

## What is an Ontology?

What do you understand about the ontology that has been presented for your reading this week?

There are many types of ontology definition, however, in computer science, Gruber (1993) has said that ontology is used to describe the relationships between different concepts in domains.

Could you attempt to define an ontology that would be relevant to the system that you are designing for the summative assessment?

Ontology can help the team design a secure software application by providing a formal specification of knowledge of the domain. Ontologies can capture, structure and inform you about what is needed to build a secure software system. Ontologies contain the security knowledge needed in the development of a secure software systems.

In order to develop a secure software design ware that is resistant to attacks and exploits we can consider the following:

### **Domain and Scope**

This looks at what our domain will cover and what we are going to use the app for. We will also need to look at who maintain it.

### **The Classes and Class Hierarchy**

Uschold and Gruninger (1996) advocate that class hierarchies need to be established. We can also begin to look at whether instances in classes will have a relationship to another instance.

### **Properties of Classes**

Even though we may decide on the classes we still have to decide what properties they contain.

### **The Facets**

Faceted data is a technique used to protect systems from data leakage by breaking up sensitive data into smaller pieces or facets. This will cover the value type, allowed values, the number of the values.

### **Properties**

This will cover the naming conventions we will use.

Gruber, T.R. (1993). A Translation Approach to Portable Ontology Specification. Knowledge Acquisition 5: 199-220.

Uschold, M. and Gruninger, M. (1996). Ontologies: Principles, Methods and Applications. Knowledge Engineering Review 11(2).