

OBERON HIGH SCHOOL
INFORMATION SYSTEMS 3

Chapter Review Questions from Building Information Systems by Fitzpatrick et al Ch 5 p141

1. What is a mission statement?

A mission statement describes the organization's reason for being, describes its focus and direction, and often includes statements about values it considers to be of importance. It describes the organization's vision and mode of operation.

2. What are organizational goals? Provide 3 examples.

The organizational goals of business or organization are a more detailed explanation of the mission statement. Sporting clubs might have an organizational goal relating to increasing memberships. A service club such as Rotary would have a goal such as providing a service to the community. A retail business would have profit as a goal.

3. What are operational goals? Provide 2 examples.

Operational goals are generally concerned with the efficiency and effectiveness of the operations of the organization, or the work of individual employees. Generally speaking, operational goals can be measured in terms of time or cost.

ATMs enable quick, easy banking for customers. PDAs enable the quick and easy collection of data such as stock numbers or water meter readings.

4. What is the difference between organizational and operational goals?

Operational goals are more specific than organizational goals. Eg an organizational goal might state **what** the business aims to achieve and an operational goal would state **how** it aims to achieve that goal.

5. What is meant by a *strategic plan*?

A strategic plan is the process of developing a mission statement and a set of organizational goals.

6. What is a feasibility study?

A feasibility study or feasibility analysis examines whether the proposed system will be practical and worthwhile for the organization to put into place.

7. What is the difference between secondary and primary data sources?

Primary data is data collected directly from the people and documents associated with the information system and its problems.

Secondary data is collected from people and documents one step removed and not directly linked to the information system and its problems.

8. Describe the various ways a Systems Analyst can collect data about an information system.

A S/A may collect data by interviews, observation, surveys and questionnaires, collecting actual examples of documents and files or research into similar and replacement systems.

9. Name the tools used for analyzing the logical operations, the processing, and the relationships between the physical components of an information system.

Tools a S/A might use include DFDs, Data Dictionaries, IPO diagrams, Grid Charts, Decision Trees or Tables, Flow Charts, Structured English, Hierarchy Charts, Structure Charts, and System Flow Charts

10. What is the purpose of a context diagram? What are the key symbols to represent context diagrams?

A context diagram is the highest level (level 0) DFD. It gives a general description of the system and indicates the relationship between the system of interest and 'the rest of the world'.

11. What is the purpose of a data flow diagram? What are the key symbols used to represent data flow diagrams?

DFDs show how application data and information flow through the system. The key symbols used are squares (external entities), circles (processes), a pair of horizontal parallel lines (data stores) and lines (data flows).

12. How do context diagrams and data flow diagrams need to be labeled?

Nouns are used to name data flows. Verbs (action words) usually followed by a noun are used to label processes. Nouns (naming words) are used to name external entities. External entities are

usually people, programs, organizations or other information systems. Nouns are used to label data stores.

13. What is a data dictionary? What is the purpose of a data dictionary?

A data dictionary is a database containing a list of the data and information items identified as part of the information system together with the properties of each of these data elements.

14. What does an IPO chart represent?

An IPO diagram or chart describes the the sequence of inputting data, processing it and then outputting information in more detail than simply naming the components, as in a DFD.

15. What is the purpose of a grid chart?

A grid chart is a table that shows relationships between different aspects of the system. For example, a grid chart can be used to show all the databases used by different applications.

16. What is a decision tree? What is one of the limitations of using a decision tree?

A decision tree is a diagrammatic technique used to describe processing.

17. What is the difference between a decision tree and a decision table?

A decision table is an alternative way of describing the same information shown in a tree. A decision table is often used instead of a tree as it can handle more conditions and can also more easily be analysed further by removing redundant elements.

18. Describe and draw the symbols associated with creating a flow chart. What is the purpose of a flow chart?

The main symbols used are rounded rectangles for terminators, rectangles for processes, diamonds for decisions, parallelograms for input and output, and circles for connectors. See answer to Q19.

19. Draw a flow chart to represent all the events that take place when you get up in the morning until you arrive at school.

(see below)

20. What is structured English? When is it used?

Structured English is abbreviated or loosely worded description of the processes used in an algorithm. Structured English is used instead of a flow chart to describe the same detailed level of application processing.

21. What is a hierarchy chart? What is it used for?

Hierarchy charts are used to show the various components of an information system in a series of hierarchical levels. They are used to define the relationship between people in organizations and to show the relationship between the parts of a computer program or information system.

22. What is a structure chart? What is it used for?

Structure charts are a way of looking the functional components of an information system. They provide more information than hierarchy charts including:

Sequence of execution between modules

Iteration/repetition of execution of modules

Selection of modules to be executed

Flow of data between the modules

23. What does the term *iteration* mean?

Iteration means the repetition of a number of steps or processes.

24. What is the difference between a system flow chart and a dataflow diagram?

System flow charts are physical models of information systems, whereas dataflow diagrams are logical models.

