The Way Ahead

QA·IQ

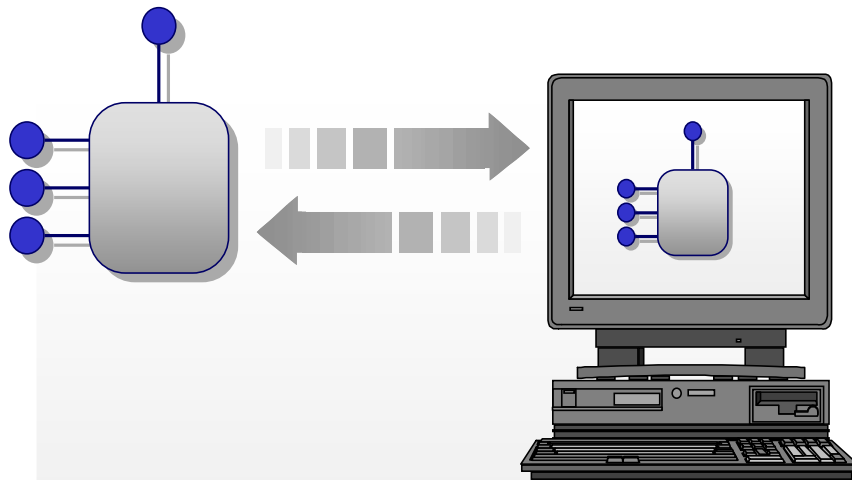**COM Programming**

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Chapter Overview

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- **Objectives**
    - **Check out what's happening in the COM world**
    - **Put the course into perspective**
    - **Point the way to further information**

- **Chapter content**
    - **What have we achieved?**
    - **Consolidating your knowledge and experience**
    - **Useful sources of further information**

- **Close**

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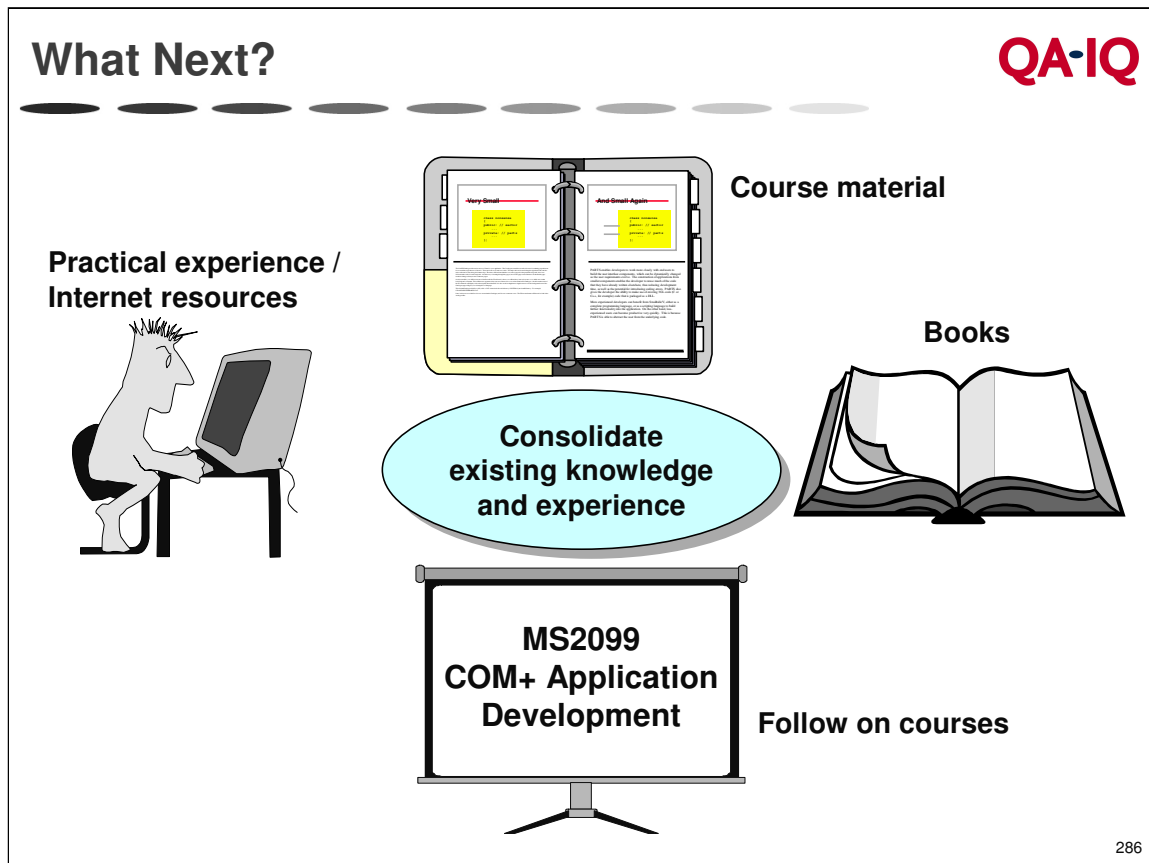**What Have We Achieved?**   **QA-IQ**

