ASIA PACIFIC INSTITUTE OF INFORMATION TECHNOLOGY

IN COLLABORATION WITH

STAFFORDSHIRE UNIVERSITY UK

BSc / BEng (Hons) in Software Engineering





**Individual Assignment**

**CB005916 [IF15A1SE]**

**Sasith Koralagoda**

**CE00856-2- Database System**

**Instructor:**

Miss. Malsha Fernando

**Word count**

3281

Acknowledgment

The success and final outcome of this report required lot of guidance from many people. Therefore I extremely thank to that people, especially our lecturer Madam. Malsha Fernando. Our lecturer provide us knowledge and energy for complete this report well that how I hope.

I would like to thank who guides me at every step and every aspect of this assignment. And my father always support me to do every work clearly and correctly. So I would thankful to my father.

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Introduction

This report is based on a company called RLD (Rich look design) which deals with manufacturing and selling different types of garments. There are 18 retail shops in total, 2 in the western province and 1 each in the remaining 8 provinces. Each warehouse and retail shop has a separate manager, in addition each retail shop has 2 sales persons and each warehouse has 2 workers. There are several suppliers for RLD, who supply thread, buttons, cloth and etc. The warehouse store raw materials and finished garments.

The garments are sold to customers via retail shops. Customers can classify as either ‘Normal’ customer or ‘Loyal’ customers. A normal customer can obtain a loyalty card from any retail shop. The company also sends a birthday card to the senior citizen customers as a kind gesture.

In this case study the author is supposed to generate a detailed set of Data Base design requirements. The design is implemented including entity relationship diagrams, values and SQL queries for the given scenario.

To complete this, the author has used a software development life cycle, entity relationship diagram, SQL statements and normalization to organize the data in a prescribed manner.

# Software Development Life Cycle

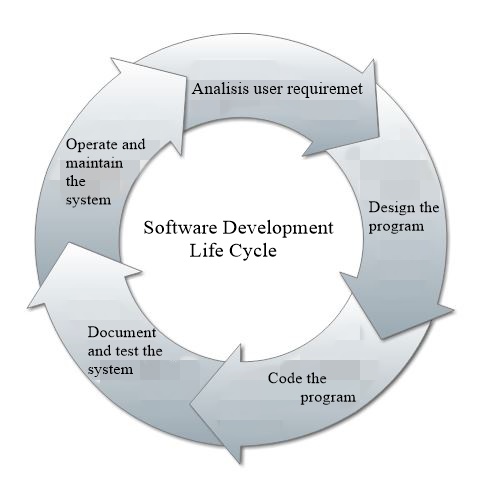
Software development life cycle is a process that describes plan for good software build. It consists of a detailed plan describing how to develop, maintain, replace and enhance specific software. There are typically five steps starting with the analysis and requirements gathering and ending with the implementation.

Figure 1: SDLC (Author's work)

* Analysis user requirement-

This is critical to the success of the project. Author needs to know expectations of the program.

Technical design requirements are prepared in this step by lead author.

* Design the program -

This step is the actual coding and [unit testing](https://www.slideshare.net/assembla/assembla-airbrake-webinar-production-monitoring-and-continuous-delivery-may-2013) of the process

* Code the program -
* Document and test - the system

Once the application is migrated to a test environment, different types of testing will be performed including integration and system testing.

* Operate and maintain - Author’s need to describe how to operate to user and need to do update.   (Airbrake.io)

# Design Requirements and Assumptions

# 2.1 Design Requirement

Firstly need to identify the prototypes of the system scenario. Next step is creation of entity relation diagram. It wants to include correct relationships between tables. Then ERD redesign with foreign keys from logical mapping. Next step is normalization from ERD tables. After create database need to create tables according to normalized tables and insert values to relevant table. Finally queries can implement.

2.2 Assumptions

* One garment must store in many warehouses and one warehouse must be store by one garment.
* One supplier must sell to one warehouse and one warehouse must be selling by many supplies.
* One warehouse must supply many retailshop and one retailshop must be suppling by one warehouse.
* One Employee must work in one warehouse and one warehouse must be worked by many employees.
* One Employee must work in one retailshop and one retailshop must be worked by many employees.
* One retailshop must issue many invoice and one invoice must be issued by one retailshop.
* One invoice must receive to one employee and one employee may be received by many invoices.
* One invoice must receive to one customer and one customer may be received by many invoices.
* One employee may become one customer and one customer may be become by many employees.
* One customer may become one loyal customer and one loyal customer must be become by one customer.
* All attributes which hold price are subjected to be LKR.
* There are 10 retail shops that 2 in western province and others are in remaining 8 province

# ER diagram

Figure 2: ER diagram (Author’s work)

# Functional Dependencies

## Warehouses table

Warehouse\_id Geopraphical\_province, City

## Suppliers table

Rowmeterial\_id Rowmeterial\_name

## Retail\_shops table

Retailshop\_id Province, City

## Employees table

Employee\_id Loyalcustomer\_id

## Customer table

Customer\_id, Customer\_password

## Loyal\_Customer table

Loyalcustomer\_id Customer\_name, Customer\_address, date of birth, Customer\_id

# Normalization

## UNF

Garments (garment\_id, garment\_type, garment\_color, garment\_design, retail\_price, garment\_size, sale\_items ) Warehouses (warehouse\_id, geopraphical\_province, city, garment\_id[FK]) Suppliers ( rowmeterial\_id, rowmeterial\_type, rowmeterial\_name, cost\_price, no\_rowmeterial, total\_costprice, reorder\_date,warehouse\_id[FK])

Retail\_shops (retailshop\_id, province, city, garment\_catagory, warehouse\_id[FK]) Invoice( invoice\_no, noof\_items, total\_price, date, cutomer\_id[FK], employee\_id[FK], retailshop\_id[FK] ) Employees (employee\_id, employee\_name, employee\_position, employee\_office, work\_city, work\_province, retailshop\_id[FK], warehouse\_id[FK], customer\_id[FK])

