



## How to Use C++ Round-Trip Engineering?

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Visual Paradigm supports C++ round-trip engineering. It allows you to generate ANSI C++ code from UML [class diagram](#), and to reverse engineer UML class diagram from ANSI C++ code. In this tutorial you will be given a project file, and try to generate ANSI C++ code from it. Then, make change in the code and have the UML class model updated from the code.

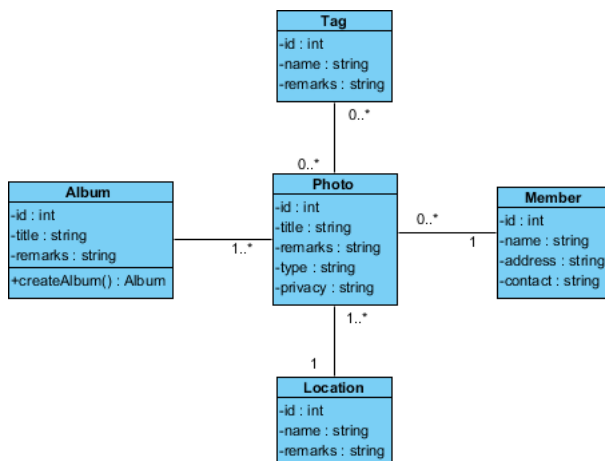
### Overview of this Tutorial

In this tutorial, we will show you how to perform round-trip engineering of ANSI C++ with a given project file.

In order to complete this tutorial you must have Visual Paradigm installed. You also need to have basic knowledge in [UML modeling](#) with Visual Paradigm.

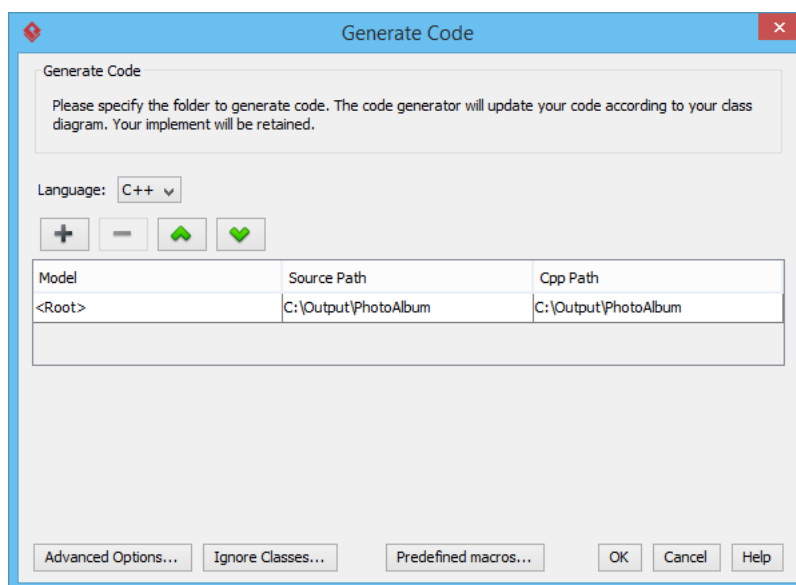
### Generating ANSI C++ Code from Class Diagram

1. Download [Photo-Album-CPP.vpp](#). You can also find this file at the bottom of this tutorial, under the Resources section.
2. Open the downloaded project file in Visual Paradigm.
3. Open the class diagram *Photo Album*. You should see the class diagram below:

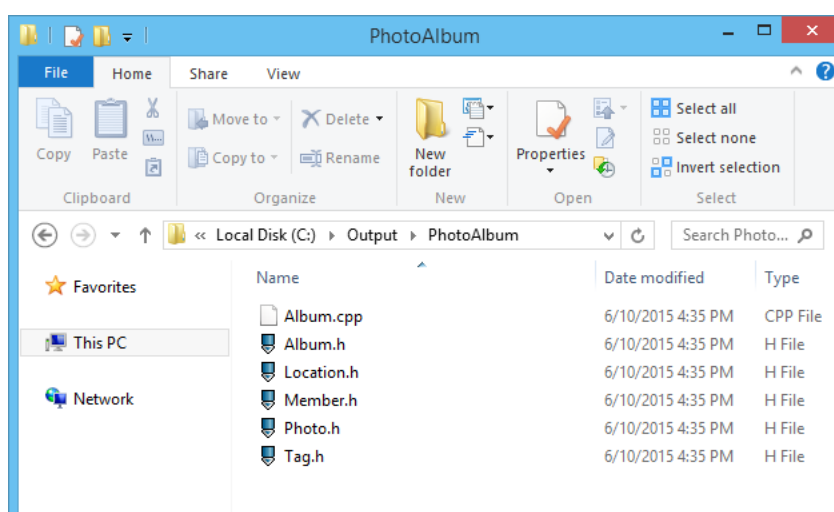


4. There are few ways you can take to generate ANSI C++ code - generate code from diagram, from selected classes, or for the whole project. In this tutorial let's try to generate code for the whole project. Select **Tools > Code > Generate C++ Code** from the toolbar.