On completion of this course, you should be able to:
- *Describe the basic features of COM* ✓
- *Build a simple COM object from scratch* ✓
- *Define a COM interface using IDL* ✓
- *Build more-complex COM objects using ATL* ✓
- *Write COM clients in other languages* ✓
- *Implement callbacks using connection points* ✓
- *Appreciate the issues involved in DCOM* ✓
- *Describe the features of the COM+ environment* ✓

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This course covered a lot of material in five very short days.

You've been introduced to COM; seen how IDL works; developed **real** COM objects using both C++ and ATL, and looked at some of the more advanced features of COM.

What Next?

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Practical experience / Internet resources

Course material

Books

Consolidate existing knowledge and experience

MS2099 COM+ Application Development

Follow on courses

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The best way to hone your new found COM skills is to work with COM.

So play with it, debug it and enjoy exploring COM.

Use Visual Basic, the MIDL compiler, OLE View and DCOMCNFG, along with ATL to gain that deeper understanding of COM.

You might also want to further develop your skills in COM+ programming on Windows 2000. COM+ lies at the heart of Microsoft Windows DNA (**D**istributed inter**N**et **A**pplication) architecture, even with the advent of .NET.

Attending Microsoft Official Curriculum (MOC) course 2099 covers the facilities of COM+ that we have only had the chance to introduce on this course, and will let you new exploit your newfound experience with COM and interfaced based programming.

Advances in C++ / ATL

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- **Visual C++.NET**
  - **Delivers attribute support directly to C++**
  - **Removes the necessity for IDL**

- **ATL 7**
  - **General class improvements**
    - There's even a wrapper for the SafeArray!
  - **The CComModule / CExeModule functionality has been revamped**

- **ATL Server 7**
  - **For writing ISAPI extensions or Web Services using ATL technologies**

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Check out some of these COM Books

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- **Inside COM**
    - **Dale Rogerson, Microsoft Press, 1997, ISBN 1572313498**

- **Inside Distributed COM**
    - **Guy Eddon and Henry Eddon, Microsoft Press, 1998, ISBN 157231849X**

- **ATL COM Programmer's Reference**
    - **Richard Grimes, Wrox Press, 1998, ISBN 1861002491**

- **ATL Internals**
    - **Chris Sells, Brent Rector, Addison Wesley, 1999, ISBN 0201695898**

- **Essential COM**
    - **Don Box, Addison Wesley, 1997, ISBN 0201634465**

- **Transactional COM+**
    - **Tim Ewald, Addison Wesley, 2001, ISBN 0201615940**

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There are many great books on COM and COM+ programming (far more than just those listed above). As can be expected, all the books have different strengths and weaknesses, with book selection being a very personal thing.

So check them out, read reviews and scrounge a copy from a colleague before rushing out to buy your own.

Where to Look on the Web

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- **Microsoft COM Technologies**
    - **http://www.microsoft.com/com**

- **Microsoft Developer Network (MSDN) Online**
    - **http://msdn.microsoft.com**

- **World of ATL**
    - **http://www.worldofatl.com**

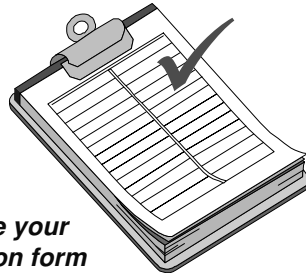- **COM(+) Developer Resources**
    - **http://www.widgetware.com**

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As ever, with all things Internet related, please validate and verify any code that you download BEFORE executing it.

Before you go ...

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Remember to make a copy of your practicals to take away

Please complete your course evaluation form and hand it to your instructor

This is to certify that ...

Collect your certificate of achievement

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