Subject: using Ctrl::Add; required for templates / overloaded virtual functions
Posted by kohait00 on Wed, 23 Jun 2010 12:14:26 GMT
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hi folks,

this one is sort of freak situation in my application. nevertheless i provide it here for discussion. consider the following example.

```
class MyD
 : public ArrayCtrl
 //works with Label (it has no own Add() overloads,
 //does not work with ArrayCtrl, it has own Add() overloads
{
public:
 typedef MyD CLASSNAME;
 virtual ~MyD() {}
};

GUI_APP_MAIN
{
 Label l;
 MyD md;

 //option 1: << desired >>

 void (MyD::* mfp)(Ctrl &) = NULL;
 mfp = (void (MyD::*)(Ctrl &)) &MyD::Add;
 //only works if ArrayCtrl:: class has a using Ctrl::Add
 //otherwise
 //error C2440: 'type cast' : cannot convert
 //from 'overloaded-function'
 //to 'void (__thiscall Upp::Ctrl::* )(Upp::Ctrl &)'
 //None of the functions with this name in scope match the target type

 (md.*mfp)(l);

 //option 2: doenst work anyway, because binding to Ctrl::Add is clear.
 void (Ctrl::* mfp2)(Ctrl &) = NULL;
 mfp2 = (void (Ctrl::*)(Ctrl &)) &Ctrl::Add; //(void (Ctrl::*)(Ctrl &))
 (md.*mfp2)(l); //does *not* call overriden Add(Ctrl&), but the one from Ctrl::

 ttest().Run();
}
```

problem is following:

i need to reference the virtual & overloaded ArrayCtrl::Add(Ctrl &) member function with a member function pointer (in template environment, but this one produces same errors and solution is applicable there as well). i access the Add(Ctrl&) function from topmost derived class MyD and it works fine with all Ctrl's that have no own Add() function *overloads* (not virtual overrides). but i.e. ArrayCtrl which has Add(Value&) and others, prevents this one from compiling.

key line is

```
 mfp = (void (MyD::*)(Ctrl &)) &MyD::Add;
```

for which MSC produces C2440 error.

i managed to solve it by adding a
ArrayCtrl.h:427

```
using Ctrl::Add;
```

which enables the compiler to deduce stuff explicitly, since ArrayCtrl now explicitly provides access to Ctrl::Add(Ctrl&) and the line compiles, both in MSC and GCC.

now i think of it as a general point to take position to.

why not providing using Ctrl::XXX ; for functions, which we know are used often, are even virtual, are public as well, and are beeing overloaded by a deriving class?

(so far i found this to be the case for ArrayCtrl and DropList, sure there are some more)

what is your point?

PS: i could possibly circumvent the problem by specifying an intermediate class like that, exposing Ctrl::Add explicitly, but is it the clean way?

```
class MyArrayCtrl
 : public ArrayCtrl
{
public:
 typedef MyArrayCtrl CLASSNAME;
 virtual ~MyArrayCtrl() {}
 using Ctrl::Add;
};
```

sorry for the long post, problem is not trivial though
attached a test project

File Attachments

1) ttest.rar, downloaded 252 times