Essential Skills – Lesson 37 and 38

The following case study is based on Harry's Top Fuels Co. Complete the steps as described at the end of the case study.

Harry's Top Fuel Co. is an oil delivery company set up in the St. John's area. All data is currently stored on paper records, and Harry feels that a computer would make the job much easier. In a meeting with Harry, you make the following notes to help in the process.

As each customer registers an account with Harry, the information is entered by a clerk and stored in a Customer File. Every customer must be set up with an account number (which will be their phone number), their name, their full mailing address, a home phone number and a cell number, the current balance owing, the date of the next oil delivery – based on automatic delivery, and the date of the next furnace inspection – this is performed when a new client is added to the system, and then set up once per year after that.

If a customer calls the office for servicing – for either repair service, oil fill, or furnace inspection - the information must be recorded so that a service call can be put out. Information is saved to a Call File and includes the customer account number, the date of the phone call, the time of the phone call, and a brief description of the problem/service. Service Request Sheets are printed for each call and each evening they are organized based on the type of call and placed in slots for the appropriate technicians. **NOTE:** based on the date of the next oil delivery or next furnace inspection in the Customer table, entries may be made to the Call File automatically if we are within 5 days of the automatic fill or inspection. How can this be implemented?

At the end of the day, all Service Request Sheets - for services, oil deliveries and inspections - are returned to the office. All information is taken from the Service Request Sheet and, using the information from the Call file, all orders are processed and saved to a Service Invoice File. The Service Invoice File includes the customer account number, the date of the call, the technician who completed the call, and each product / service provided including the product service number, the product / service name, the cost of the product / service, and the quantity (Note that for services the quantity is recorded as 1 and for oil fills the quantity will be the number of litres delivered). The end of the invoice will display the Subtotal, the HST, and the invoice total. The balance due in the customer file is also updated based on total cost of this service call. The record is removed from the Call File. The customer invoice is printed and mailed to the customer.

When a customer sends in a payment, information is to be entered and saved to a Payment File. Data to be saved include the customer account number, the payment date, the payment method (Cash, Cheque, Debit or Credit Card), and the amount of the payment. Again, the balance due in the customer file is updated based on the payment made.

Finally, the company needs a monthly customer statement be printed. Using information from the Customer File and the Service File, customer statements are generated at the end of each month and mailed out to the customers. The information should be available in the Customer, Services and Payments tables. Nothing to do here but you should be able to visualize where the information for the statements is coming from.

1. Start the ERD for the system concentrating on the **Customer table**. Design a **Customer Listing** with the information required to contact customers as needed. Also design an **Oil Delivery Report** based on all oil deliveries due in the next 7 days and a **Furnace Inspection Report** based on inspections due in the next 7 days.

2. Continue the ERD with the information required for the **Call Table** – basically for appointments that are scheduled for repairs, oil deliveries and furnace inspections. Design the **Call Sheet** which contains information for the call on the top of the sheet, and has space left on the bottom of the sheet for the technician to write in any information about the call or parts used.

3. Continue the ERD with information for the **Parts and Services Table** (all parts and services will be assigned a number – services do not include quantity values – also keep track of the number of each part or service for the current year. Also create the **Service Invoice Table**. Remember that there may be multiple parts and services on an invoice. Design the invoice that will be printed and sent to the customers.

4. Finish the ERD with information for the **Payments Table**. Design a **Payments Listing** that displays information about the payments made between the two dates that will be entered.

5. Finally, design the report for the **Monthly Customer Statement** that is sent to the customer at the end of each month with their outstanding balance and a list of all parts and services for the month.

6. Identify a few additional fields that could be included in the tables, or another table that could be implemented into the system. Also think of another report or two that could be used by the system and design at least one of them.

See you at 10.