Empty Program

*Implementing an empty program in wxWidgets*

CMakeLists.txt Changes

```
aux_source_directory(./src/ SRC)
include_directories(./include/ INCLUDE)
```

Since we're using folder directories, we must include this in CMakeLists.txt now

Frame.h & Frame.cpp

What is a frame?: A frame is a subspace (and technically our window as well) of our program's window. We may group widgets and objects in a frame compared to a wxApp class in wxWidgets for example.
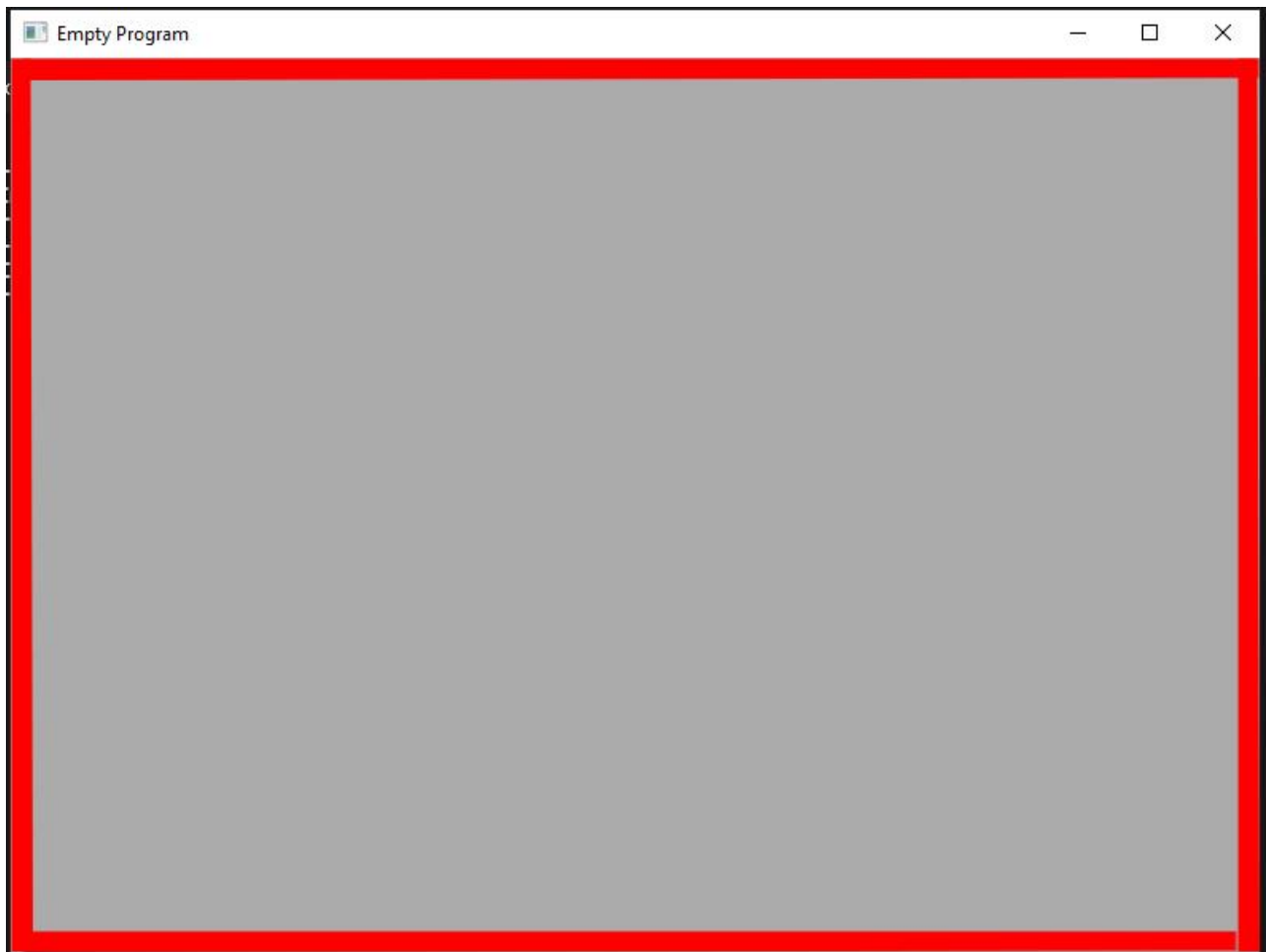
The red outline shows our main frame portion

```
 1    #pragma once
 2
 3    #include <wx/wx.h>
 4
 5    class Frame : public wxFrame
 6    {
 7    public:
 8        Frame();
 9    };
10
```
Frame.h

Frame.h Contents:
1) (**Line 5**) We'll need to derive our frame from **wxFrame**
2) (**Line 8**) We may use wxFrame's arguments within our constructor in **Frame.cpp**, meaning we don't need to have any arguments within our Frame's constructor
3) We'd implement a **private** section as well for objects such as buttons.

```
 1    #include "Frame.h"
 2
 3    Frame::Frame() : wxFrame(nullptr, wxID_ANY, "Empty Program", wxPoint(100, 100), wxSize(800, 600))
 4    {
 5
 6    }
```
Frame.cpp

Frame.cpp Contents:
● Within our constructor, we may use the derived wxFrame's constructor arguments to create our new frame. Within our constructor, we may initialize our objects in the future.
1) nullptr **~ Decides the parent frame**
2) wxID_ANY **~ Every object needs an ID, since we're not using the ID, we may choose any.**
3) "Empty Program" **~ Frame title**
4) wxPoint(100, 100) **~ Sets where the window will be on the screen**
5) wxSize(800, 600) **~ Sets the size of our window**

App.h & App.cpp

```
1    #pragma once
2
3    #include <wx/wx.h>
4    #include "Frame.h"
5
6    class App : public wxApp
7    {
8    public:
9        virtual bool OnInit();
10
11   private:
12       Frame* mainFrame;
13   };
```
App.h

App.h Contents:
1) (**Line 6**) We'll also need to derive our App class from **wxApp**.
2) (**Line 9**) This is a virtual function from wxWidgets (probably wxApp) used to initialize our program.
3) (**Line 12**) This is where our frames go.

```
1    #include "App.h"
2
3    IMPLEMENT_APP(App);
4
5    bool App::OnInit()
6    {
7        mainFrame = new Frame();
8        mainFrame->Show();
9
10       return true;
11   }
```
App.cpp

App.cpp Contents:
1) (**Line 3**) We'll always need to use this command to tell wxWidgets that we're initializing our App class, to start our program.
2) (**Lines 7 & 8**) Initializing our frame with the default arguments set in Frame.cpp, and showing our frame with ->Show().
3) (**Line 10**) Place a return true here, to assert a successful initialization of our program. This technically won't be used however, since every GUI program undergoes a loop while functioning.