## Requirements Engineering: User Requirements as Abstract Statement

As shown previously, a **Hierarchy Chart** is a simple graphical methodology which can be used to show the functional requirements of a software system as a set of logical **modules**.
These requirements must subsequently be specified as a set of **User Requirements**.

A **user requirement** is a description of a function or service which the software system will provide. Most users will not be technical or familiar with system engineering terminology, and for this reason user requirements specification is at a **high-level** of detail (little or none).

Writing user requirements (UR) as a set of abstract statements is a common way of specifying user requirements.

When specifying the URs, group the logically related requirements (functions) together, as we did on the hierarchy of functional components.

In our case study (StockSYS) we might **initially** specify the user requirements as follows:

1. StockSYS will perform Stock administration.
2. StockSYS will perform Supplier administration.
3. StockSYS will process Sales.
4. StockSYS will process Orders.
5. StockSYS will perform administrative reporting.

Because the readers of this document, the stakeholders, will need to be informed of exactly what functions or services are being delivered by the system, the **user requirements specification** must detail **all** of the functional components identified (on the hierarchy chart).

Also, notice the use of the word **will**. This word conveys to the reader that this function (service) will be delivered. Consider the statement "StockSYS **should** perform Supplier administration" or "StockSYS **may** perform Supplier administration". These statements convey to the reader that this function may or may not be delivered.

The high-level user requirements listed above, should be expanded to include all functional components:

1. StockSYS will perform Stock administration.
   1.1. StockSYS will register a new stock item
   1.2. StockSYS will allow a stock item's details to be updated
   1.3. StockSYS will record a stock item as discontinued.
   1.4. StockSYS will perform a stock enquiry.

2. StockSYS will perform Supplier administration.
   2.1. StockSYS will register a new supplier
   2.2. StockSYS will deregister a supplier
   2.3. StockSYS will generate a supplier listing

3. StockSYS will process Sales
   3.1. StockSYS will process a sale
   3.2. StockSYS will process returned stock items

4. StockSYS will process Orders
   4.1. StockSYS will place an order to a supplier
   4.2. StockSYS will process stock received from a supplier
   4.3. StockSYS will record payments to a supplier

5. StockSYS will perform administrative reporting.
   5.1. StockSYS will generate a sales analysis report
   5.2. STOCKSYS will generate a stock analysis report

This form of specification is a good starting point for meetings with stakeholders as it can be used to:

- Identify missing requirements
- Distinguish between essential and non-essential requirements
- Alert the analyst to any significant business rules to be considered when writing the system requirements
- Prioritising requirements

Labo1: Writing user requirements as abstract statements

1. StockSYS will perform Stock administration.
    1.1. StockSYS will register a new stock item
    1.2. StockSYS will allow a stock item's details to be updated
    1.3. StockSYS will record a stock item as discontinued.
    1.4. StockSYS will perform a stock enquiry.

2. StockSYS will perform Supplier administration.
    2.1. StockSYS will register a new supplier
    2.2. StockSYS will update a supplier's details
    2.3. StockSYS will deregister a supplier
    2.4. StockSYS will generate a supplier listing

3. StockSYS will process Sales
    3.1. StockSYS will process a sale
    3.2. StockSYS will process returned stock items

4. StockSYS will process Orders
    4.1. StockSYS will place an order to a supplier
    4.2. StockSYS will process stock received from a supplier
    4.3. StockSYS will record payments to a supplier

5. StockSYS will perform administrative reporting.
    5.1. StockSYS will generate a sales analysis report
    5.2. StockSYS will generate a stock analysis report
    5.3. StockSYS will generate a stock-take report

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