25. Explain why CASE tools may be used in the development of a system.

CASE tools are software packages that provide automated support for systems development.

26. What does the term *robustness* mean and what types of tests can be used to determine robustness?

Both the hardware and the software of a system need to be tough enough to withstand any pressure the user applies. The hardware might be tested to withstand heat, cold and dust. It may be tested so see that it can run 24/7.

27. Why is it important for a system to *useable* and *reliable*?

Useable means that software should be easy to use , simple to navigate, and straight forward. A reliable system is ine that can handle input or processing errors and hardware failures.

28. Why should systems be *maintainable*?

A maintainable system is one that can grow with the organization's changing needs.

29. What is a *legacy system*?

Old systems are frequently referred to as legacy systems and are based upon the information resources currently available to the organization.

30. What difficulties could be encountered due to personnel factors in an information system?

Personnel factors that may be encountered include gender and cultural background of the user, and the willingness of the user to accept change.

31. Describe the term integrity of data.

The integrity of data means reducing the number of input errors in order to increase data quality.

32. What types of health and safety issues need to be addressed when analyzing an existing system?

The H&S issue that needs to be taken into account is the ergonomic factors.

33. What is the difference between a logical design and a physical design? Provide an example.

The logical design specifies what needs to be achieved whereas the physical design specifies how the aims and objectives are to be achieved.

34. What is the difference between a top-down and bottom-up design?

A top-down approach starts with the main aims of the system and then breaks

35. What are the advantages associated with a top-down design? What are the disadvantages associated with a top-down design?

A top-down approach will usually give a completely integrated system but may cost more and take a longer time to develop.

36. What are the advantages associated with a bottom-up design? What are the disadvantages associated with a bottom-up design?

The advantage of a bottom-up design is that it is often more convenient to work with an existing system than to design and implement a new system. One disadvantage is that various departments or individuals may choose to develop their own applications that may not be able to be integrated into the bigger system due to incompatibility issues.

37. What is *Rapid Application Development* (RAD)?

RAD enables programmers to build working programs quickly. RAD is especially useful in developing GUIs, multimedia and database applications that would normally take a large development time.

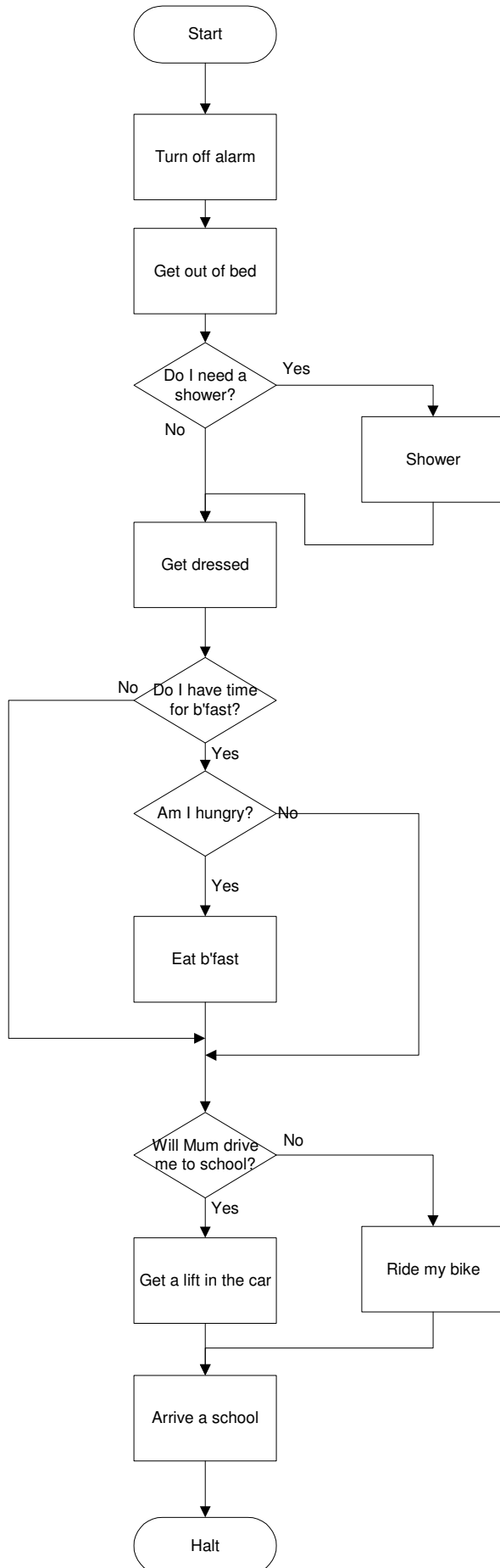
38. What is a *prototype*?

A prototyping approach may be used as part of the overall developmental process and is especially useful in the design phase.

39. When is a *feasibility matrix* used? Describe how to use one.

A feasibility matrix is used to evaluate various alternatives for an overall approach to the development of a new information system. The different options are each compared as far as their operational, economic, technical, scheduling and conversion methods.

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