FIT3077 Design Rationale

The “Observer” pattern has been applied in the design of this system. In this scenario, every time the patient’s cholesterol value changes, the table gets updated with the new value. The patient(observable) does not know about the table(observer). This “Observer” pattern makes the design extendable. For example, if we were to have different views like graph, table, bar chart, we could have multiple observers that would be updated when the patient’s cholesterol value changes. This Observer class adheres to the open-closed principle. That is, it is open for extension by adding new children (observers) to the Observer class but it is closed for modification as if we were to add new observers, we don’t need to modify the Observer interface. The observer also follows the Liskov Substitutability Principle (LSP). For example, the “Observer” interface is replaceable by its subclass Table while keeping the same functionality.

Dependency Inversion Principle (DIP) is also applied in this design. The FHIR server class depends on the interface Monitor. Hence the high-level module does not know about the low-level one. If we were to extend the application by adding a new server that we would need to access for example, the high-level module Monitor would not need to be modified.