Customer (Customer\_id, Customer\_password) Loyal\_Customer ( loyalcustomer\_id, customer\_name, customer\_address, date of birth, gender, Customer\_id[FK])

1NF Garments (Garment\_id, Garment\_type, Garment\_color, Garment\_design, Garment\_size) Garment\_details(Garment\_id, Retail\_price, Sale\_items) Warehouses (Warehouse\_id, Geopraphical\_province, City, Garment\_id[FK]) Supplier\_meterial(Rowmeterial\_id, Rowmeterial\_type) Suppliers ( rowmeterial\_id, rowmeterial\_name, cost\_price, no\_rowmeterial, total\_costprice, reorder\_date,warehouse\_id[FK])

Retail\_shops (retailshop\_id, province, city, garment\_catagory, warehouse\_id[FK]) Invoice( invoice\_no, noof\_items, total\_price, date, cutomer\_id[FK], employee\_id[FK], retailshop\_id[FK] ) Employees (employee\_id, employee\_name, employee\_position, employee\_office, work\_city, work\_province, retailshop\_id[FK], warehouse\_id[FK], customer\_id[FK])

Customer (Customer\_id, Customer\_password) Loyal\_Customer ( loyalcustomer\_id, customer\_name, customer\_address, date of birth, gender, Customer\_id[FK])

2NF

Garments (Garment\_id, Garment\_type, Garment\_color, Garment\_design, Garment\_size) Garment\_details(Garment\_id, Retail\_price, Sale\_items) Warehouses (Warehouse\_id, Geopraphical\_province, City, Garment\_id[FK]) Supplier\_meterial(Rowmeterial\_id, Rowmeterial\_type) Suppliers ( rowmeterial\_id, rowmeterial\_name, cost\_price, no\_rowmeterial, total\_costprice, reorder\_date,warehouse\_id[FK])

Retail\_shops (retailshop\_id, province, city, garment\_catagory, warehouse\_id[FK]) Invoice( invoice\_no, noof\_items, total\_price, date, cutomer\_id[FK], employee\_id[FK], retailshop\_id[FK] ) Employees (employee\_id, employee\_name, employee\_position, employee\_office, work\_city, work\_province, retailshop\_id[FK], warehouse\_id[FK], customer\_id[FK])

Customer (Customer\_id, Customer\_password) Loyal\_Customer ( loyalcustomer\_id, customer\_name, customer\_address, date of birth, gender, Customer\_id[FK])

3NF

Garments (Garment\_id, Garment\_type, Garment\_color, Garment\_design, Garment\_size) Garment\_details(Garment\_id, Retail\_price, Sale\_items) Warehouses (Warehouse\_id, Geopraphical\_province, City, Garment\_id[FK]) Supplier\_meterial(Rowmeterial\_id, Rowmeterial\_type) Suppliers ( rowmeterial\_id, rowmeterial\_name, cost\_price, no\_rowmeterial, total\_costprice, reorder\_date,warehouse\_id[FK])

Retail\_shops (retailshop\_id, province, city, garment\_catagory, warehouse\_id[FK]) Invoice( invoice\_no, noof\_items, total\_price, date, cutomer\_id[FK], employee\_id[FK], retailshop\_id[FK] ) Employees (employee\_id, employee\_name, employee\_position, employee\_office, work\_city, work\_province, retailshop\_id[FK], warehouse\_id[FK], customer\_id[FK])

Customer (Customer\_id, Customer\_password) Loyal\_Customer ( loyalcustomer\_id, customer\_name, customer\_address, date of birth, gender, Customer\_id[FK])

## Normalized tables

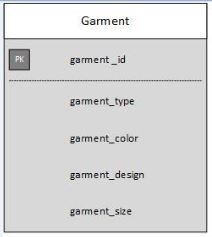
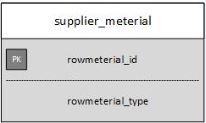
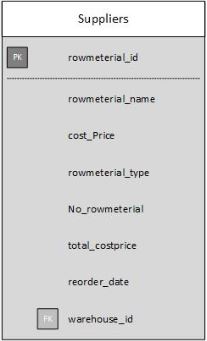


Figure 3: Suppliers table (Author's work)

Figure 4: Retail\_shop table (Author's work)

Figure 5: Garment table (Author's work)

Figure 6: Garment\_details table (Author's work)

Figure 7:Supplier\_meterial table (Author's work)

## 

Figure 8; Warehouse table (Author's work)

Figure 9: Loyal\_customer table (Author's work)

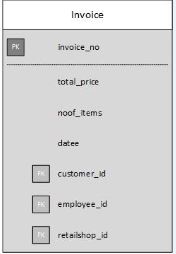


Figure 10: Invoice table (Author's work)



Figure 11: Employee table (Author's work)

Figure 12: Customer table (Author's work)

# Constraints

**Garment table**

* garment\_id is the primary key in this table which cannot be null.
* garment\_id is a foreign key for the Garment\_id in Warehouse table.

**Garment\_details table**

* garment\_id is the primary key in this table which cannot be null.
* garment\_id is a foreign key for the Garment\_id in Warehouse table.

**Warehouse table**

* warehouse\_id is the primary key in this table which cannot be null.
* warehouse\_id is a foreign key for the warehouse\_id in Employee table.
* warehouse\_id is a foreign key for the warehouse\_id in Suppliers table.
* warehouse\_id is a foreign key for the warehouse\_id in Retail\_shop table.

**Retail\_shop table**

* retailshop\_id is the primary key in this table which cannot be null.
* retailshop\_id is a foreign key for the retailshop\_id in Employee table.
* retailshop\_id is a foreign key for the retailshop\_id in Invoice table.

**Suppliers table**

* rowmeterial\_id is the primary key in this table which cannot be null.

**Supplier\_meterial table**

* rowmeterial\_id is the primary key in this table which cannot be null.

