Assignment 6

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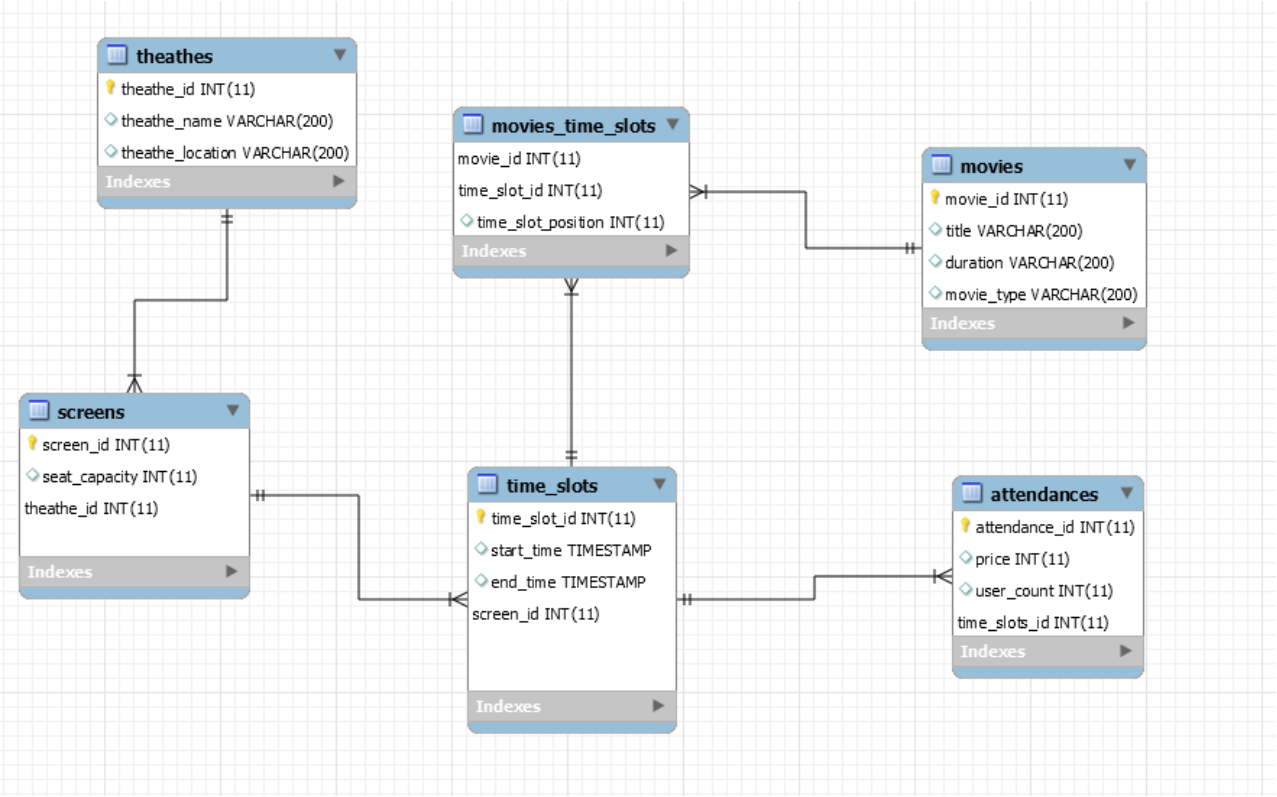
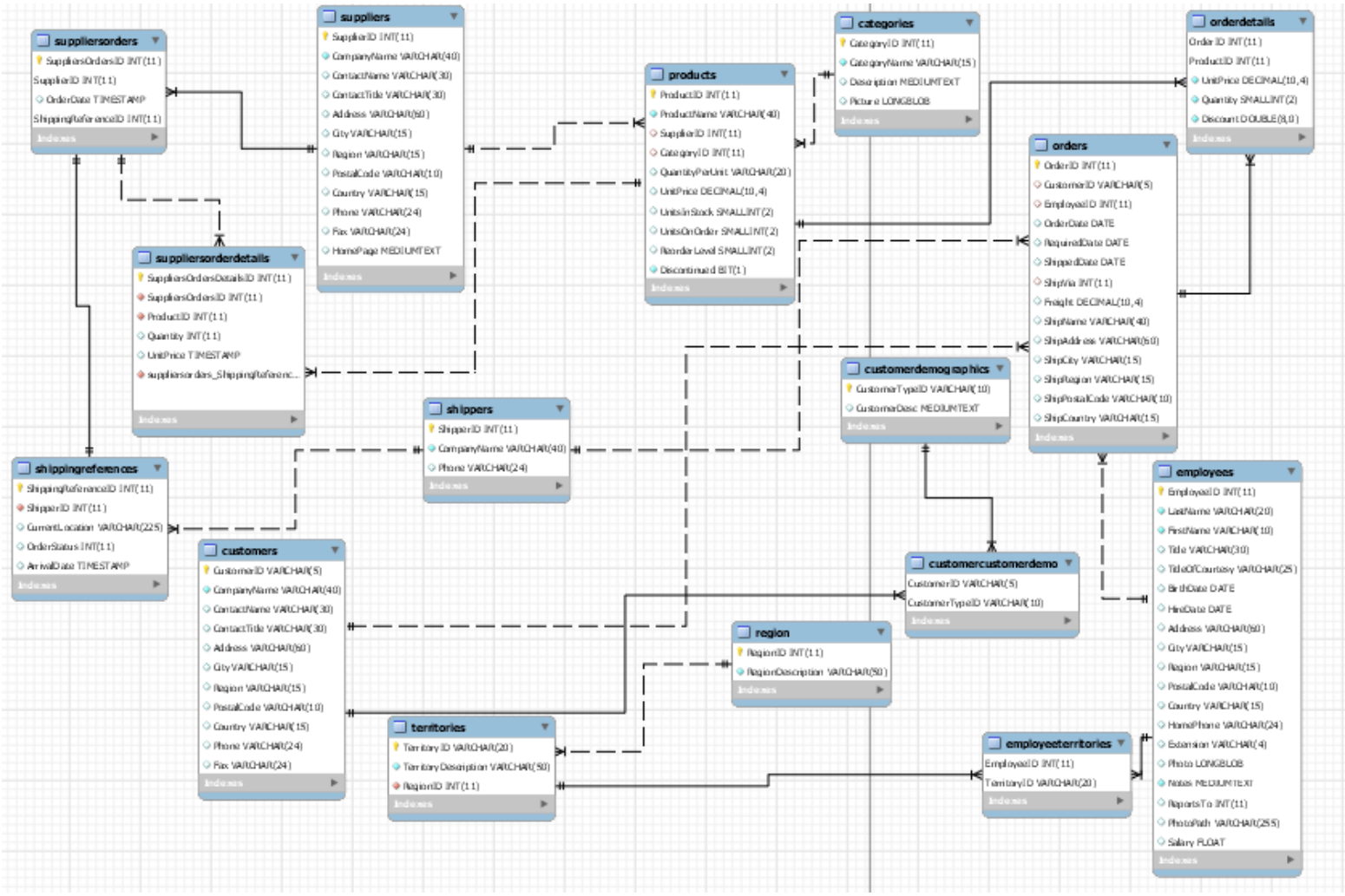
CSCI 3901

