {  Singleton.*getInstance*();  }  };  **new** Thread(r).start();  **try** {  Thread.*sleep*(10);  } **catch**(InterruptedException e) {}  }  } | **package** lesson11.lecture.threadssingleton;  **public** **class** SynchronizedSingleton {  **private** **static** SynchronizedSingleton *instance*;  **public** **static** **int** *counter* = 0;  **private** SynchronizedSingleton() {  *incrementCounter*();  }  **synchronized** **public** **static** SynchronizedSingleton getInstance() {  **if**(*instance* == **null**) {  *instance* = **new** SynchronizedSingleton();  }  **return** *instance*;  }  **private** **static** **void** incrementCounter() {  *counter*++;  }  } |