**COURSEWORK SUBMISSION FORM**

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| **STUDENT USE** | | **STAFF USE** | |
| Module Name | Database Systems Development | First Marker’s  (acts as signature) |  |
| Module Code | **5BUIS009C-n** | Second Marker’s  (acts as signature) |  |
| Lecturer Name | **Dmitriy Pochitaev** | Agreed Mark |  |
| UoW Student IDs |  | **For Registrar’s office use only (hard copy submission)** | |
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| **MARKERS FEEDBACK (Continued on the next page)** |
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# Short Case Description

This report aims to discuss about a well-known company namely Korzinka which has retailer in every prefecture of Uzbekistan. Mainly, we will be focusing on analyze of the company and the construction of data model of Korzinka into schematic representation. There will be provided Enhanced (EER) construction for a retail, which serves people by selling products as a supermarket.

**Requirements and Assumptions**

As it can be seen from the diagram below, there are several main categories which are: Building, Cash Register, Transaction, Product, Customer, Assistant. Starting from the Building, it has an entity which connects with a cash registerer and own ID number with its location and apartment number. The next category, which is in our case Cash Registerer has id and transactions. Moreover, Transaction has assistant which serves customer, customer itself and products with additional transaction id and time. Also, we have product which contains information like name, price, quantity and weight. We have two types of live categories which are in our case Customer and Assistant. Those both categories are very similar with each other for having personal unique ids, contacts, full name. However, there is a single difference between them, which is bonus card which owns customer where customer can save their bonuses after every transaction.

**Diagram

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It is shown from the table below that there exist 7 entities whereas all of them are strong entities.

There are also relationship cardinalities shown in the diagram where “1” means from zero to one (0…1) and “\*” means from 1 to many (1…\*). However, these relationships will be analyzed once the EER diagram has been mapped to relational model and presented as relational database schema.

**Company Database ER Schema**

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Description automatically generated**

As it can be seen from the scheme above, Building has 4 keys (BuildingID – Primary Key, CashRegister - ForeignKey), Location and Apartment. As a building has more than one cash registers, CashRegister has been created. Also, CashRegister would do dozens of transactions in a day and are connected via Transaction Foreign Key. Transaction has Products, Customer and Assistant all are Foreign Keys except time, but having a Primary Key of Id. Product might differ with its quantity or weight, there for we consider both by having aside Primary Key of ID and ISBN Foreign Key in addition which is primarily connected to its own ID. As regards to the Customer and Assistant, they are both similar by having Primary Key IDs which are linked to Transaction, FullName and Contacts. However, Customer has Foreign Key of Card which links to BonusCard which holds bonuses on Bonuses being connected via BonusCardID.

**Appendix**

-- Creating and using the database

create database Korzinka;

use Korzinka;

---Creating Tables and Assigning Constraints

-- Building Attribute

create table Building(

BuildingID int not null,

Location varchar(20),

Apartment int,

CashRegister int,

constraint pk\_building\_id primary key(BuildingID)

);

-- Cash Register Attribute

create table CashRegister(

CashRegisterID int not null,

Transactions int,

constraint pk\_cashregister\_id primary key(CashRegisterID)

);

-- Transaction Attribute

create table "Transaction"(

TransactionID int not null,

TransactionTime datetime,

Products int,

Customer int,

Assistant int,

constraint pk\_transaction\_id primary key(TransactionID)

);

-- Product Attribute

create table Product(

ProductID int not null,

Name varchar(20),

Price float,

Quantity int,

Weight float,

ISBN int,

constraint pk\_product\_id primary key(ProductID)

);

-- Assistant Attribute

create table Assistant(

AssistantID int not null,

FirstName varchar(20),

LastName varchar(20),

Contacts int,

constraint pk\_assistant\_id primary key(AssistantID)

);

-- Customer Attribute

create table Customer(

CustomerID int not null,

FirstName varchar(20),

LastName varchar(20),

Contacts int,

"Card" int,

constraint pk\_customer\_id primary key(CustomerID)

);

-- Bonus Attribute

create table BonusCard(

BonusCardID int not null,

Bonuses float,

constraint pk\_bonuses\_id primary key(BonusCardID)

);