Problem 1



Problem 2



question2a.sql

```
use class_3901;

create table Suppliersorders(

SuppliersOrdersID int not null auto_increment,

SupplierID varchar(225) not null,

ShippingReferenceID int not null,

OrderDate timestamp,

primary key(SuppliersOrdersID),
```

```
constraint FKSupplier foreign key (SupplierID) references suppliers(SupplierID),

constraint FKShippingRef foreign key (ShippingReferenceID) references
ShippingReferences(ShippingReferenceID)

);

create table SuppliersOrderdetails(

SuppliersOrdersDetailsID int not null auto_increment,

SuppliersOrdersID int,

ProductID int,

Quantity int,

UnitPrice timestamp,

primary key(SuppliersOrdersDetailsID),

constraint FKSuppliersorders foreign key (SuppliersOrdersDetailsID) references
Suppliersorders(SuppliersOrdersDetailsID)

);

create table ShippingReferences(

ShippingReferenceID int not null auto_increment,

ShipperID int not null,

CurrentLocation varchar(225),

OrderStatus int,

ArrivalDate timestamp,

primary key(ShippingReferenceID),

constraint FKShippingRef foreign key (ShippingReferenceID) references
ShippingReferences(ShippingReferenceID),

constraint FKSupplier foreign key (ShipperID) references shippers(ShipperID)

);
```

Documentation

Overview

The History Generator program rebuilds the history of transactions by taking the current inventory, the reorder level and transactions then generating the history by back tracking through the them. The program creates the products, its properties and assumption variables in the product object and stores the daily information in the day records objects then then permutates though them to generate to the history of those products.

File and External Data

Main.java	This is the main class where all the objects are called, and the input are accepted and validated.
DB.java	This Class makes the database connections, generates the historical transactions and inserts the transactions to the Purchaseorders Tables
DBcredentials.java	This class sets the database credential and returns then to any class that needs to access the database.
DayRecord.java	This Class Contains the Daily Record of products Transactions. The starting inventory, Ending Inventory, Price, Quantity sold and reorder level
Product.java	This Class Stores the Products Information and this is used to generate the past transactions from the products records

Data structures and their relations to each other's

1. HistoryGenMap: This is a Linked Hash Map that contains Another Linked Hash Map the first Linked Hash Map's Key is the product Id and the value is a Linked Hash Map of Day Record Objects
2. StoreProduct: This is a Hash Map of Product Objects the Key of this hash map is the Product ID.

Assumptions

- Days without Reordered units are included in the History of Transactions
- The PurchaseOrders.sql is run and the Purchase Order Table has been created in the database to store the Results of the History.

Key algorithms and design elements

The first starting inventory is the current units in stock the sales are added to this inventory to form the end sales inventory and then after comparing the inventory to the maximum order size the if the inventory is above then units are reordered and the reordered until return the inventory to the reorder level when the next sales are added to it. This is how the history is generated and back tracked.

Limitations

The Program needs the Purchase Order table in the database to Store the results of the Program

The program assumes the re ordered days will always end on the reorder level so this could affect the accuracy of the generated history.

Documentation

Overview

The inventory control program implements the inventory control interface. The DB object connects to the database when it is initialized and when the ship_order, reissue_orders or receive_orders methods are called the methods starts a connection and runs the queries to carry out the feature.

File and External Data

Main.java	This is the main class where all the objects are called, and the input are accepted and validated.
DB.java	This Class makes the database connections, Implements the InventoryControl interface and is where all the Queries are called
DBcredentials.java	This class sets the database credential and returns then to any class that needs to access the database.
OrderException	Extends Exception interface
InventoryControl	Interface to be implemented

Methods and their relations to each other's

Ship_order: this method performs all the queries that it would take to fulfil an order

Issue_reorder: this method performs all the queries that it would take to find daily reorders and fulfil them

Receive_order:this method performs all the queries to receive an order.

Assumptions

- The history generation program has been run
- The Purchaseorder table has been created
- Purchaseorder.sql has been run

Limitations

The history generation program must be created before the program can run.

The purchase order table must be created.