Creating a Specification

Specification

- Analyse the problem from a given brief
- Identify the requirements from a given brief
    - Functional Requirements/User Requirements.
- Identify the constraints from a given brief
    - Non-Functional Requirements/Constraints.
- Verify the specification against a given brief
    - A formal specification is a mathematical description of software or hardware that may be used to develop an implementation. It describes what the system should do, not (necessarily) how the system should do it. Given such a specification, it is possible to use formal verification techniques to demonstrate that a candidate system design is correct with respect to the specification.

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The Analysis Stage

This stage (and also design) is extremely crucial to the entire cycle of events**. Any problems occurring at this stage will be propagated through the system and will become increasingly costly to rectify when discovered**. Analysis is an attempt to understand a given problem, clearly and exactly, and to generate a solution. The outcome will be a specification that is used as the basis for all subsequent work.

Sometimes, this stage begins with a vague idea or rough outline of the problem and ends with a precise **problem specification**. On other, rather more formal, occasions, it will start with a full **requirements specification** that serves as a **legal contract** between the client organisation and the development team and end with a **system specification**.

This will include hardware and software specifications, and notes on project issues such as objectives, constraints, costs and schedule. It may also include a full **functional specification**, which will describe exactly how the system is meant to behave. The functional specification is what the development team will follow in creating the software system. *The documentation typically describes various **inputs** and **outputs** and the various constraints on these.*

Questions to be asked at this stage would include:

_ What are the new system requirements?
_ What are the costs involved?
_ How long will it take to implement?

Details would be gathered by a variety of methods such as interviews and questionnaires.