

Re: IUnknown

Source: <http://www.tech-archive.net/Archive/VC/microsoft.public.vc.language/2008-02/msg00047.html>

- *From:* George <George@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Sat, 2 Feb 2008 04:51:00 -0800
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Thanks Giovanni,

Your reply is comprehensive and my question is answered.

regards,
George

"Giovanni Dicanio" wrote:

"George" <George@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx> ha scritto nel messaggio <news:10443EBF-25C1-4DED-A5D1-4226951A4F2F@xxxxxxxxxxxxxxxxxxxx>

you can see QueryInterface has two forms of implementation, one is pure virtual function, the other is not. From traditional COM book, QueryInterface should be a pure virtual function. Correct me if I am wrong.

George: all COM *interfaces* are a set of pure virtual functions. Then, when you implement a COM interface, you inherit from that interface, and you write (or reuse) a body for the interface pure virtual functions, which become class methods with a body, in C++.

Any ideas?

```
IUnknown
{
public:
BEGIN_INTERFACE
virtual HRESULT STDMETHODCALLTYPE QueryInterface(
/* [in] */ REFIID riid,
/* [iid_is][out] */ void __RPC_FAR * __RPC_FAR *ppvObject) =
0;
```

Re: IUnknown

This is a pure virtual function, in fact it has the form "virtual
f(...) = 0".

"virtual" --> virtual function (or better virtual method)
"= 0" --> pure

```
template<class Q>
HRESULT STDMETHODCALLTYPE QueryInterface(Q** pp)
{
    return QueryInterface(__uuidof(Q), (void **)pp);
}
```

This seems a C++ template "helper" *implementation* of QueryInterface, that allows the caller to use an interface (Q), instead of the interface ID. In fact, this implementation gets the Q interface ID using __uuidof. The "real" QueryInterface specification is the first you read. This second one is just an helper template implementation for QueryInterface virtual method, to allow programmers to write something like this

```
IMyInterface * pMyInterface;
```

```
...QueryInterface( &pMyInterface )
```

instead of the more "verbose":

```
.... QueryInterface( IID_IMyInterface, reinterpret_cast<void **>(
&pMyInterface ) );
```

HTH,
Giovanni