

AS91892 Use advanced techniques to develop a database Assignment

Brief

You are required to design a multi-table database table according to specifications issued by a client. The database is meant to keep record of stock that is being held by a supermarket. It is to consist of three tables: manufacturer, department and stock.

The manufacturer and department tables will act as reference sources for the stock table.

The specification for the tables are shown below.

Manufacturer table

ManufacturerID: This will consist of 5 numeric digits. The digits, however, will not be mathematically manipulated. It will be the key field for the table.

ManufacturerName: The name is self-explanatory, the name of the company which produces a particular product. It is a text field

ManufacturerAddress: Another text field. Name of a town/city or Street is sufficient.

Name it Manufacturer

Department table

DepartmentID: This will consist of 5 numeric digits. The digits, however, will not be mathematically manipulated. It will be the key field for the table.

DepartmentName: A text field containing the name of the department within the supermarket.

HeadOfDepartment: A text field containing the name of the person in charge of the department.

Name the table 'Department'.

Stock table

Barcode number: This consists of 13 numeric digits. The digits, however, will not be mathematically manipulated.

Description: This is a simple description of the item that would appear on the item's package or label. "Baked Beans" would be an example.

ManufacturerID: This will be the foreign key for the table manufacturer. For this reason it must be the same type and size as the key field of the Manufacturer table.

DepartmentID: This will be the foreign key for the table department. For this reason it must be the same type and size as the key field of the Department table.

Wholesale Price: What the supermarket paid for the product.

Retail price: What the customer is charged for the product. This must be a value between 0.8 and 25.

Amount in stock:

Reorder level:

Reorder amount:

Amount sold:

(The four data items directly above are meant to be integer values.)

Facilities must be provided for adding, browsing, modifying and deleting data.

Table Design

Three tables must be designed according to the above specifications. Names must be compatible with database standards as well as for user-friendly display.

Forms

Although data entry and modification for the tables Manufacturer and Department can be performed using only the table structure itself, data entry and other processing for the Stock form must be done using separate forms for adding, editing, browsing and deleting data. The forms must be designed to provide positive user experience and must be compatible with Human-Computer Interaction guidelines.

Queries

General Query

By appropriately using keys and foreign keys to link data in the tables Stock, Manufacturer and Department create a query that shows the description of a stock item, name of its manufacturer, name of the Department within the supermarket and its retail price.

Simple Filtered Query

This query will be the same as the General Query but will be filtered on a single manufacturer or a single department within the supermarket.

AND Query

This will contain the same data items as the general query but will be filtered on both a single manufacturer and a single Department.

OR Query

Again this will contain the same data items as the general query but will be filtered on two manufacturers and/or two departments.

Calculation Query

This query will contain the description of the item, name of manufacturer, retail price and amount sold. It will also contain a calculated field named TotalSales. The value of this field will be the product of the retail price and the amount sold.

Report

Create a report based on the calculation query above. All fields of the query are to be shown and the report is to be grouped on the manufacturer name. Appropriate subtotalling and formatting is to be applied

Marking scheme

Tables linked through primary key – foreign key relationship	A	
Data for manufacturer and department in stock table limited to data in tables	A	
Invalid data for retail price and barcode number rejected.	A	
Processing of stock data done using specialised forms	A	
Intellectual property issues addressed	A	
General Query works correctly	A	
Simple filtered query works correctly	A	
AND query works correctly	A	
OR query works correctly	A	
Forms fully compliant with HCI requirements including buttons	M	
Calculation query works correctly	M	
Report displays query's contents	M	
Report correctly grouped	M	
Report contains subtotals and grand total	M	
Groups within the report have both headers and footers	E	
All levels within the report have custom formatting	E	
Data is correctly aligned with headings	E	
Subtotals and grand total are formatted as currency and have descriptive labels	E	
All functionality accessed through the main form	E	
Consistent styling applies to all forms and report	E	