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Subject: How to use CoWork and Progress together?

Posted by [Tom1](#) on Tue, 07 Apr 2020 12:58:14 GMT

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Hi,

I've been trying to make CoWork and Progress work nicely together, but I just can't figure out what have I done wrong:

```
Progress pg;  
pg.Title("A parallel processing job");  
pg.SetText("Working on many items at once...");  
pg.Set(0, 100);
```

```
Atomic done=0;
```

```
CoWork co;
```

```
co * [&] {  
    for(int i = co.Next(); i < 100 ; i = co.Next()) {  
        Sleep(100); // Doing something...
```

```
    // OK, now it is done, update progress:
```

```
    GuiLock _;  
    pg.SetPos(AtomicInc(done));  
    }  
};
```

```
co.Finish();
```

Any suggestions how to make it work as it should? Now it just freezes at or near the end...

Best regards,

Tom

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Subject: Re: How to use CoWork and Progress together?

Posted by [Tom1](#) on Tue, 07 Apr 2020 14:39:44 GMT

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Hi,

I finally found the solution:

```
Progress pg;  
pg.Title("A parallel processing job");
```

```

pg.SetText("Working on many items at once...");
pg.Set(0, 100);

Atomic done=0;
Atomic stop=0;

CoWork co;
for(int t=0;t<co.GetPoolSize();t++){
    co & [&] {
        for(int i = AtomicInc(done); i<100;i = AtomicInc(done)){
            Sleep(1000); // Doing something...
            if(stop) break;
        }
    };
}

while(!co.IsFinished()){
    if(pg.Canceled()){
        AtomicInc(stop);
        break;
    }
    pg.SetPos(done);
    Sleep(100);
}
co.Finish();

```

So, in the end I did have to give up the CoWork::Loop (operator \*) and do approximately the same externally to avoid internal co.Finish(); Now the GUI is accessed entirely in the main thread and there are no more issues.

Best regards,

Tom

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Subject: Re: How to use CoWork and Progress together?

Posted by [mirek](#) on Thu, 09 Apr 2020 08:41:01 GMT

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Well, it obviously breaks rules here:

```

void Progress::Process()
{
    if(!IsOpen()) {
        dword t = msec();
        if((int)(t - show_time) >= show_delay) {
            Create(); // !!! no top-level window manipulation in non-main thread
        }
    }
}

```

```
    show_time = t;
}
}
if(IsOpen()) {
    GuiSleep(0); // no message processing in non-main thread
    ProcessEvents();
}
}
```

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Subject: Re: How to use CoWork and Progress together?

Posted by [mirek](#) on Thu, 09 Apr 2020 11:13:41 GMT

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This works:

GUI\_APP\_MAIN

```
{
    Progress pg;
    pg.Title("A parallel processing job");
    pg.SetText("Working on many items at once...");
    pg.Set(0, 100);
```

```
    std::atomic<int> ii(0);
```

```
    CoDo([&] {
        for(int i = ii++; i < 100 ; i = ii++) {
            Sleep(1000); // Doing something...
```

```
    // OK, now it is done, update progress:
```

```
        if(IsMainThread())
            pg.SetPos(ii);
    }
});
}
```

(CoDo is "new and shiny" variant of CoWork::\*)

I will try to make this into the CtrlLib.

Mirek

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Subject: Re: How to use CoWork and Progress together?

Posted by [mirek](#) on Thu, 09 Apr 2020 12:01:55 GMT

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So now some Progress methods can be called without restriction in MT.

This is a new reference example:

```
#include <CtrlLib/CtrlLib.h>

using namespace Upp;

GUI_APP_MAIN
{
    Progress pi("Working on many items at once...", 100);
    std::atomic<int> ii(0);
    CoDo([&] {
        for(int i = ii++; i < 100; i = ii++) {
            for(int q = 0; q < 1000; q++) {
                if(pi.Canceled()) // ideally call Canceled every 1-10ms
                    return;
                Sleep(1); // work simulation
            }
            pi.Step();
        }
    });
}
```

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Subject: Re: How to use CoWork and Progress together?

Posted by [Tom1](#) on Sat, 11 Apr 2020 09:14:35 GMT

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Hi Mirek,

This is a nice and stylish improvement!

However, there is still something to fix as using this through a menu leaves the app frozen at or near the completion of parallel processing. Here's a testcase based on the reference example:

```
#include <CtrlLib/CtrlLib.h>

using namespace Upp;

class Test: public TopWindow{
public:
    typedef Test CLASSNAME;
```

MenuBar menu;

```
void Worker(){
    Progress pi("Working on many items at once...", 100);
    std::atomic<int> ii(0);
    CoDo([&] {
        for(int i = ii++; i < 100; i = ii++) {
            for(int q = 0; q < 1000; q++) {
                if(pi.Canceled()) // ideally call Canceled every 1-10ms
                    return;
                Sleep(1); // work simulation
            }
            pi.Step();
        }
    });
}
```

```
void MainMenu(Bar &bar){
    bar.Add("Process...", THISFN(Worker));
}
```

```
Test(){
    AddFrame(menu);
    menu.Set([=](Bar& bar) { MainMenu(bar); });
}
};
```

```
GUI_APP_MAIN
{
    Test test;
    test.Run();
}
```

Thanks and best regards,

Tom

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Subject: Re: How to use CoWork and Progress together?  
Posted by [mirek](#) on Sat, 11 Apr 2020 21:10:47 GMT  
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Nice deadlock :)

Hopefully fixed.

Mirek

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Subject: Re: How to use CoWork and Progress together?

Posted by [Tom1](#) on Mon, 13 Apr 2020 07:52:14 GMT

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Hi Mirek,

Thanks! It works now correctly. :)

Best regards,

Tom

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Subject: Re: How to use CoWork and Progress together?

Posted by [deep](#) on Mon, 13 Apr 2020 10:41:38 GMT

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Hi

I checked this on my system.

I am using Ubuntu 16.04, gtk3 clang

I get following error

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#### File Attachments

1) [Selection\\_017.png](#), downloaded 387 times

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Subject: Re: How to use CoWork and Progress together?

Posted by [mirek](#) on Mon, 13 Apr 2020 11:26:31 GMT

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deep wrote on Mon, 13 April 2020 12:41Hi

I checked this on my system.

I am using Ubuntu 16.04, gtk3 clang

I get following error

I have been trying for about 5 minutes, all seems to be OK.

Are you testing with current trunk?

Mirek

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Subject: Re: How to use CoWork and Progress together?

Posted by [deep](#) on Mon, 13 Apr 2020 12:05:00 GMT

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Hi

I was on 14219

Now with Latest 14297 it is working fine.

Thanks Mirek.

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