CA597

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Please note the following is archived material from the Academic year 2005/2006. I will not be lecturing this course this year. Please contact this years lecturer for details.

1. Week 11/12

Presentation of projects to class.

2. Week 10

Review all aspects of the course.

The following articles on various topics are worth reading, but are not examinable. Some of the links are related to email discussions I have had with students in CA597, others are just articles or books which are good.

- .NET remoting Vs Web Services Vs COM+ performance article
- Binary XML
- Distributed applications in .NET
- .NET XML Web Services
- Quality Attributes of Software [non-functional requirements]
- Component Software: Beyond Object-Oriented Programming (Hardcover) by Clemens Szyperski
- UML 2 Toolkit (Paperback) by Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado
- The nature of scientific "proof" and the development of software by Joe Marasco

3. Week 9

This week we looked at the The Future of eCommerce. Have a look at the SemanticWeb portal for more up to date information on the semantic web. The vision of the semantic web is set out here, I expect everyone to have read this paper. More information about the semantic web technologies and some applications of the semantic web are detailed here. A good book on RDF is Practical RDF (Paperback), by Shelley Powers.

The best books on Web Services/SOAP are, Programming Web Services with SOAP (Paperback) by James Snell, Doug Tidwell, Pavel Kulchenko and Web Services Essentials (O'Reilly XML) (Paperback) by Ethan Cerami. Both are a little old but explain the cocepts nicely. IBM have great Web service articles here. Apache Axis is a Web service toolkit which provides all the software needed for creating and consuming Web services, i'd recommend installing it to try it out.

4. Week 8

Lectures this week will review crytosystems. I hope todo a couple of quick in class demos. We will also look at some possible exam questions.

If you are a bit confused about how RSA generates public/private keys the following link, RSA-Demo, should be useful.

The demos of DES and RSA done in class were done using OpenSSL. OpenSSL can be installed easily using package managers on Linux, e.g. apt-get install openssl (under Ubuntu). It is also made available by GNU for the Windows operating systems, the downlaod page is here.

A nice primer on how to use OpenSSL is called, An Introduction to OpenSSL, Part One: Cryptographic Functions by Holt Sorenson . I used this tutorial as the basis for the in class demos.

O'Reilly have a book on OpenSSL called Network Security with OpenSSL Cryptography for Secure Communications By John Viega, Matt Messier, Pravir Chandra. The first chapter is free and well worth a read. I've linked to it here.

Note: OpenSSL is a library written in C that provides routines for cryptographic primitives which are utilised in implementing the Secure Sockets Layer (SSL) protocol, it should not be confused with the SSL/TLS protocol itself. OpenSSL is free to use and is open source.

*I have just put up the demo times for the projects in week 11/12. Also as the project submission date was on Good Friday I have extended the deadline to 18/04/06 @09:00 for MECB/MECT/GDF1 and 19/04/06 @18:30 for GDF2. No extensions will be given under any circumstances. You must submit your deliverables on this date regardless of when your presentation is due to take place.

5. Week 7

Lectures this week will look at Aspects of eCommerce Security. Please take some time to read up on DES, RSA and SSL. The Web Security, Privacy & Commerce, 2nd Edition - Simson Garfinkel book has two excellent chapters (3 and 4), which are worthy of reading.

I have invited Colm Ó hÉigeartaigh, a PhD candidate here in the School of Computing, todo a special lecture this Thursday at 11am on Cryptography. He will explain how DES, RSA and HyperElliptic cryptosystems work from a mathematical point of view. This is a great opportunity to get an insight into how these systems work and i'd appreciate it if everyone could turn up.

6. Week 6

Lectures this week will look at System Design.

7. Week 5

Tues: We will review the material looked at for the last four weeks and try to tie it all into a case study for an airline website.

Wed (GDF2): Lectures this week will look at Distributed Object Technology

Thurs: We will look at distributed computing again. This time we will consider the Java Distributed Computing - Jim Farley text book. We will consider how difficult distributed computing would be without technologies such as RMI/CORBA. I highly recommend reading Chapter 3 before the class.

There are a number of books available as part of the ebooks initiative here in the DCU library. These books contain information relevant to various parts of the course, and are freely available online in DCU....

Java Distributed Computing - Jim Farley
Java for the Web with Servlets, JSP, and EJB: A Developer's Guide to J2EE Solutions - Budi Kurniawan
Learning XML, 2nd Edition - Erik T. Ray
XML Schema - Eric van der Vlist
Web Security, Privacy & Commerce, 2nd Edition - Simson Garfinkel
HTTP: The Definitive Guide - David Gourley , Brian Totty

Also you might find the new free (to develop, deploy, and distribute) Oracle DB useful in your project, it's at Oracle XE.

The class notes are now available as PPTs.

Clarification: COSNaming stands for Common Object Services (COS) Name Server.

8. Week 4

Lectures this week will look at Distributed Object Technology. A nice Java RMI tutorial is available here. A good CORBA tutorial is available here. An excellent COM tutorial is here. In .NET speak DCOM is .NET Remoting.

9. Week 3

Lectures this week will look at XML and related technologies. You should read the following tutorials on the W3Schools site;XML, XSLT, XPATH, XQuery, XLink, XPointer, DTD, Schema, XML DOM. You should also look up some of the XML Parser implementations discussed in class e.g. Xerces, Xalan

There are some nice code examples of DOM/SAX/XSLT here, I would recommend trying these out yourselves to get a feel for how XML works.

It is important to know the difference between the HTML/Browser DOM and an XML DOM, as discussed in the lecturers.

Remember anything discussed in lectures or linked to from this site is examinable!

I have put up the project groups on the assignment page.

I have just put up the marking scheme for the project.

10. Week 2 - 13/02/06 to 17/02/06

Lectures this week will look at The Internet and The World-Wide Web.

Please note that any documents linked to from this site are considered examinable. So please make sure you read them in your own time. Also I may add in things retrospectively as they come to mind.

Correction: The notes say UDP means Unreliable Data Protocol, it doesn't, it should read User Datagram Protocol.

11. Week 1 - 06/02/06 to 10/02/06

Lectures for CA597, eCommerce Infrastructure begin this Tuesday 07/02/06.

Lectures this week will look at Business and Technology.

We also discussed the W3C standardisation process, notes on W3Schools. Specifically we looked at the standardisation time-line for HTML, notes on W3Schools.

It is important to be be aware of other standards organisations such as OASIS, IETF and OMG.

12. Lecture Notes

Lecture notes for CA597, can be found here.

13. Course Specification

The course specification for CA597, can be found here. The recommended book for the course is Developing Distributed and E-Commerce Applications by Darrel Ince.