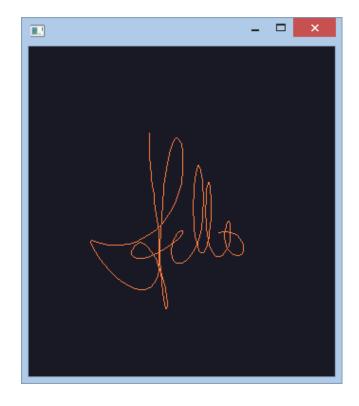# My Favorite C++ 10-Liner

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How Easy Is C++, Really?   13+5 LOC Example

```
#include "cinder/app/AppBasic.h"
#include "cinder/dx/dx.h"
#include <vector>
using namespace ci;
using namespace ci::app;

class MyApp : public AppBasic {
    std::vector<Vec2f> points;
public:
    void mouseDrag( MouseEvent e )
        { points.push_back(e.getPos()); }

    void draw() {
        dx::clear( Color( 0.1f, 0.1f, 0.15f ) );
        dx::color( 1.0f, 0.5f, 0.25f );
        dx::begin( GL_LINE_STRIP );
        for( auto& e : points )
            dx::vertex(e);
        dx::end();
    }
};

CINDER_APP_BASIC( MyApp, RendererDx )
```

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```cpp
shared_ptr<widget> get_widget( int id ) {

    static map<int, weak_ptr<widget>> cache;
    static mutex m;

    lock_guard<mutex> hold(m);
    auto sp = cache[id].lock();
    if (!sp) cache[id] = sp = load_widget(id);
    return sp;

}
```

assertion failure: checksum(linecnt)

A complete reference-counted object cache

C++98
- map operator[] auto-insertion

C++11
- auto
- mutex, lock_guard
- Thread-safe fn statics
- shared_ptr
- weak_ptr
- Thread-safe .lock()

Since I Had 3 Lines Left Over...

```cpp
widget& instance() {

    static widget w;

    return w;
}
```

Meyers Singleton

C++11
- Thread-safe fn statics

Bonus:
Does destruction!

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