



# *7<sup>th</sup> International Abilitympics*

## *Vocational Skills Contest*

### **V7. Data Processing - Advanced Course**

#### **1. Task**

Contestants shall create a database by processing each of the following seven tasks according to the DFD (Data-Flow-Diagram) to be explained in sections 7 and 8 below, and whether each database functions properly will be evaluated.

- Task 1 Order entry processing: Processing of data for receiving orders from customers
- Task 2 Credit control processing: Processing of data for checking the monetary amount upper limit for orders received from customers
- Task 3 Inventory inquiry processing: Processing of data for checking the inventory of the merchandise ordered by customers
- Task 4 Sales data processing: Processing of data for sales of in-stock merchandise
- Task 5 Shipment processing: Processing of data for issuing invoices to customers and shipping the merchandise to them
- Task 6 Reduction processing: Processing of data for correcting (reducing) the inventory count of delivered merchandise
- Task 7 Inventory processing: Processing of data for ordering low-inventory merchandise from suppliers

<Note>

1. The minimum number of data pieces required for each table will be provided on the day of the contest.
2. The name of each file containing data, such as tables, queries, forms, macros, and reports, will be provided on the day of the contest.

#### **2. Allocated time**

3 hours

#### **3. How to present the completed work**

Contestants shall store their completed work (or uncompleted work if not finished) in an external USB memory and submit it. Note that the USB memory containing the work will be collected by the contest officials immediately after the allocated time has ended.

#### **4. Instructions**

- Contestants may prepare and bring the definition and specifications of each table and various kinds of virtual data on paper media, but are not allowed to bring them stored on digital media.
- A contestant who has trouble with one of the pieces of equipment used shall follow the instructions given by the judge.
- Contestants must notify the judge when they finish the task.
- The chief judge will determine the seating position of each contestant in advance.

<Note>

Contestants who need special assistive technology/device (hardware and software) shall notify the secretariat in advance. In principle, such contestants should bring it into the contest site during the orientation session and install/attach it in the presence of judges.

No special consideration will be given if there is any trouble with installed/attached technology/device

## **5. Software, etc., to be prepared on site**

- a. OS : Windows XP
- b. Apl. : MSAccess XP or MSAccess 2003 (In principle, data other than AccessVBA that can be automatically generated by macro function, etc., shall not be used)
- c. PC: DOS/V
- d. USB memory: 32MB or more

## **6. Specifications**

- a. The objective is to check whether the functions specified in the DFD are realized, and contestants should determine what kind of merchandise they would handle.
- b. Contestants shall first define the tables required, such as the order entry table, credit control table, merchandise table, and inventory table, and prepare the customer data required for credit control and the data for the merchandise to be handled. Contestants may bring into the site such virtual data stored on paper media but are not allowed to bring it on digital media.
- c. Contestants shall create queries, forms, and reports according to the following processing procedures [1] to [7] with reference to the example shown in (b) above.

Example 1: The credit control table requires at least a customer code, customer name, term of credit validity, credit number and amount of credit (here the amount limit per transaction).

Example 2: Contestants shall prepare virtual data, such as order data, customer data, merchandise data, and stock data, on the assumption that they are the store owner.

### [1] Procedure for order entry processing

This procedure is to process data for receiving orders (order entry data) for merchandise (ordered articles) from customers. The relevant customer data and received order data shall be entered in the “order entry form” screen. The sales price shall be calculated based on inquiry of the ordered merchandise price from the merchandise table and the ordered volume.

### [2] Procedure for credit control processing

This procedure is to check the customer data in the order entry table against the credit control table containing the previously prepared customer information, and to approve it if the amount of the received order is within the credit limit. Whether or not credit is approved or not shall be displayed in a form as a truth-value to evaluate the result of the expression. The credit limit shall be the limit for the amount of the received order and shall not be renewed.

### [3] Procedure for inventory inquiry processing

After the approval as specified in procedure [2] is given, an inventory inquiry shall be made. Based on the received order data, the inventory table shall be checked and if the corresponding merchandise is in stock, then the volume of the merchandise in stock shall be compared with the ordered volume, and if the minimum required remains in stock,

approval shall be given. This process shall also be displayed in a form as truth-value to evaluate the result of the expression. In the case of disapproval, proceed to procedure [7] for processing of the inventory update.

