**PRACTICAL No 3 : ( 9 Problems )**

**DATA FLOW DIAGRAMS :**

1. **DFD Practical 1**

Draw a DFD for order processing system conforming to following scenario. Buyer initially fills order details in a blank form and completes it. After validating, the order is recorded and signed order form is sent to the supplier and also the available budget is adjusted as per the order. A budget file is maintained to store order amount and account details, also order details are stored in orders file.

1. **DFD Practical 2**

Create a **DFD** for library system. A client request is first analyzed in a process labeled ‘preliminary processing’. As a result, one of ‘borrow title’ or ‘return title’ is activated. Both these processes update a data store labeled ‘catalog administration’. Client requests are logged in a data store ‘log file’. This data store is used to produce management reports.

1. DFD Practical 3

Draw a **DFD** for depicting the working on an insulin pump. Blood is given as the input, blood sugar sensor senses it and provides the blood parameters for blood sugar analysis. This process checks the blood sugar level and passes in to the insulin requirement computation process. This calculates the required insulin and sends it to delivery controller who then fires some pump control commands and finally the insulin is outputted via the insulin pump.

1. DFD Practical 4

In the following **DFD** there is one basic input data flow, the weekly timesheet, which originates from the source worker. The basic output is the paycheck, the sink for which is also the worker. In this system, first the employee's record is retrieved, using the employee ID, which is contained in the timesheet. From the employee record, the rate of payment and overtime are obtained. These rates and the regular and overtime hours (from the timesheet) are used to compute the pay. After the total pay is determined, taxes are deducted. To compute the tax deduction, information from the tax-rate file is used. The amount of tax deducted is recorded in the employee and company records. Finally, the paycheck is issued for the net pay. The amount paid is also recorded in company records.

1. DFD Practical 5

A **DFD** for the ATM system has two major streams of input data. The first is the account number and the code, and the second is the amount to be debited. The transform "validate," which verifies if the account number and code are valid, needs not only the account number and code, but also information from the system database to do the validation. And the transform debit account has two outputs, one used for recording the transaction and the other to update the account.

1. DFD Practical 6

**Draw a Data Flow Diagram of Correspondence courses given as:**

A college offers correspondence courses to students. Each course lasts 20 weeks and is based on a weekly study module and progress test. At the end of the course students sit an invigilated examination.

The college Registrar deals with enquiries and applications, and students applying who have sufficient qualifications are asked to register by completing and submitting an application form.

After approval by the Academic Director, the application form is returned to the Registrar who creates a student file. The Accounts department receive the application form and using information from the student file creates an invoice that is sent to the student. Payments made are registered on the invoice file. The first batch of student material and tests is issued from the library only to students who have paid fees (this information is taken from the invoice file).

Progress tests are marked by academic staff and the results, together with comments, are sent out with next week’s study block. The library will only issue study material/progress tests when a student has returned test answers from the previous week.

1. DFD Practical 7

**Draw a Data Flow Diagram for the following case: Estate Agency**

Estate Agency case study Clients wishing to put their property on the market visit the estate agent, who will take details of their house, flat or bungalow and enter them on a card which is filed according to the area, price range and type of property. Potential buyers complete a similar type of card which is filed by buyer name in an A4 binder. Weekly, the estate agent matches the potential buyer's requirements with the available properties and sends them the details of selected properties. When a sale is completed, the buyer confirms that the contracts have been exchanged, client details are removed from the property file, and an invoice is sent to the client. The client receives the top copy of a three part set, with the other two copies being filed. On receipt of the payment the invoice copies are stamped and archived. Invoices are checked on a monthly basis and for those accounts not settled within two months a reminder (the third copy of the invoice) is sent to the client.

1. DFD Practical 8

**Draw a Data Flow Diagram for the following case: PIZZA Supreme**

A large pizza business makes pizzas and sells them. The pizzas are manufactured and kept in cold storage for not more than two weeks.

The business is split into a number of functional units. There is Production Control, Manufacturing, Stores, Accounts, Sales, Shipping and Purchasing. Production Control are responsible for organising which pizzas to produce in what order and in what quantity. They need to schedule the production of the pizzas according to the current and expected sales orders together with the number of pizzas already in Stores. Manufacturing take the raw materials from the Stores and manufacture pizzas returning the completed goods to the Stores. Accounts deal with the payments for the pizzas when delivered to the customer and the payment to the suppliers of the raw materials. Sales deal with customer orders whilst Purchasing organise the buying of raw material from suppliers. Shipping manage the packing and delivery of the goods to the customer with a delivery note.

When a sales order is received by sales they record what is being ordered and by whom. They also record the details of the expected date of delivery. Production Control access this information and make sure that, if required, pizzas are produced by Manufacturing and are ready in Stores for when the delivery needs to be made.

After the delivery is made Accounts make sure that the customer receives an invoice and that payment for the invoice is received at which time a receipt is issued. Purchasing look at the current stock of raw materials and by using current stock levels, supplier turn around times and quantity to be ordered decide what needs to be ordered on a daily basis. Their aim is never to run out of an ingredient but to minimise the amount of raw material kept in stock.

1. DFD Practical 9

**Draw a Data Flow Diagram for the following case:**

Video-Rental LTD case study Video-Rental LTD is a small video rental store. The store lends videos to customers for a fee, and purchases its videos from a local supplier. A customer wishing to borrow a video provides the empty box of the video they desire, their membership card, and payment – payment is always with the credit card used to open the customer account. The customer then returns the video to the store after watching it. If a loaned video is overdue by a day the customer's credit card is charged, and a reminder letter is sent to them. Each day after that a further card is made, and each week a reminder letter is sent. This continues until either the customer returns the video, or the charges are equal to the cost of replacing the video. New customers fill out a form with their personal details and credit card details, and the counter staff give the new customer a membership card. Each new customer's form is added to the customer file. The local video supplier sends a list of available titles to Video-Rental LTD, who decide whether to send them an order and payment. If an order is sent then the supplier sends the requested videos to the store. For each new video a new stock form is completed and placed in the stock file.