

Project Deliverable 1 (30 pts)**Due: 9th May 10PM**

Note: Requirements given below from 1.0 to 3.0 are for **Single person teams**.

Two (more than 2 people per team **not** accepted) people teams should, in addition to requirements from 1.0 to 3.0, should implement requirements in 3.1.

1.0 Introduction

You are commissioned to design and implement a **Sales Management System** for **FunnyTot**, a **ComicBook** store that sells children's vintage comic books online. The Sales Management System uses a Relational Database to maintain the sales and customer records and the support the queries.

You are required to implement the system using an Oracle database management system.

The store sells vintage **comic books** and other items like **T-shirts** online. Comic books and T-shirts are considered **StoreItems**. A **comic book** may have 0 or more copies.

All **StoreItems** have an *ItemId* (**unique**) and *price*. Each comic book has an *ISBN* (unique), *title*, *publishedDate* and *no. of copies*. Each copy will have its own unique number. A T-shirt will have a *size*.

A **Customer** can be a Regular Customer (*Custid*, *name*, *phone/email*, *address*) or a **Gold Customer**.

A **Gold Customer**, in addition to having all the attributes of a customer, also has an additional attribute, *dateJoined*. A GoldCustomer pays an annual fee and does not have to pay the shipping fee on her/his orders.

A Customer (or a Goldcustomer) orders StoreItems and an **ItemOrder** (**Note: order by is a SQL key word**) contains the *orderid* (unique), *custid*, *itemid*, *date of order*, *no.ofItems*, *shippedDate*, *shippingFee*.

Each customer's order includes a flat rate of 5% tax (for all customers) on the order total.

GoldCustomers have no shipping fee and 10% discount on an order of \$100.

1.1 Constraints to be enforced:

- a) The custType of a customer can be of only one of the two values, namely, 'regular', or 'gold'.
- b) Phone (or email) must be unique and not null.
- c) The no.of copies of a ComicBook cannot be < 0.
- d) The no. of copies of any book ordered cannot be more than the available no. of copies of that book.
- e) The shippedDate cannot be less than the OrderedDate.
- f) When a regular customer orders books, the shipping fee is \$10. Before the books are shipped (ie. the shippedDate is null), if the custType of that customer changes to 'gold', then the shipping fee must be changed to 0 on all orders that are not shipped yet.

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A detailed, conceptual design using the **E-R model** (in pdf format) should be included, showing the entities, relationships, cardinalities and integrity constraints. Any diagramming tool may be used, but a detailed legend to identify the notation used, should be included (you may be given recommendations for an automated tool). A hand-drawn diagram is acceptable if it is clear and legible.

If you use a tool, please capture the image and add it to a pdf document.