

Practical 8

Function -Oriented diagram

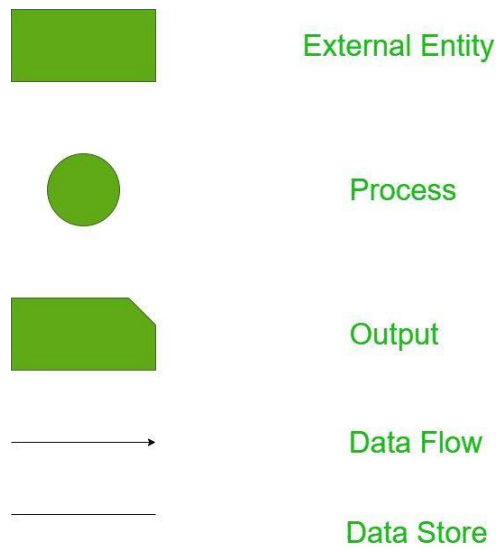
Aim: Design function-oriented diagram for the selected system using Data Flow Diagrams

8.1 Data Flow Diagrams(DFD)

Purpose of Data Flow Diagrams:

A data flow diagram (DFD) maps out the flow of information for any processor system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.

Notations of Data Flow Diagrams:



- Entities:
 - Entities include source and destination of the data. Entities are represented by rectangle with their corresponding names.
- Process:
 - The tasks performed on the data is known as process. Process is represented by circle. Somewhere round edge rectangles are also used to represent process.
- Data Storage:
 - Data storage includes the database of the system. It is represented by rectangle with both smaller sides missing or in other words within two parallel lines.
- Data Flow:
 - The movement of data in the system is known as dataflow. It is represented with the help of arrow. The tail of the arrow is source and the head of the arrow is destination.

8.1.1 Levels of Data Flow Diagrams:

- In Software engineering DFD (data flow diagram) can be drawn to represent the system of different levels of abstraction. Higher-level DFDs are partitioned into low levels-hacking more information and functional elements. Levels in DFD are numbered 0, 1, 2or beyond. Here, we will see mainly 3 levels in the data flow diagram, which are:0-level DFD,1-level DFD, and2-levelDFD.
- 0-level DFD:
 - It is also known as a context diagram. It's designed to be an abstraction view, showing the system as a single process with its relationship to external entities. It represents the entire system as a single bubble within put and output data indicated by incoming/outgoing arrows.
- 1-level DFD:
 - In 1-level DFD, the context diagram is decomposed into multiple bubbles/processes. In this level, we highlight the main functions of the system and breakdown thehigh-levelprocessof0-levelDFDinto sub processes.
- 2-level DFD:
 - 2-level DFD goes one step deeper into parts of 1-level DFD. It can be used to plan or record the specific/necessary detail about the system's functioning.

8.1.2 DFD of Bus Management system

Level 0(Context level diagram)

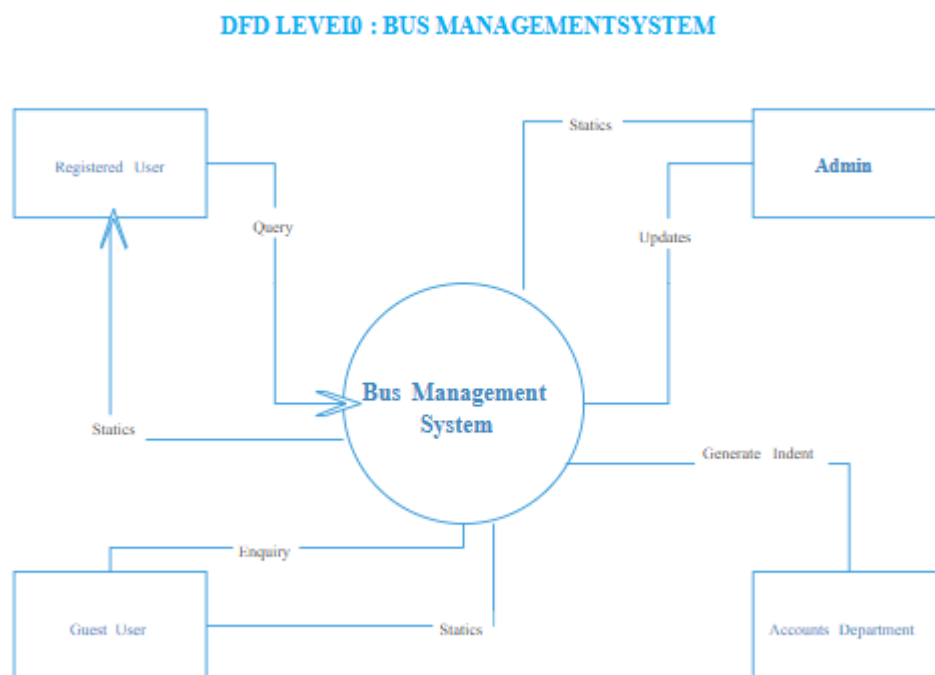


Figure 8.1 Level 0 DFD

Level 1 DFD (Customer)

