

## CSE 4508 (Winter 2023)

### Lab 9

#### Task 1 :

Briefly mention the differences between a PL/SQL procedure and a function.

#### Task 2 : Grocery Management System

You need to create a database to manage memberships, discounts for a grocery. The database should store information about members, employees, products and purchases. Here is a simplified schema:

Tables:

Members:

- member\_id (Primary Key)
- name
- phone
- email
- discounts

Employees:

- employee\_id (Primary Key)
- name
- job\_title

Products:

- product\_id (Primary Key)
- name
- price
- description

Purchase:

- purchase\_id (Primary Key)
- employee\_id (Foreign key referencing Employees table)
- member\_id (Foreign key referencing Members table)

- product\_id (Foreign key referencing Products table)
- quantity

Data:

Populate the tables with sample data for members, employees, products and purchases.

- Create sequences for auto-generating primary keys for Members and Employees tables.
- Implement a membership discount system for the Grocery. Members should be awarded discounts based on their total spending on products. The system should work as follows:
  - Members earn a \$0.1 discount for every \$10 spent on any product.
  - Associate a trigger which will update the discount column of a member after every new purchase by that member.
  - Design and implement a PL/SQL function, which will take purchase id and member id as input parameter. And after that it will update the discount (column of Members table) according to the bill.

Now for simplicity we assume members can purchase only one product per purchase (but can purchase multiple items of that one product like six shampoos but can only buy shampoo per purchase). That's why we have a quantity column in the Purchase table to track how many of the same product our customer is purchasing. To calculate the bill we do this,  $\text{quantity} \times \text{price}[\text{Products table}]$ .

Let's say the actual bill is \$80 and the member has a discount of \$15.6, then after executing the pl/sql function, the bill will become \$64.4 and the member has a \$0 discount. So every time we run this function it will use all the discounts our member has. There's a corner case like, bill is \$10 and the member has a discount of \$15.6, then after the update the bill will become \$0 and the member has a \$5.6 discount remaining. Remember, the function will only update discount nothing to do with the bill.

- Write a PL/SQL block that uses explicit cursors, to print the name of the member who has spent the highest money and print the top 2 products he has purchased (according to quantity) and also the names of the employees who helped him to purchase those 2 products.