Tutorial Aims

This week’s exercise aims to further extend your understanding of information systems and the interactions between parts of a business system.

Tutorial Tasks

Task 1: For each of the following fragments of a DFD, write a statement which describes it.

(i) Tutor

(ii) exam result

(iii) available places
Task 2:
Read the following description of part of the operations of a business. You are trying to prepare a logical DFD which shows how a sale is carried out.

(a) go through the description identifying all the processes, data stores and external agents
(b) draw the DFD fragment needed to describe each process
(c) put the DFD fragments together to complete the DFD for the sales process

‘Martin’s Fruit & Vegetable Store’ is a small local fruit and vegetable shop in East Malvern. Customers choose the items they want to buy from the shelves and take them to the sales counter. Martin weighs each item on the scales at the counter. He checks the price per kilogram for the item from a list which he keeps next to the cash register, and keys the weight and price per kilogram of the item (called the unit price) into a small pocket calculator to calculate the price of each item. He repeats this for every item which the customer buys. He writes the details of the sale of each item (item, quantity bought and price per kilogram and total price for item) into an exercise book which he keeps by the cash register. He then uses the calculator to calculate the total price of sale and tells the customer how much they owe. He accepts payment only by cash or on account, with almost all payments being made by cash. He stores the money given by the customer in the cash register. If the customer does not have the exact money, he calculates the change owing and gives it to the customer. Hardly any customers want a receipt for the sale. If a customer wants a receipt Martin writes the sale details onto a standard receipt form which he keeps in a drawer under the counter. Only a small number of local businesses whom Martin knows very well (restaurants, etc) are allowed to buy on account. Martin has an accounts book which he keeps under the sales counter, in which he records any sales to these customers. At the end of each month, Martin calculates their total bill for the month. He writes the amount owing onto a standard invoice form and gives it to them next time they come in to the shop.
Task 3.

*Draw data flow diagrams for the following situations showing any external agents, processes, data flows and data stores:*

a) In order to prepare the payroll for the XYZ Company, the payroll clerk collects all time sheets for the week, checks them to see that they have been correctly filled in, and then looks up each employee's record in turn to find their rate of pay and deductions. She then calculates the gross weekly earnings and the net pay, writing up a pay slip to record all this information. At the end of the process, she places the money in a named envelope along with the pay slip.

b) Airline reservations are performed by reservation clerks who ask the customer the destination and departure date for their trip. The clerk then uses this information to look up the flight file for a flight which is most suitable and has spare seats. The customer chooses the flight and states their preferred class of seat (e.g., economy, first class etc.). The clerk requests the number of seats required which the computer system then updates on the flight master file.

c) *Each year the Alumni Association of a university sends subscription renewal notices to all its members which includes their names and addresses as well as their subscription rate. Members who have not paid their subscription one month after the due date are sent a subscription reminder. Before being sent out, subscription renewals and reminders are sorted into postcode order so that a discount on postage can be obtained.*

Task 4.

**Assignment:**
Discuss assignment and try and identify:

*External agent:*

*Processes:*

*Data flows:*

*Data stores:*