[4]: Procedure for sales processing

Based on the order entry table and the merchandise table that are approved during procedure [3], a sales query shall be created and while the sales date, delivery and billing date, etc., are added, the data shall be sorted in the order of customer code, and a sales list report shall be created. The process of creating the report shall be defined as a macro.

[5] Procedure for shipping processing

Based on the sales table created in procedure [4], an invoice report shall be created and a shipment request form shall be displayed. This process shall also be defined as a macro.

[6] Procedure for reduction processing

Based on the sales table and inventory table, the common merchandises shall be displayed in a form and the inventory volume of the merchandise sold shall be corrected manually.

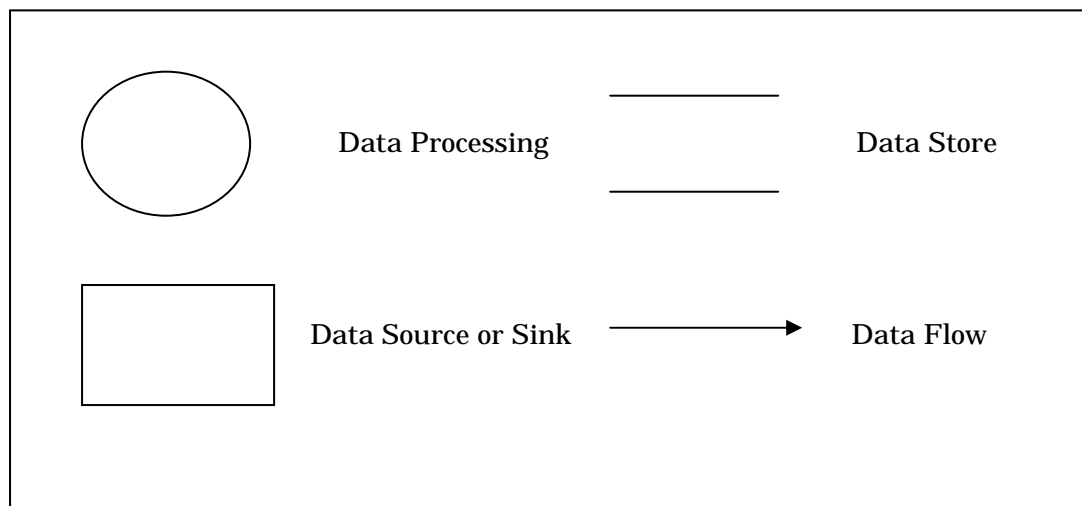
[7] Procedure for processing inventory data

A truth-value to show an inventory shortage when the inventory volume is less than the minimum required shall be displayed in a form. In that setting, the minimum required volume shall be set for each type of merchandise. For the merchandise that is running short, an order placement table shall be created based on the merchandise table and inventory table while adding the order amount. Based on this order placement table, an order placement report shall be created as a macro. When the order placement report is created, the inventory volume in the inventory table shall be updated as if the ordered merchandise has been delivered by the supplier. This process shall also be defined so that it can be done in a form. After the inventory has been updated, return to procedure [3] to continue processing the ordered merchandise for which the inventory was low.

[8] The procedure for payment and shipment will be omitted.

## 7. Design guideline

The diagram definition for showing the design process using the DFD (Data Flow Diagram) is shown below.



“Process” means an operation to process input data.