**Loyal\_customer table**

* loyalcustomer\_id is the primary key in this table which cannot be null.

**Customer table**

* cutomer\_id is the primary key in this table which cannot be null.
* cutomer\_id is a foreign key for the cutomer\_id in Loyal\_customer table.
* cutomer\_id is a foreign key for the cutomer\_id in Employee table.
* cutomer\_id is a foreign key for the cutomer\_id in Invoice table.

**Employee table**

* employee\_id is the primary key in this table which cannot be null.
* employee\_id is a foreign key for the employee\_id in Invoice table.

**Invoice table**

* invoice\_no is the primary key in this table which cannot be null.

# Create Table Statements

create table garment

(garment\_id varchar(5) not null primary key,

garment\_type varchar(12) not null,

garment\_color varchar(10) not null,

garment\_design varchar(15),

garment\_size varchar(12),

);

create table garment\_details

(garment\_id varchar(5) not null primary key,

retail\_price float,

sale\_items int

);

create table warehouse

(warehouse\_id varchar(5) not null primary key,

geopraphical\_province varchar(20) not null,

city varchar(20),

garment\_id varchar(5) foreign key references garment(garment\_id)

);

create table supplierr

(rowmeterial\_id varchar(6) not null primary key,

rowmeterial\_name varchar(15),

cost\_price int,

No\_rowmeterial int,

total\_costprice int,

reorder\_date varchar(15),

warehouse\_id varchar(5) foreign key references warehouse(warehouse\_id)

);

create table supplier\_meterial

(rowmeterial\_id varchar(6) not null primary key,

rowmeterial\_type varchar(15)

);

create table customer

(customer\_id varchar(5) not null primary key,

customer\_password varchar(25),

customer\_name varchar(25)

);

create table loyalcustomer

(loyalcustomer\_id varchar(5) not null primary key,

loyalcustomer\_name varchar(30) not null,

loyalcustomer\_address varchar(50),

dateof\_birth varchar(15) not null,

gender varchar(6),

customer\_id varchar(5) foreign key references customer(customer\_id)

);

create table retail\_shop

(retailshop\_id varchar(5) not null primary key,

province varchar(18) not null,

city varchar(18) ,

garment\_catagory varchar(10),

warehouse\_id varchar(5)foreign key references warehouse(warehouse\_id)

);

create table employee

(employee\_id varchar(5) not null primary key,

employee\_name varchar(30) not null,

position varchar(20),

employee\_office varchar(20) not null,

work\_city varchar(20),

work\_province varchar(20),

retailshop\_id varchar(5) foreign key references retail\_shop

(retailshop\_id),

warehouse\_id varchar(5)foreign key references warehouse(warehouse\_id),

customer\_id varchar(5)foreign key references customer(customer\_id)

);

create table invoice

(invoice\_no varchar(10) not null primary key,

noof\_items int,

total\_price float,

datee varchar(12),

cutomer\_id varchar(5) foreign key references customer(customer\_id),

employee\_id varchar(5) foreign key references employee(employee\_id),

retailshop\_id varchar(5) foreign key references retail\_shop

(retailshop\_id),

);

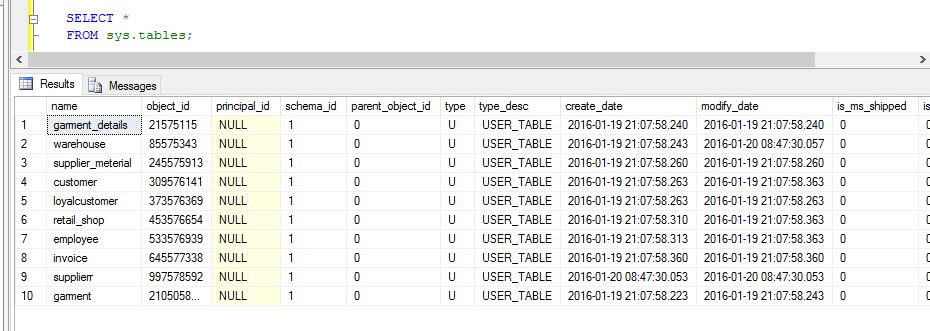


Figure 13: Created table (Author's work)

# Insert Statements

**Garment table**

insert into garment values('GA001','casual','dark blue','doted','medium');

insert into garment values('GA002','formal','red','thinblack lines','small');

insert into garment values('GA003','summer','pink','boxes','medium');

insert into garment values('GA004','summer','white','doted','larger');

insert into garment values('GA005','winter','red,blue','dot&lines','extra large');

insert into garment values('GA006','autumn','yellow','wrap','larger');

insert into garment values('GA007','spring','brown','dot&wave','extra small');

insert into garment values('GA008','wedding','white','plain','extra large');

insert into garment values('GA009','party','red,black','dot&lines','medium');

insert into garment values('GA010','spring','ash,blue','plain','small');

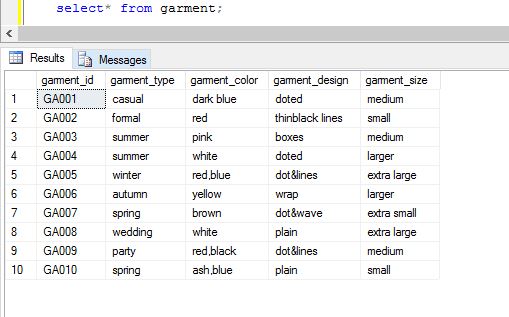
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Figure 14: Garment table values (Author's work)

**Garment\_details table**

insert into garment\_details values('GA001',2200,500);

insert into garment\_details values('GA002',2800,300);

insert into garment\_details values('GA003',2300,150);

insert into garment\_details values('GA004',1800,200);

insert into garment\_details values('GA005',3200,250);

insert into garment\_details values('GA006',4200,200);

insert into garment\_details values('GA007',1400,150);

insert into garment\_details values('GA008',10200,50);

insert into garment\_details values('GA009',4800,180);

insert into garment\_details values('GA010',1700,100);

