

1. The business of BM (Books by Mail) corporation is to act as a book jobber. It receives orders for the books to appropriate publishers at a discount; fills the order, on receipt of the books from the publisher. Bills are produced by the computer from the forms filled by BM corporation for payments to publishers and payments received from customers. Since business is running at about 1000 invoices / bills per day, BM requires a new system to upgrade its business.

Arrive at a logical model of this scenario using DFD.

2. Assume that you have been hired to develop a microprocessor based controller for a state-of-the-art elevator system for a high-rise office building. The elevators (n of them) must respond to rider commands for service. Commands include:

- buttons pressed outside the elevator on each floor of the building
- buttons pressed inside the elevator to indicate a destination floor
- an emergency command (generated by fire detection system) that returns all the elevators to the ground floor and disable the system.
- the controller must generate open/close commands and coordinate elevators so that only one idle elevator moves to respond to a request for a service.

Using these commands as a starting point, derive additional normal requirements.

- a) Capture the interactions between controller, elevators and rider as a sequence diagram.

(OR)

- b) Model the behaviour of the system using state diagram.