5. In the **Generate Code** window, specify the **Source Path**. You can specify a path by clicking on the cell and then click on the ... to popup the file chooser for selecting a folder.



6. Click **OK** to generate. Source files are generated to the output path specified.

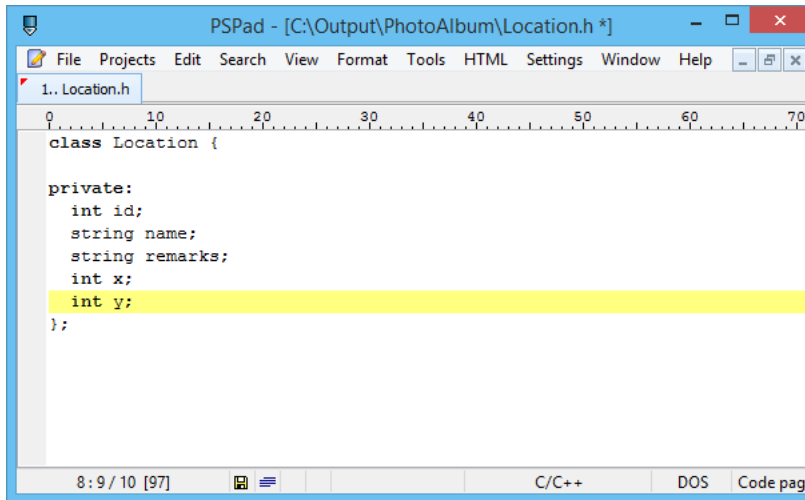


## Updating UML Class Model from ANSI C++

Once you have finished generating code, you can modify it with your IDE or with any text editor. When you've finished the modification, you can reverse the code-base back to the Visual Paradigm for an update of the UML class model. Let's have a try.

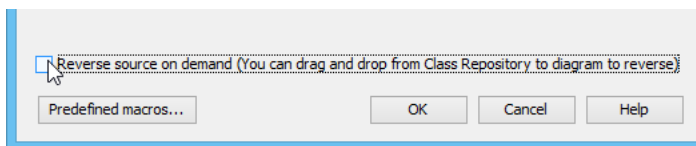
1. Open the generated file *Location.h* in a text editor.

- Let's say we want to add two attributes for the coordinate (x and y) of the location. Let's add two private int attributes x and y.

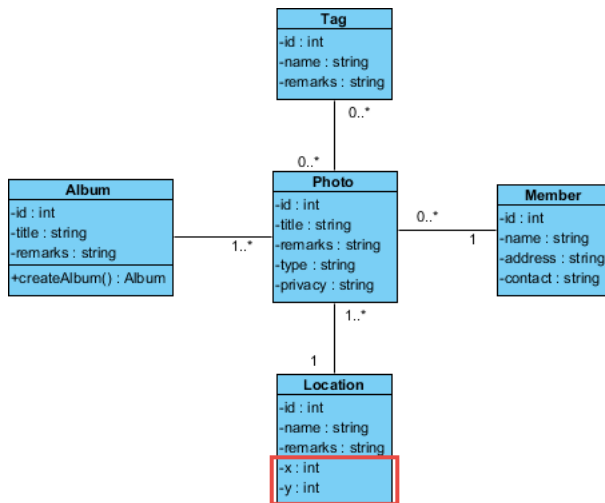


```
class Location {  
private:  
    int id;  
    string name;  
    string remarks;  
    int x;  
    int y;  
};
```

- Save the changes.
- Let's update our UML model to reflect the change just made. Select **Tools > Code > Reverse C++ Code...** from the toolbar.
- Uncheck **Reverse source on demand** at the bottom of the **Reverse Code** window. If you keep it checked, the UML model won't be updated directly. Instead, an index tree will be formed from the source files specified in the source folder. We want our model updated, so let's uncheck it.



- Click **OK**. Now, the class diagram is updated and you should see the two private int attributes *x* and *y* added to the *Location* class.



#### Resources

- [Photo-Album-CPP.vpp](#)

#### Related Links

- [Code Engineering features in Visual Paradigm](#)
- [State Machine Diagram feature description](#)



Visual Paradigm home page  
(<https://www.visual-paradigm.com/>)

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