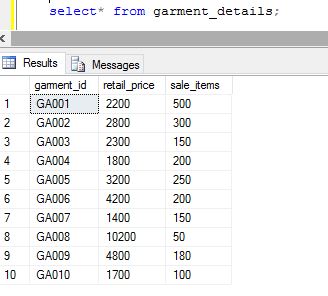


Figure 15: Garment\_details table values (Author's work)

**Warehouse table**

insert into warehouse values('WH001','Western','Colombo','GA001');

insert into warehouse values('WH002','Central','Kandy','GA003');

insert into warehouse values('WH003','Sabaragamuwa','Rathnapura','GA004');

insert into warehouse values('WH004','Southern','Matara','GA002');

insert into warehouse values('WH005','North central','Anuradhapura','GA005');

insert into warehouse values('WH006','Northern','Jaffna','GA007');

insert into warehouse values('WH007','Eastern','Ampara','GA006');

insert into warehouse values('WH008','Uva','Monaragala','GA010');

insert into warehouse values('WH009','North Western','Kurunegala','GA009');

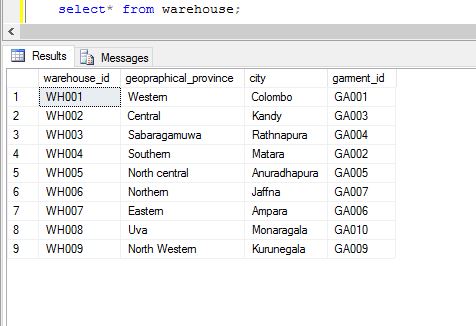
****

Figure 16: Warehouse table values (Author's work)

**supplierr table**

insert into supplierr values('RAW001','buttons',8,100,800,'2016/01/01','WH001');

insert into supplierr values('RAW002','thread',25,300,7500,'2015/08/04','WH003');

insert into supplierr values('RAW003','cloth',300,3000,900000,'2015/09/06','WH004');

insert into supplierr values('RAW004','pins',4,150,600,'2016/02/07','WH005');

insert into supplierr values('RAW005','paint(1l)',950,150,142500,'2017/06/04','WH002');

insert into supplierr values('RAW006','paper cloth',10,18,1800,'2017/02/03','WH006');

insert into supplierr values('RAW007','zipper',5,500,2500,'2016/05/07','WH007');

insert into supplierr values('RAW008','sticker',11,200,2200,'2017/08/02','WH008');

insert into supplierr values('RAW009','plasticbag',4,500,2000,'2016/03/02','WH009');

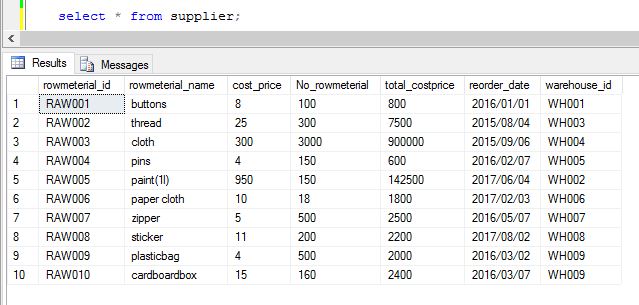
****insert into supplierr values('RAW010','cardboardbox',15,160,2400,'2016/03/07','WH009');

Figure 17: Suppliers table values (Author's work)

**Supplier\_meterial table**

insert into supplier\_meterial values('RAW001','Shirt');

insert into supplier\_meterial values('RAW004','blouse');

insert into supplier\_meterial values('RAW003','skirt');

insert into supplier\_meterial values('RAW005','jacket');

insert into supplier\_meterial values('RAW002','trouser');

insert into supplier\_meterial values('RAW006','blazer');

insert into supplier\_meterial values('RAW007','short');

insert into supplier\_meterial values('RAW008','t-shirt');

insert into supplier\_meterial values('RAW009','dresses');

insert into supplier\_meterial values('RAW010','dresses');

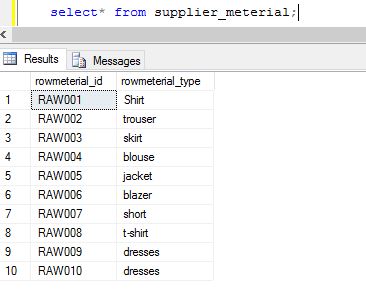
****

Figure 18: Supplier\_meterial table values (Author's work)

**Loyal\_customer table**

insert into loyalcustomer values('LC005','John smith','564,duplication road,boralla','1990/02/01','male','Cu005');

insert into loyalcustomer values('LC001','Sk koralagoda','564,akurugoda road,pelawatta','1994/03/05','male','Cu001');

insert into loyalcustomer values('LC004','Sasanki malape','No.30,hidellana,road,rathnapura','1981/02/12','female','Cu004');

insert into loyalcustomer values('LC003','Pramuk perera','No.30/6,oldkotte road,rajagiriya','1989/02/27','male','Cu002');

insert into loyalcustomer values('LC002','Sanduni perera','No.12/6,kolonnawa,IDH','1994/06/17','female','Cu006');

insert into loyalcustomer values('LC006','Sanidu umesh','No.20,koswatta,north','1990/04/25','male','Cu014');

insert into loyalcustomer values('LC007','Sachini rajapaksha','No.78/1,pannipitiya road,kottawa','1981/02/22','female','Cu007');

insert into loyalcustomer values('LC008','shehan awishka','No.11, pahala road,ampara','1985/11/12','male','Cu011');

insert into loyalcustomer values('LC009','Waruni wikunagoda','No.30, kandy road, kandy','1989/02/27','female','Cu012');

insert into loyalcustomer values('LC010','Lakshan pradeep','No.22/2,kuliyapitiya,kurunegala','1980/01/05','male','Cu009');

