COMP41530 Topic Review Sheet

This is a general list of most of the topics covered on this course.

It is not guaranteed that all exam questions will come from this list.

Introduction:

- IS Complexity tends to increase
- Monolithic Systems
- The Client/Server Computing Model

SOA

- SOA as an approach
- SOA advantages
- SOA common pitfalls
- 3 Levels of SOA in an organisation

WebServices

- WebServices as a specific set of technologies
- Difference between SOA v. WebServices
- Why WebServices match well with SOA
- WebServices using existing infrastructure

Services in General

- Service Granularity
- Tight Coupling/Loose Coupling
- Stateless Services/Stateful Services
- Synchronous Service Calls/Asynchronous Service Calls
- Service Level Agreements

XML

- XML structure, limitations
- XML Benefits and drawbacks
- XML Schemas
- WSDL
- SOAP
- SOAP v. WebServices
- SOAP benefits & critcisims
- SOAP Header
- SOAP Envelope
- SOAP Faults

- WS-Standards

Middleware:

- Middleware - examples, pitfalls
- MOM - message oriented middleware

Security

- Firewalls
- Intrusion Detection Systems
- Intrusion Protection Systems
- Security Requirements in message transmission
- Internal Security Threats
- Application Firewalls
- Encryption - symmetic key
- Encryption - asymmetric keys
- Why SOA can make systems more vulnerable to attach.
- Why WebServices can be vulnerable to attack.
- Vulnerability Assesment - why, what, when.
- WS-Security
- WS-Encryption

Registries and Service Discovery

- Service Registries
- UDDI in general
- Public UDDI Service Registries in particular
- Dynamic Service Discovery
- Static Service Discovery

Development Process

- Process Modelling
- SDLC models
- The Waterfall Model of Software Development
- Spiral Model of Software Development

RESTful services/JSON

Cloud/Virtualisation

- Virtualisation of computing resources
- IAAS/PAAS/SAAS etc.
- SOA & Cloud
- Cloud & Security
- Benefits/Risks of Cloud
- SOA as mitigation to Risks in Cloud Computing