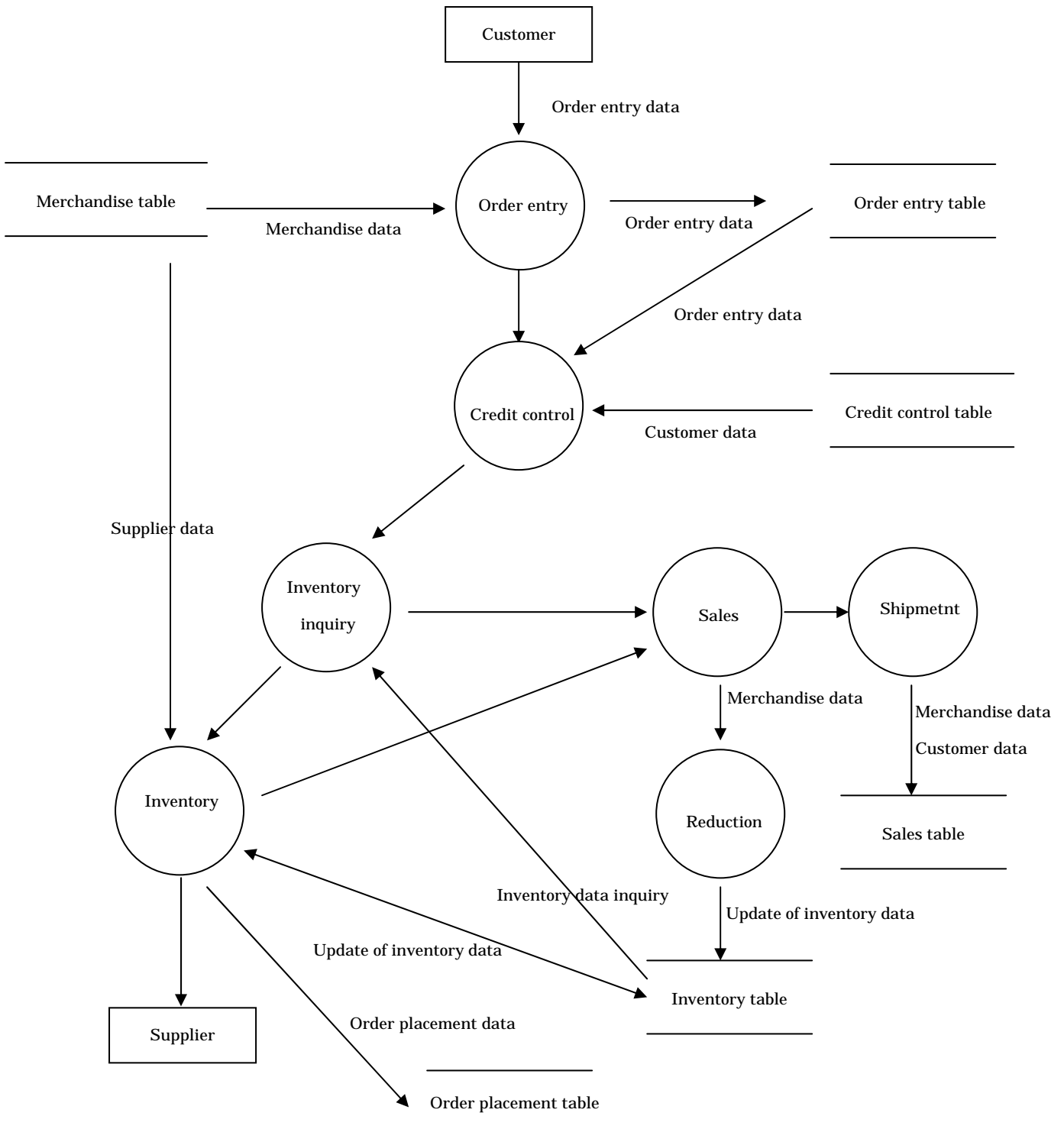
“Source” refers to a source from which data is generated.

“Sink” refers to a location where data is sent.

“Store” refers to a location where data is temporarily or permanently stored.

“Flow” means a flow of data.

## 8. DFD Chart



## 9. Evaluation criteria

The skills of each contestant will be assessed based on the final work produced.

Items to be evaluated	Maximum marks allotted
Order entry processing	20
Credit control processing	10
Inventory inquiry processing	15
Sales processing	15
Shipping processing	10
Reduction processing	10
Inventory processing	20
Total marks	100

<Note>

1. The evaluation criteria is subject to further additions and amendment.
2. Since additional information may be provided based on the questions concerning this task, contestants are requested to make appropriate follow-up by checking the website periodically.