

DATA FLOW DIAGRAMS

WORKED EXAMPLES

5.1 What is the main merit of DFD?

The main merit of DFD is that it provides an overview of what data flows in a system, what transformations are done on the data, what files are used and where results flow.

5.2 What is the role of DFD as a documentation aid?

It is a good documentation aid which is understood by both programmers and non-programmers (i.e., laypersons). As DFD specifies only what processes are performed and not how they are performed it is easily understood by a non-programming user.

5.3 What is a context diagram?

A diagram giving an entire system's data flows and processing with a single Process (circle) is called a context diagram.

5.4 What do you understand by levelling of DFD?

A context diagram is expanded into a number of inter-related processes. Each process may be further expanded into a set of inter-connected sub processes. This procedure of expanding a DFD is known as levelling.

5.5 What is a physical DFD?

A physical DFD specifies from where data flows and who processes the data and to whom the processed data is sent.

5.6 In what way is physical DFD useful?

It is easy to develop during fact gathering stage of systems analysis. Such a physical DFD is easily understood by a lay user who can verify the DFD drawn by an analyst and tell whether such a DFD corresponds to a particular operation taking place in an organization. Physical DFD is the starting point for developing the logical DFD.

5.7 What are the mistakes in each of the DFDs of Fig. 5.7(a)–5.7(e)? Correct these mistakes.

Fig 5.7(a)

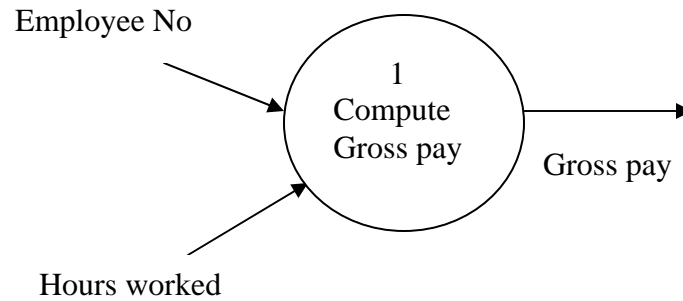


Fig 5.7(b)

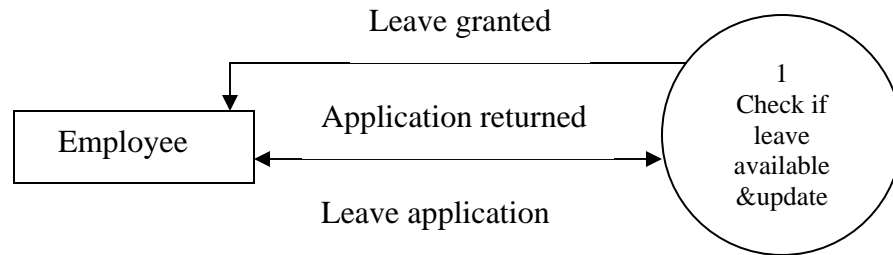


Fig 5.7(c)

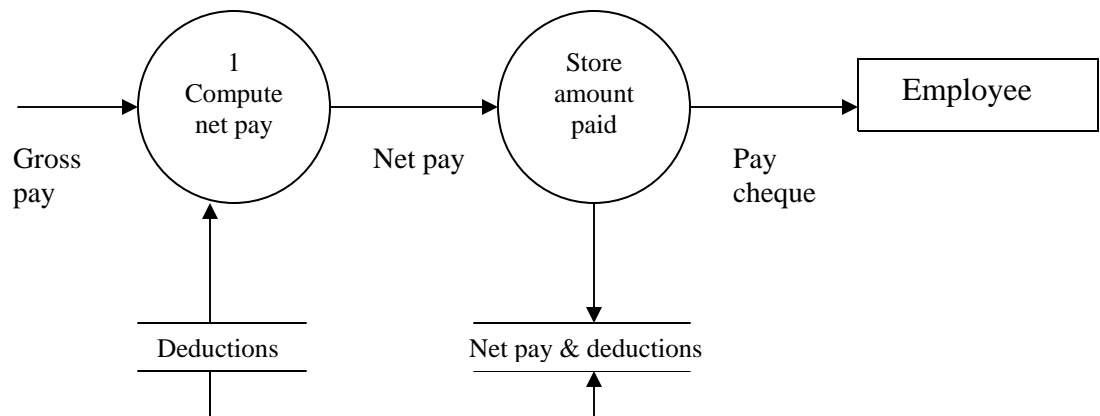


Fig 5.7(d)

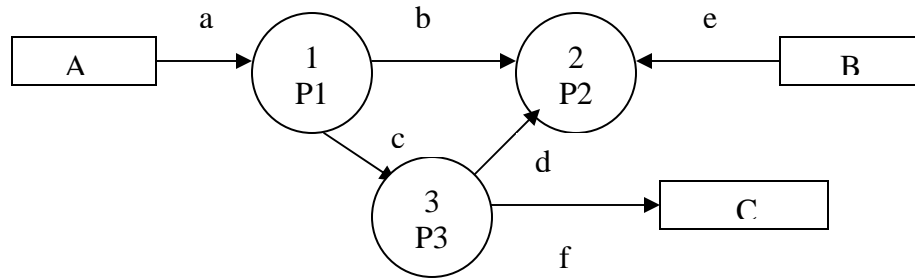
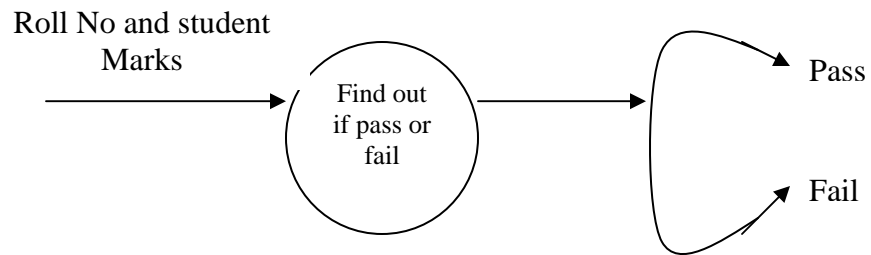


Fig 5.7(e)



- (i) To compute gross pay we need hours worked and hourly wage rate. This data flow is missing.
- (ii) A data flow cannot have two arrows pointing in opposite directions. A separate data flow line should be drawn for “application returned”.
- (iii) A data flow connects two distinct data stores without an intermediate processing step. (See also answer to Exercise 7.5)
- (iv) Process P2 has all input data flow and no output data flow.
- (v) The same data flow cannot be given two names.