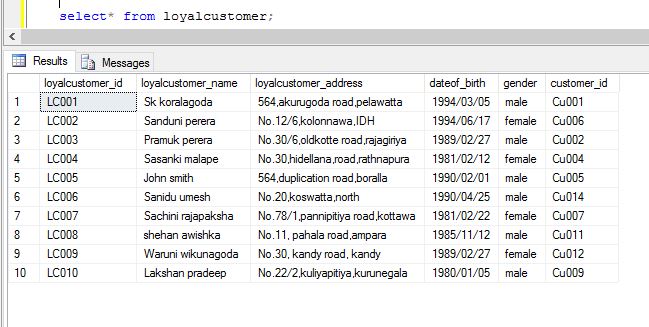


Figure 19: Loyal\_customer table values (Author's work)

**Customer table**

insert into customer values('Cu001','Sk@pw','Sk koralagoda');

insert into customer values('Cu002','dil@.394','Pramuk perera');

insert into customer values('Cu003','this&pw','Lakshan');

insert into customer values('Cu004','malape.q23','Sasanki malape');

insert into customer values('Cu005','jon12345','John smith');

insert into customer values('Cu006','sandu12','Sanduni perera');

insert into customer values('Cu007','sachi@11','Sachini rajapaksha');

insert into customer values('Cu008','lai678','Lahiru paranawithana');

insert into customer values('Cu009','laksh@me','Lakshan pradeep');

insert into customer values('Cu010','dhami@22','Dhamme');

insert into customer values('Cu011','sheha@me.22','shehan awishka');

insert into customer values('Cu012','waru4566','Waruni wikunagoda');

insert into customer values('Cu013','thil@you','Thilini wijesekara');

insert into customer values('Cu014','sani@ja','Sanidu umesh');

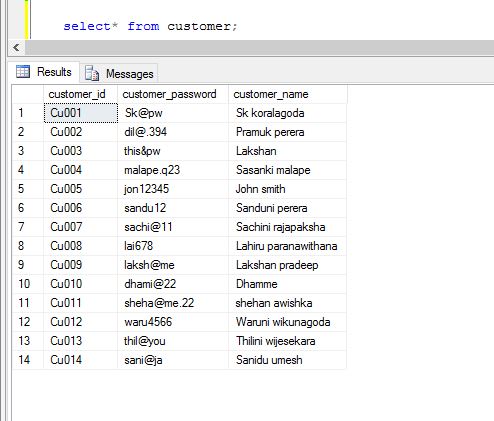
****

Figure 20: Customer table values (Author's work)

**Retail\_shop table**

insert into retail\_shop values('RE001','Western','Colombo','ladies','WH001');

insert into retail\_shop values('RE002','Western','Gampaha','mens','WH001');

insert into retail\_shop values('RE003','Southern','Galle','mens','WH004');

insert into retail\_shop values('RE004','Central','mathale','mens','WH002');

insert into retail\_shop values('RE005','Sabaragamuwa','kegalla','mens','WH003');

insert into retail\_shop values('RE006','North central','anuradhapura','ladies','WH005');

insert into retail\_shop values('RE007','Northern','jaffna','mens','WH006');

insert into retail\_shop values('RE008','Eastern','batticaloa','ladies','WH007');

insert into retail\_shop values('RE009','Uva','monaragala','mens','WH008');

insert into retail\_shop values('RE010','North Western','kurunegala','ladies','WH009');

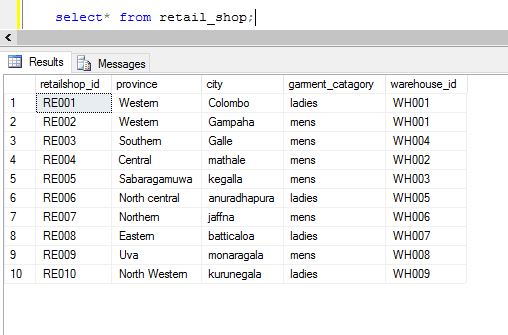
****

Figure 21: Retail\_shop table values (Author's work)

**Employee table**

insert into employee values('EMP01','Sk koralagoda','Manager','Retail\_shop','Colombo','Western','RE001',NULL,'Cu001');

insert into employee values('EMP02','Pramuk perera','Sales person','Retail\_shop','Colombo','Western','RE001',NULL,'Cu002');

insert into employee values('EMP04','kasun subasighe','Sales person','Retail\_shop','Colombo','Western','RE001',NULL,NULL);

insert into employee values('EMP03','Samudaya','Worker','Warehouse','Rathnapura','Sabaragamuwa',NULL,'WH003',NULL);

insert into employee values('EMP05','Samarasingha','Sales person','Retail\_shop','kegalla','Sabaragamuwa','RE005',NULL,NULL);

insert into employee values('EMP06','Lakshan pradeep','Manager','Warehouse','kurunegala','North Western',NULL,'WH009','Cu009');

insert into employee values('EMP07','Suranga','Worker','Warehouse','kurunegala','North Western',NULL,'WH003',NULL);

insert into employee values('EMP08','Waruni wikunagoda','Manager','Warehouse','Kandy','Central',NULL,'WH002','Cu012');

insert into employee values('EMP09','Sukum udana','Worker','Retail\_shop','Galle','Southern','RE003',NULL,NULL);

insert into employee values('EMP10','Sanduni perera','Manager','Warehouse','Colombo','Western',NULL,'WH001','Cu006');

insert into employee values('EMP11','kalkuni suttah','Worker','Retail\_shop','batticaloa','Eastern','RE008',NULL,NULL);

insert into employee values('EMP12','Thilina lakruwan','Sales person','Retail\_shop','mathale','Central','RE004',NULL,NULL);

insert into employee values('EMP13','Dumidu udayanga','Worker','Warehouse','Anuradhapura','North central',NULL,'WH005',NULL);

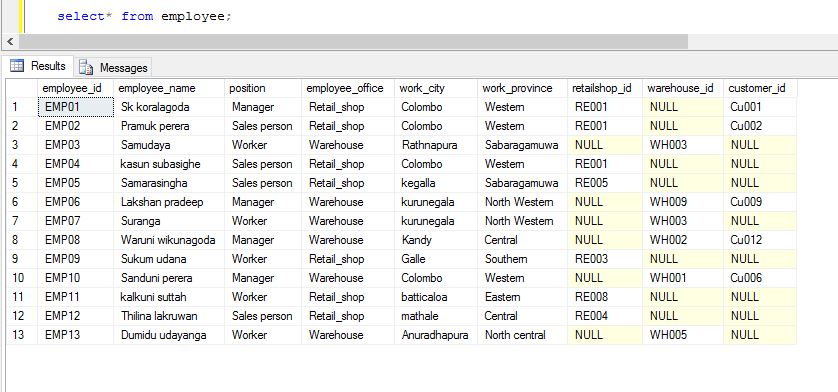
****

Figure 22: Employee table values (Author's work)

**invoice table**

insert into invoice values('INV001',10,8620,'2010/01/14','Cu003',NULL,'RE001');

insert into invoice values('INV002',5,4500,'2012/03/24','Cu003',NULL,'RE003');

insert into invoice values('INV003',12,10120,'2014/05/21','Cu001','EMP01','RE001');

insert into invoice values('INV004',8,5020,'2012/01/21','Cu007',NULL,'RE002');

insert into invoice values('INV005',6,4820,'2010/08/29','Cu005',NULL,'RE003');

insert into invoice values('INV006',2,2300,'2011/03/11','Cu005',NULL,'RE002');

insert into invoice values('INV007',14,14300,'2011/04/15','Cu009','EMP06','RE005');

insert into invoice values('INV008',9,8300,'2015/09/18','Cu006','EMP10','RE010');

insert into invoice values('INV009',5,5200,'2014/07/20','Cu010',NULL,'RE009');

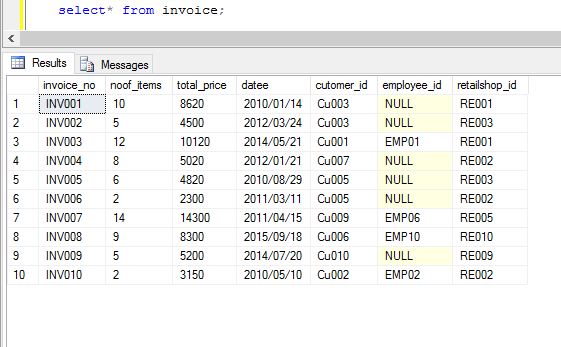
****insert into invoice values('INV010',2,3150,'2010/05/10','Cu002','EMP02','RE002');

Figure 23: Invoice table values (Author's work)

# SQL Queries

1. List all the employees that work in the warehouses and retail shops, along with the city where they work.

SELECT employee\_id,retailshop\_id,warehouse\_id,work\_city

FROM employee;

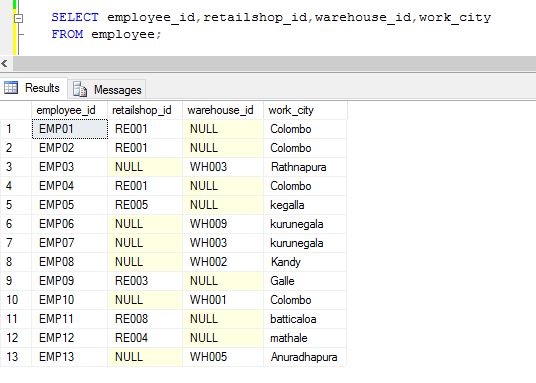


Figure 24: Query 01 (Author's work)

1. List the city and province where the retail shops are located

SELECT retailshop\_id,city,province FROM retail\_shop;

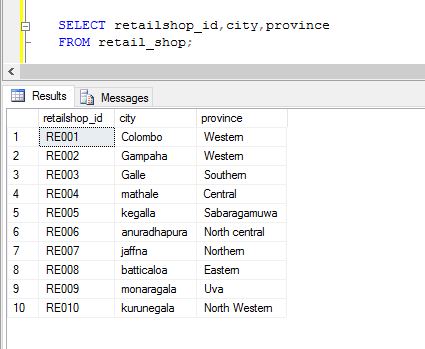


Figure 25 : Query 02 (Author's work)

1. List all employees who work in the western province

SELECT employee\_id,work\_province FROM employee

WHERE work\_province='Western';

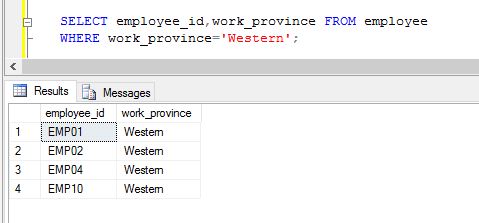


Figure 26: Query 03 (Author's work)

1. Add a garment to the inventory of items on sale

SELECT sale\_items FROM garment\_details;

UPDATE garment\_details

SET sale\_items = sale\_items\*3

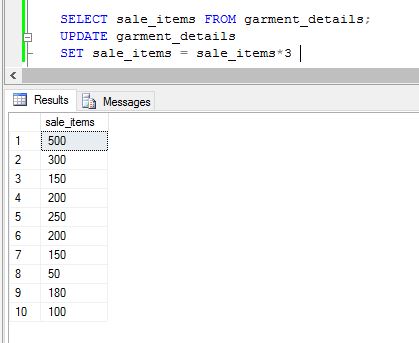


Figure 27: Query 04 (Author's work)

1. List the large garments, that have cost price less than 20% of the retail price

SELECT g.garment\_id

FROM garment\_details g,supplierr s, warehouse w

WHERE s.warehouse\_id=w.warehouse\_id and w.garment\_id=g.garment\_id

and s.cost\_price < g.retail\_price\*20/100;

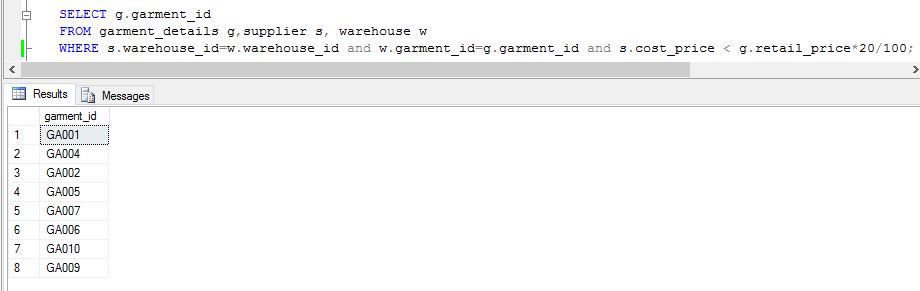


Figure 28: Query 05 (Author's work)

1. Search for ladies garments that are on sale in the Colombo retail shops

SELECT retailshop\_id, city, garment\_catagory

FROM retail\_shop

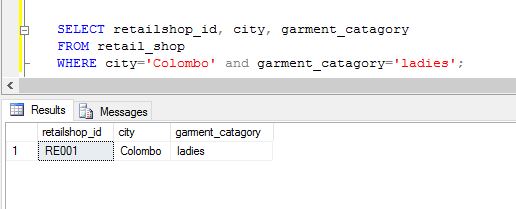
 WHERE city='Colombo' and garment\_catagory='ladies';

Figure 29: Query 06(Author's work)

1. Update the details about the manager and workers of the Colombo retail shops

UPDATE employee

SET employee\_name ='Lakshitha madushanka'

WHERE position='manager' and warehouse\_id='WH009';

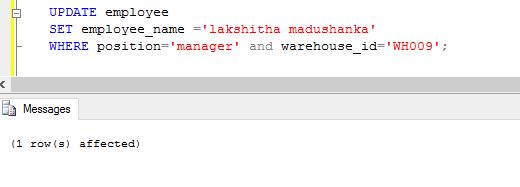


Figure 30: Query 07 I (Author's work)

UPDATE employee

SET employee\_name ='Suranga lakmal'

WHERE position='Worker' and warehouse\_id='WH003';

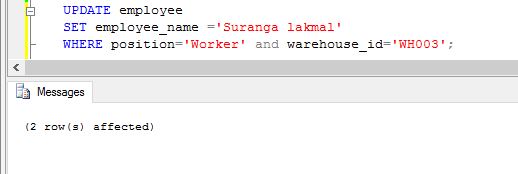
****

Figure 31: Query 01 II (Author's work)

****

Figure 32: Query 07 Executed (Author's work)

1. Find the cheapest and the most expensive garments on sales

SELECT Min(retail\_price) as cheapest,

max(retail\_price) as most\_expensive

FROM garment\_details;

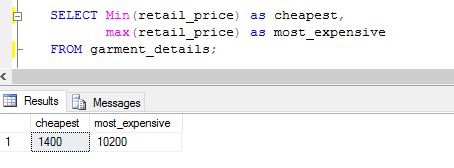
****

Figure 33: Query 08 (Author's work)

1. Update the retail price of all garments of type winter wear with a 10% reduction

UPDATE dbo.garment\_details

SET retail\_price = (retail\_price - retail\_price\*10/100)

FROM garment\_details gd

inner join dbo.garment g ON g.garment\_id= gd.garment\_id

WHERE garment\_type ='winter';

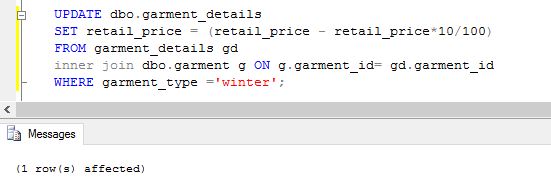


Figure 34: Query 09 (Author's work)

1. List all loyal customers (females only) whose birthdays are in the month of February

SELECT loyalcustomer\_name,dateof\_birth,gender

FROM loyalcustomer

WHERE gender='female' and dateof\_birth LIKE '%/02/%';

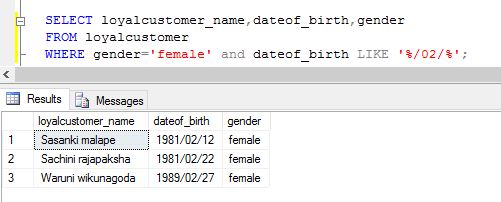


Figure 35: Query 10 (Author's work)

1. List the total price of the garments sold in month of January 2012

SELECT sum(total\_price) as Totalsales

FROM invoice

WHERE datee like '%2012/01/%';

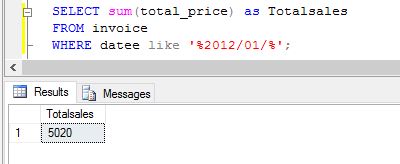


Figure 36: Query 11 (Author's work)

1. List all raw material that have reached the re order level

select rowmeterial\_id,reorder\_date from supplierr

order by reorder\_date;

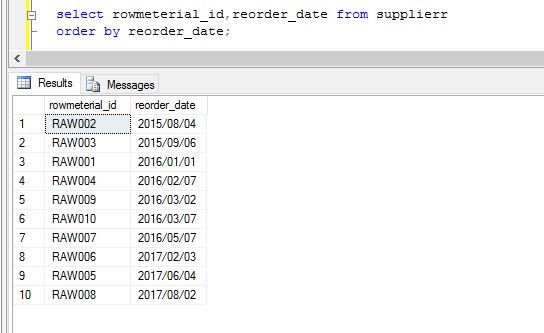


Figure 37: Query 12 (Author's work)