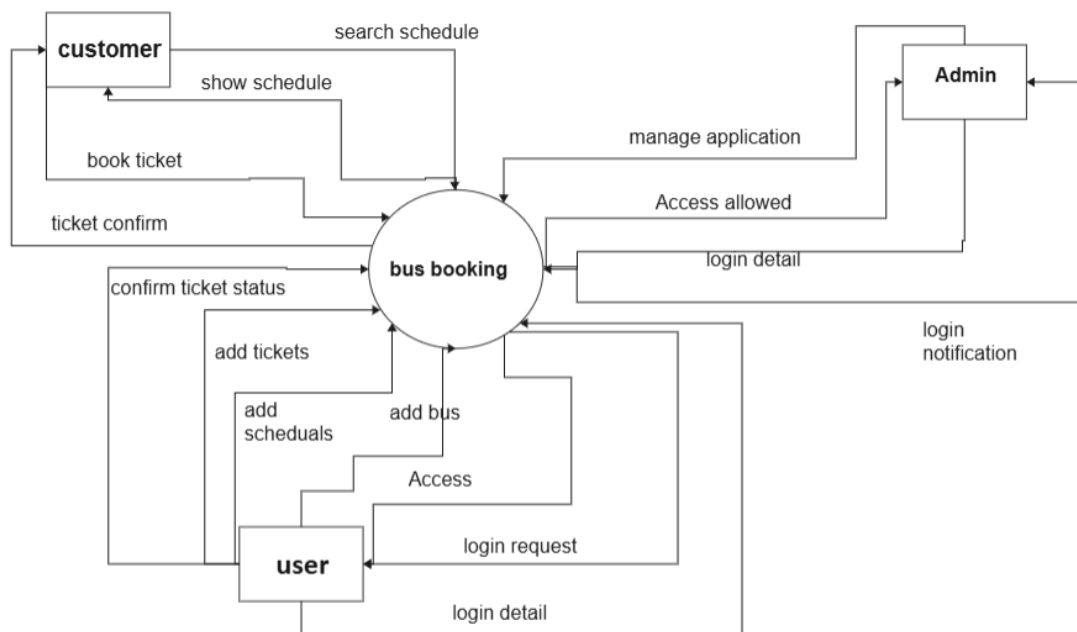


Figure 8.2 Level 1 DFD (Customer)

Level 1 DFD (Admin)

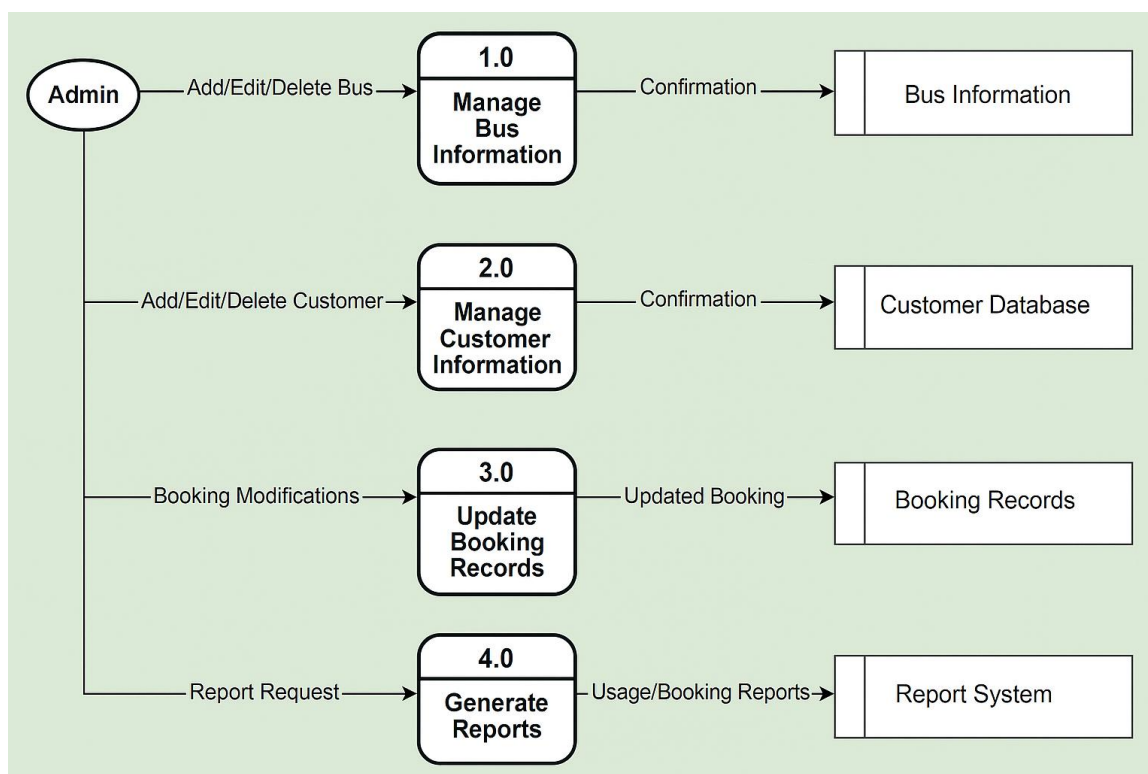


Figure 8.3 Level 1 DFD (Admin)