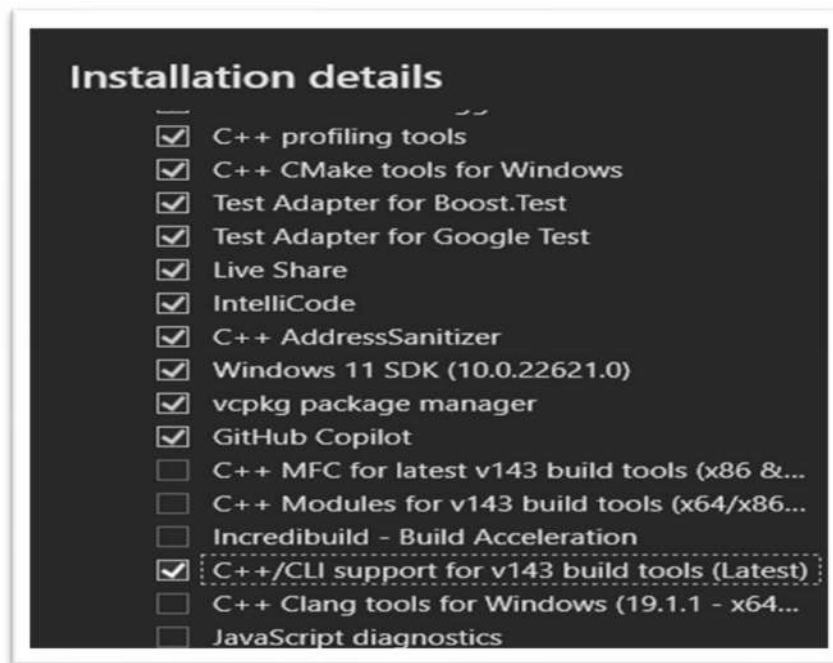By Youssef Al-Sayed

Windows Form For GUI with VS community

- Installation
  - Open VS installer
  - Choose modify and select C++/CLI

- To learn design, watch [this playlist](#).

** C++ code with GUI code

Important to include in header file

#include <msclr/marshal_cppstd.h> // to convert from textbox or any input (GUI) to string (C++)

#include <Windows.h> // like iostream but for GUI

- Data types and convert between them
  - String^

Before convert between data types must be creating object from "*marshal_context*"

code :- msclr::interop::marshal_context context;

```cpp
#include <msclr/marshal_cppstd.h>
#include <Windows.h>

namespace code {

    using namespace System;
    using namespace System::ComponentModel;
    using namespace System::Collections;
    using namespace System::Windows::Forms;
    using namespace System::Data;
    using namespace System::Drawing;

    /// <summary>
    /// Summary for MyForm
    /// </summary>
    public ref class MyForm : public System::Windows::Forms::Form
    {
    public:
        msclr::interop::marshal_context context;
        MyForm(void)
        {

            InitializeComponent();
            //
            //TODO: Add the constructor code here
            //
```

Convert String from textbox (GUI) to

-string (C++)

```cpp
private: System::Void button1_Click(System::Object^ sender, System::EventArgs^ e) {
    string str = context.marshal_as<string>(textBox1->Text);
    MessageBox::Show(gcnew String(str.c_str()));
}
};
```
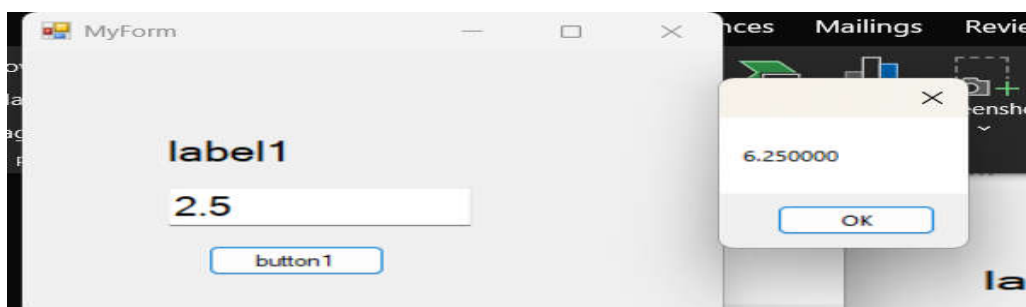
Test code when clicking button

-flaot

```cpp
private: System::Void button1_Click(System::Object^ sender, System::EventArgs^ e) {
    string str = context.marshal_as<string>(textBox1->Text);
    float toFloat = stof(str);
    toFloat = toFloat * 2.5;
    str = to_string(toFloat);
    MessageBox::Show(gcnew String(str.c_str()));
}
```
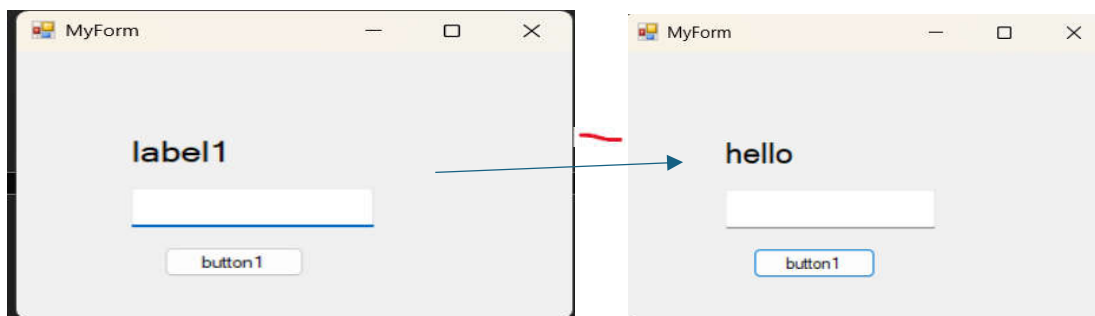
Test code :

- Convert from C++ to GUI

```
private: System::Void button1_Click(System::Object^ sender, System::EventArgs^ e) {
    string str = "hello";
    label1->Text = gcnew String(str.c_str());
}
};
```

Test :


```
private: System::Void button1_Click(System::Object^ sender, System::EventArgs^ e) {
    int temp = 550;
    label1->Text = "number "+gcnew INT(temp);
    /*
    or
    label1->Text = temp.ToString();
    */

}
```

Test: