RMIT University

SCHOOL OF AISSC

Business Data Management and Analytics

Assignment 2b – Data Model

Due Date: End of Week 12

SPECIFICATIONS

Read the following Case study carefully. You will be asked to create a data model, that is free from anomalies and therefore complies with being in third normal form.

CASE STUDY

Some of your friends want to set up a new web site to sell custom made T-Shirts to the public. Rather than stock a range of pre-made t-shirts, they will make the t-shirts individually to order and hopefully fill a special demand in the clothing market that is not currently met. Their competitive advantage will be the use of automated machines and 3D printers to create these custom made T-Shirts. The business will be called myTShirt. They have asked you to design a database to be used by the website to keep details of the products and options available, and to record orders that are received from customers via the web site.

The basic product they will sell will be, obviously, t-shirts. They will have different styles of t-shirts – some styles will be tight, others loose and they may also sell polo tops as another type (The intend to add more tshirt types in future). As well as different styles of t-shirts there will also be different colours that customers can choose from. The t-shirts come with various type of sleeve, but mainly long or short. They will have a large range of images, logos etc that can be printed on the t-shirts. The images/logos can be custom uploaded and the customer can decide what sort of material to use to print it onto t-shirt, this may include various inks (colour) - sprayed, plastic – 3D printed, cotton – embroidered. If text is chosen to be placed on t-shirt, the material required is important, but will need the colour, font, size and text to be recorded. The database will need to store all these details so customers can be presented with all the choices when placing an order.

When customers place an order, the order details will need to be stored into the database, as well as details of the customer. Naturally this will include details such as name, address and phone number. For each order they can order multiple t-shirts. For each t-shirt, they will be allowed to choose:

- The style of the t-shirt
- The sleeve configuration

- The colour of the t-shirt
- The size of the t-shirt
- The text/image/logo to be printed
- The material used for t-shirt
- The material used for the text/image/logo

It is extremely important to store the data in a structured format, because it will be used to send directly to the automated T-Shirt create equipment to be instantly created and shipped.

Customers will be required to pay before the products are sent so details will need to be kept of the payment. Your friends are planning to accept payment by credit card, direct bank deposit and paypal. For credit cards they need to store the credit card number and expiry date, for direct deposit they need a field to tick off that the payment has appeared in their bank account and for paypal they again need a field to tick off plus the paypal user id of the payer.

Example:

Sample T-Shirt	T-Shirt Attribute	Data
	Type: Shirt_Material: Sleeve: Shirt_Colour: Extras: Extras_Material: Extras_Font Extras_colour Size:	Standard Cotton Short White Text "YOUR DESIGN HERE" Ink 48 Time New Roman Orange XL
	Type: Shirt_Material: Sleeve: Shirt_Colour: Extras: Extras_Material: Extras_Font Extras_colour Size:	Standard Leather Short Black M

REQUIREMENTS – DATA MODEL

Create an ER diagram, relational model and any business rules or assumptions made.

REQUIREMENTS – SQL IMPLEMENTATION

Provide the SQL commands to create the data model

- Create tables statements
- Insert approximately five rows into each table if applicable

Also provide several business question and SQL queries to test out the tables created, include at least these types of queries:

- SELECTION condition query
- GROUP BY query
- JOIN query
- NESTED query

Also create a least one visualisation of the data using Orange, Tableau or Excel.

ASSESSMENT

Assessment of the data model will be based on the following areas (by the tutor) as per the rubric found on the CANVAS submission system:

- Data Model
- No anomalies
- Dependence of all attributes to the whole primary key
- Must be in third normal form (3NF)
- SQL Queries
- Appropriate implementation of data model using SQL (CREATE TABLEs & INSERTs)
- A number of business questions (of your design) + SQL Query solution (SELECTs)
- Visualisation appropriateness to the business question (of your design)

SUBMISSION

- submit a ER diagram (attributes are optional)
- submit a Relational Model (**separate from the ERD**)
- submit any Business Rules or Assumptions made
- submit all SQL commands, if attempting the higher level component
- submit visualisation, as a screen dump, if attempting the higher level component
- Assignment will be submitted online using the CANVAS learning hub.
- Please submit the assignment file (it can be a Word or Pdf document)