1. How my garment cost less than LKR 1000?

SELECT rowmeterial\_id,rowmeterial\_name,total\_costprice

FROM supplierr

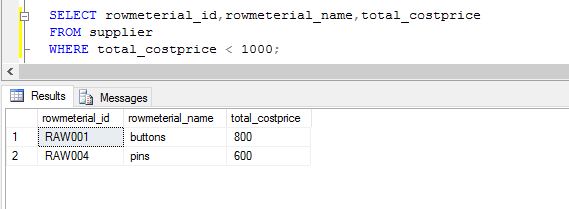
 WHERE total\_costprice < 1000;

Figure 38: Query 13 (Author's work)

1. Find the number of garments and sum of the price for all items bought by “John Smith”(a loyal customer)

SELECT sum(i.noof\_items) AS Nub\_of\_garments,

sum(i.total\_price) AS Total\_Price

FROM customer c, invoice i

WHERE c.customer\_id = i.cutomer\_id and c.customer\_name='John smith';

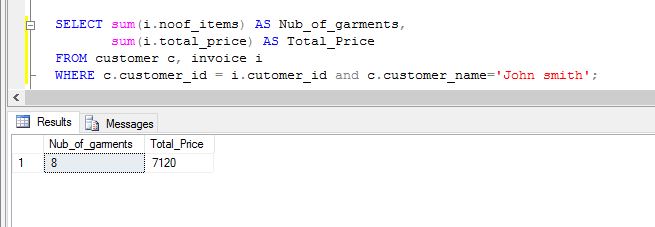


Figure 39: Query 14 (Author's work)

1. Find the number of garments bought by each loyal customer

SELECT loyalcustomer\_id,

sum(i.noof\_items) as Noof\_garments

FROM loyalcustomer l, invoice I

WHERE l.customer\_id=i.cutomer\_id

GROUP BY loyalcustomer\_id;

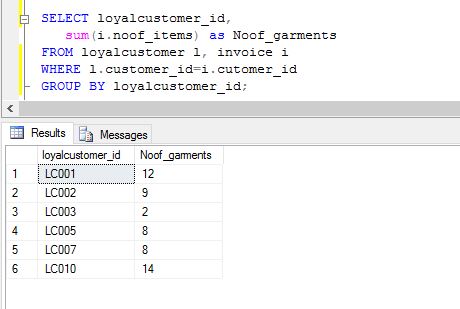


Figure 40: Query 15 (Author's work)

1. Record a new garment

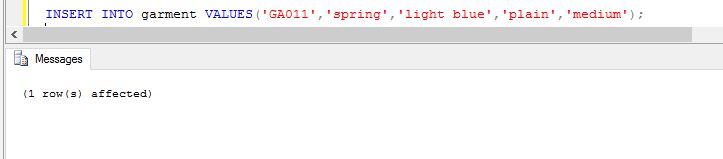
INSERT INTO garment VALUES('GA011','spring','light blue','plain','medium');

Figure 41: Query 16 (Author's work)

1. Find all employees that are also the loyal customers of the company

SELECT employee\_id,employee\_name, loyalcustomer\_id

FROM employee e, loyalcustomer lc

WHERE e.customer\_id=lc.customer\_id;

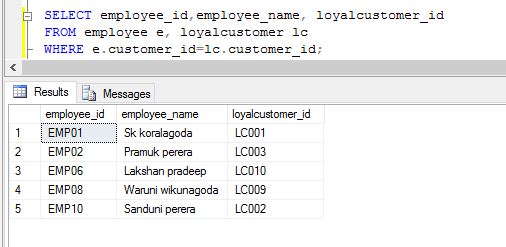


Figure 42: Query 17 (Author's work)

1. Find all employees that have made no purchases from their own company (out of loyal customers)

SELECT employee\_id,employee\_name,position

FROM employee

WHERE customer\_id is null;

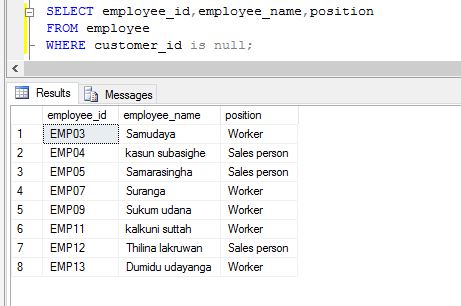


Figure 43: Query 18 (Author's work)

1. Summary of the total sales made by each retail shop

SELECT r.retailshop\_id,city,

sum(total\_price) as Total\_Sales

FROM retail\_shop r,invoice i

WHERE r.retailshop\_id=i.retailshop\_id

GROUP BY r.retailshop\_id,city;

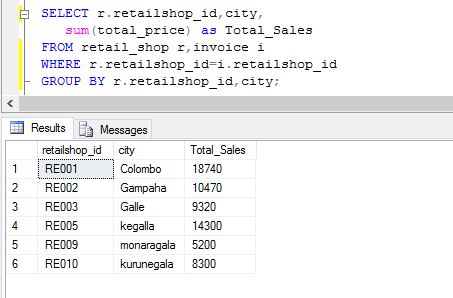


Figure 44: Query 19 (Author's work)

1. Delete all the garments that are of type summer

DELETE from garment

WHERE garment\_type='summer';

# 10. Conclusion

Firstly the author has made the ERD Diagram according to system scenario. Then author has created 10 tables using create table *table\_name* statements. Secondly inserted values using insert into *table\_name* values statements relevant table.

Finally author had able to implement all the queries according to the given scenarios.

# 11. Reference

Airbrake.io,. "What Is The Software Development Life Cycle?". N.p., 2013. Web. [Accessed 02 Jan. 2016]

Garcia-Molina, Hector, Jeffrey D. Ullman, and Jennifer Widom. DATABASE SYSTEMS. 2nd ed. 2008. Print. [ONLINE] Available [Accessed 05 Jan. 2016]