Tutorial 3
Business Process Design and Data Flow Diagrams

Objectives*:*
- ■ **Prepare context diagrams.**
- ■ **Prepare data flow diagrams.**
- ■ **Prepare table of entities and activities.**

Discussion Questions:

1. Describe the who, what, where, and how of the following scenario. A customer gives his purchase to a sales clerk, who enters the sale in a cash register and puts the money in the register drawer. At the end of the day, the sales clerk gives the cash and the register tape to the cashier.

2. Why are many correct logical DFD solutions possible? Why is only one correct physical DFD solution possible?

3. *Practical Exercise:*

The following narrative describes the order entry system for the OfficeSupply Company.

OfficeSupply is a wholesale distributor of office supplies, such as disks, stationery, file cabinets, and relate items. Customers receive an updated catalogue annually and place orders over the phone.

When a customer calls in with an order, a clerk asks for the customer ID and name. The clerk keys in the customer number, and the computer retrieves the customer record from the customer database and displays it on the clerk's screen. The clerk compares the customer name to the data on the screen to ensure that the customer is legitimate. If everything checks out, the clerk enters the customer's order. After the order is entered, the computer compares the amount of the order to the available credit to ensure that the purchase does not exceed the credit amount limit.

This results in the creation of an entry in the sales event data store and an allocation of inventory. At the end of the day, the sales event data is processed against the customer data and the inventory data, and the sales order is recorded in the sales order master data store. At the same time a customer acknowledgement is printed in the mailroom and is mailed to the customer. Also, a picking ticket is printed in the warehouse and will be used to assemble the customer's order.

a) Prepare a table of entities and activities based on the process described in the narrative above.
b) Construct a context diagram based on the table you prepared in part (a).
c) Prepare a physical DFD (Data Flow Diagram) based on the output from part (a) and (b).
d) Prepare an annotated table of entities and activities based on the output from Part (a), (b) and (c). Indicate on this table the groupings, bubble numbers, and bubble titles to be used in preparing a level 0 logical DFD.
e) Prepare a logical DFD (level 0 only) based on the table you prepared in part (d).