- Solutions

In this lesson, we'll discuss solutions to the tasks of the previous lesson.

WE'LL COVER THE FOLLOWING ^ Solution 1 Explanation Solution 2

Solution 1#

```
//lock.cpp
#include <chrono>
#include <iostream>
#include <mutex>
#include <string>
#include <thread>
std::mutex coutMutex;
class Worker{
public:
  explicit Worker(const std::string& n):name(n){};
    void operator() (){
      for (int i= 1; i <= 3; ++i){
            // begin work
            std::this_thread::sleep_for(std::chrono::milliseconds(200));
            // end work
            std::lock_guard<std::mutex> myCoutLock(coutMutex);
            std::cout << name << ": " << "Work " << i << " done !!!" << std::endl;
        }
private:
 std::string name;
};
int main(){
  std::cout << std::endl;</pre>
  std::cout << "Boss: Let's start working." << "\n\n":
```

```
std::thread herb= std::thread(Worker("Herb"));
std::thread andrei= std::thread(Worker(" Andrei"));
std::thread scott= std::thread(Worker("
                                             Scott"));
std::thread bjarne= std::thread(Worker("
                                                Bjarne"));
std::thread andrew= std::thread(Worker("
                                                 Andrew"));
std::thread david= std::thread(Worker("
                                                   David"));
herb.join();
andrei.join();
scott.join();
bjarne.join();
andrew.join();
david.join();
std::cout << "\n" << "Boss: Let's go home." << std::endl;</pre>
std::cout << std::endl;</pre>
```







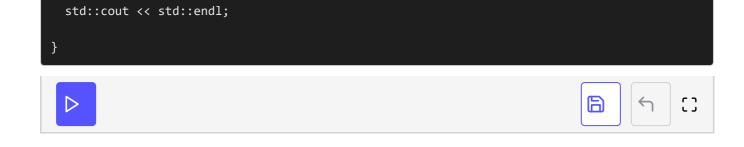
Explanation

- The std::lock_guard myCoutLock in line 20 locks the mutex coutMutex in its constructor and releases the **coutMutex** in its destructor.
- myCoutLock goes out of scope in line 22 and releases its underlying mutex coutMutex.

Solution 2

The code will take some time to execute.

```
//countDown.cpp
                                                                                              G
#include <iostream>
#include <thread>
#include <chrono>
int main() {
  std::cout << std::endl;</pre>
  for (long i=10; i>0; --i) {
    std::cout << i << std::endl;</pre>
    std::this_thread::sleep_for (std::chrono::seconds(1));
```



For further information:

• std::lock_guard

• std::unique_lock

• std::shared_lock

Let's move on to thread-safe initialization of data in the next lesson.