--Adding Foreign Key Constraints to Tables

alter table Building

add constraint fk\_cashregister\_id

foreign key(CashRegister) references CashRegister(CashRegisterID);

alter table CashRegister

add constraint fk\_transaction\_id

foreign key(Transactions) references "Transaction"(TransactionID);

alter table "Transaction"

add constraint fk\_products\_id

foreign key(Products) references Product(ProductID);

alter table "Transaction"

add constraint fk\_assistant\_id

foreign key(Assistant) references Assistant(AssistantID);

alter table "Transaction"

add constraint fk\_customer\_id

foreign key(Customer) references Customer(CustomerID);

alter table Customer

add constraint fk\_bonus\_id

foreign key("Card") references BonusCard(BonusCardID);

alter table Product

add constraint fk\_isbn\_id

foreign key(ISBN) references Product(ProductID);

-- Inserting Sample Data Assets to the database

insert into Assistant values(1, 'Ahmad', 'Salikov', 907683456);

insert into Assistant values(2, 'Eshmat', 'Toshmatov', 946666666);

insert into BonusCard values(1, 0.0);

insert into Customer values(1, 'Yorqin', 'Karimov', 908907688, 1);

insert into Product values(1, 'Bread', 2.99, 1, 0.5, 1);

insert into Product values(2, 'Butter', 1.99, 1, 0.75, 2);

insert into Product values(3, 'Apple', 5.99, 7, 1.5, 3);

insert into "Transaction" values(1, 2021-10-13, 1, 1, 1);

insert into "Transaction" values(2, 2021-11-17, 3, 1, 2);

insert into CashRegister values(1, 1);

insert into CashRegister values(2, 2);

insert into Building values(1, 'Buyuk Ipak Yoli', 3, 1);

-- Deleting the datas

drop table Building;

drop table CashRegister;

drop table "Transaction";

drop table Product;

drop table Assistant;

drop table Customer;

drop table BonusCard;

**Reference List**

Korzinka. Available from https://korzinka.uz/en/. Accessed 9th December 2021.

