## Analysis

- Researching the problem
- Feasibility study – is it worthwhile?
    - Time, how long will it take? If a project takes too long it will be made irrelevant
    - Social factors
        - Job losses
        - Recruiting specialists
    - Cost and economic factors. Will it increase profits? Costs need to be less than the benefits
    - Technical details
        - Software sufficiently developed?
        - Computers powerful enough to complete the task?
        - Trying an innovative and original solution? Be aware of the risks
    - Legal factors, primarily the data protection act
- Fact finding
    - Structured questionnaire
        - Managers
        - Minions – everyone affected by the new system
    - Interviews
        - Expensive
        - Time consuming
        - Harder to quantify results
    - Look at other organisations systems
    - Look at existing IT/paper systems
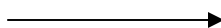   - 'Job shadowing'
- Data flow diagrams
    - 4 symbols:
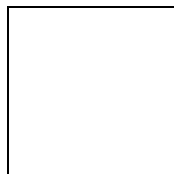
External entity/source/sink
e.g. a customer. Not part of the system

P1
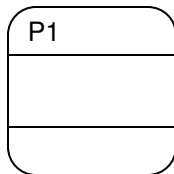
Process
Lines are optional. Top is for the process name, middle for an 'active phrase' (description starting with verb) and the bottom for the location of the process

S1
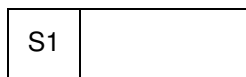
Data store
Does not have to be an electronic store

Data flow
Arrows must always be labelled with what data is moving. Used to link other components

- o Level 0, 'Context' or 'Top Level' DFD
    - Show entire system in a single process box
    - Context of system to external entities, what comes in and what goes out.
  - o Level 1, 'Second Level' DFD
    - Single process split and replaced by several processes and data stores
    - Show more detail in the diagram
- Entity relationship modelling ('E.R. Modelling')
  - o Each entity in the diagram is turned into a table, or relation in the database.
  - o Can take one of the forms:
    - One to one
    - One to many
    - Many to one
    - Many to many
  - o However, many to many is not possible, so an E.R. diagram taking this form must be reconstructed, most often by adding an additional relation to turn it into two one to many relationships
- Requirements list
  - o Essential for the designer of the system (task brief)
  - o Often takes the form of a legal agreement, so the company knows what to create the client what is being created for them
  - o Often includes a timescale for payment of the system and a timescale to which creation of the system must keep to. This concludes the analysis.