Service-Oriented Architecture Module: *Pre-study*

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Since the World-Wide Web opened up distributed computing for a huge range of users and applications, programming models to support that kind of distribution have been multiplying rapidly. The range of technologies involved in delivering such software can be bewildering, but some relatively straightforward principles for service orientation are emerging.

In this course we will study enough of the technologies of web services (SOAP and REST) to enable us to implement, call, ant intermediate simple services, but also try to engage with the broader issues of service orientation: how to design and engineer services and web APIs, orchestration, security and management.

The textbook ***Service-Oriented Computing: Semantics, Processes, Agents*** *by Singh and Huhns* is quite a helpful summary of the topics we will cover - and many more besides.

An ideal preparation for the course would be to read the whole of Part I (Basics) from the book. You could omit Chapter 4 if you are running out of time.

The **practicals** will be managed with open source tools using the following technologies:

- **XML** including XML namespaces and XML schema
  Appendix A of the textbook provides the necessary material: if you are new to XML, read this before (or, if absolutely necessary, in preference to) reading the early chapters of the book.

- **JSON**
  JSON is a very simple model for data interchange.
  The following article is a reasonably good introduction.
  http://msdn.microsoft.com/en-us/library/bb299886.aspx

- **Java**
  Most of the practical tasks will rely on the Java programming language. We will make them as accessible as possible for those who are not experts in the language, but if you have an opportunity to review some of the details of Java before the course, please do.

Finally, we may get the opportunity during the course to make use of Amazon Web Services, so it would be helpful if you could sign up in advance for an AWS account at http://aws-portal.amazon.com/gp/aws/developer/registration/.