EER Diagram Drawn Available from here: https://viewer.diagrams.net/?tags=%7B%7D&highlight=0000ff&edit=\_blank&layers=1&nav=1&title=cw.drawio#R7V1bc5s4FP41ftmZdgBxfcylSbubdtJtdrP7tEONYrPFKAtyEvfXL8TINjokxjFwpLFn8hDJIJvv07nqSIzI2ezpMgvvp59ZRJORZURPI3I%2BsizTtqxR%2BWdEi2XPO9t0lj2TLI6qq9Yd3%2BKftOo0qt55HNG8diFnLOHxfb1zzNKUjnmtL8wy9li%2F7I4l9W%2B9DycUdHwbhwnsvY0jPl32%2Bpa37v9I48lUfLPpBstPZqG4uHqSfBpG7HGji3wYkbOMMb78b%2FZ0RpMSPYHL7afFbXL1w7389Wv%2BX%2FjH6W83X%2F58txzsYpdbVo%2BQ0ZS%2FeeifFxElD%2BfvTugH6%2BLSv7z8J43emUaFQ84XAjEaFQBWTZbxKZuwNEw%2BrHtPMzZPI1qOaxSt9TVXjN0XnWbR%2BS%2FlfFHNhnDOWdE15bOk%2BvSOpbz6sJhO5LTlA1ZA5GyejekrT1URVj7IxiSoYLmkbEZ5tiguyGgS8vihPlPCasJNVtetbr1mcfH7LKOSDiLmeCUbpkWM%2Bhg8zCaUV7etuSn%2B2fgd665nxnZiz8dgryApW%2FxV3v%2FeEc2%2FNz87f6oGX7YWVWsY1peYv3Kd3fXsqNG6O4fBkcOdOSRqcSgUwVGL7q5FLWwtWn3bQ5jMq2c4ncdJFKcTQOqashL%2Fx2nM6bf78BnFx8J%2FqtOzGx0PNOP06VWgBWCGBBgRgD2uHRxTeC3TDefGNV4mZy8BIADCKzYuJgVL94MwzMbVBHeMHhH15RlotwTU7gtQGwB6Ujw2n9FKBFRHlFjKQeq%2BKOafzrXA1CQSpmbQElMS9ISpBzCFdjCNTsowrmiNkzDP43EdvLoVpE8x3%2FBKitbKKSn%2BX%2FskZUO4JC%2B5MmvnpdmVQXJd%2FJZmdYNUp4FT0de19bU9SQCXDw6sLxzJlUeyhrXjPpiMH4tvBpI9ZbPv8xzRfMuq0W5QjX4D435fmjFQQYo7lkbFpcyRXbE3S5kjy2vPUiYeXo1wdWAdb4oM5jYlL2RcmQAViPhZmE%2BLnt%2FpJM45zfbzgHrTlXKos5rtaKGOafWmLTd05VpzbvF5zNEOyRssaTDbpmuQtLErBx1ttbHpyPPTGVYbmzDyLgVbSLUmkY39EopowaIJo8WbLEzzcFwmNRq8Sg1QdUWmGQ%2FV7uPFRj3YrVewXb25aqk32Wi6xlvVmyePZA6r3ogN50f%2FzmbXZjJoOT325V0ODQJZkHtmy2mQ5gFDg7oKWMcJAzlDQUttYXc%2BHfbSyQ45ktaCtLb5hIFIQ9GL2pHmqUWacyRtO2mOWpkTxz2S1oI0UynSxO9ujt4AoWqmunz0Vf2m6OxgUr0C6e3Rn1r%2BnPjd2i2DuQ2r2YMug1lKFeINPd3tltPd6twTfr71JMvCxcYF92WQmm%2BMLAW7NkhyBLY0A5ZDdhrhergunDHC9AZaTxHPUkojeiguHBr4arliHsr%2BAu0kRq2adB%2FZ8dODNL9zSXuTJXRlR8ozpI1A225w6zf0YzotWNJ6Ns95MW4GnVMVAjJbrgp20WsPRESohoc6cLWB5bT1UNVK%2B7m4CXZkZdqWNFettJ%2BLm2DXhDRHrdSHi7wbUg%2FSXEcp0sTv3tzqkudxzsN9t7oM5hgEbfdh9OcY4Bblmu8Ng9Rnv%2BsGW%2Bb%2Fc%2BuaZnEBQeED9iMUXkuhGKpGg8gFg76cznyhRmPv%2FJjvDeHkwwKvm%2FAHVTD9TECxjIWcfiYoQXfXAtdPdhjKkRzD%2Bi0Lb%2FeXI2cIOYJ7mXSRI8%2B0keUIJUffsRyRzg84aJ7ecs2gZQy8nYjAAnY9lisD7F179iEnaUm1prO9BkytvIJ9yMmg1qQRtfIK9iEng9qTplaJrH3IS%2FXtSVMrV24fcrVle5um1hI%2FgXvlrjMWzcf8F%2BjHqZDAk0st104vXgIPJk6%2BhDO6H34D7TO0AglOE%2F2sHwLj5%2BssHuuKZ9v8cn94woLqr%2FMw5TFf6Akp%2FnFUYuANSG%2BX36snoOhzVFhFaIY02QVvymYJX4%2FaDfn89UYKTXCV98F7%2BLA2pHfXsN7Emhh%2BACy%2BDoB2qtIBeh7Z4KNPVQeaqW7K9rAQRZ%2BjDrRTHRU8IEHalAkfGFJopq7CnGsTQXkGee9Itr%2Ft7r%2F%2BQIVG6iLONELV8VwFUYUW6oylPNTFQrmS9FuGgQ2pC03USqFq4qLKqJoB%2BglYLm4qFnc3pNu6Alat%2FLmLvNtKE9LUWqlyX6mA1cbYQruAr8GgqdXKK3QDr24UfBMbUg%2BaWt18QjkexMcUxoN6eYREDl5M10cH1YKghlmkLaDocYuHXLiE6ll4bbcEC5OjiGfhKfV6OFVJEyZBFdJe3iitjZltUGEevgrTPfXitEm9GENC6kN%2FUGtIGz2XYFBEG7zBSvp1yWVB2XfQ%2FcHAOmBL6JOWltBS7BgaTfaGOOAtJQ22btC9IT7yUXYjzDpav20e0FcreSvszJG0V0lTK3kb4O68RzYsrUlT633NPsy4n7J0nu%2BfIurLxIAzJ1YvV0QrWfdh0cUKRF1cVXnZ1UZfzPZh1cUzqk17v7VA1MVGNIBeJNTZxeNxCbAknqTF%2F%2BMCofJ4ktMShHgcJifVB7M4ipbanObxz%2FD781AlttWRAsW4zunIOS%2FHKhR4Xr2ovWjmPGM%2F6BlLWHnsScrScpS7OEmkrt78VUBSQ3zWxJH8QtfuOII5r0PnCBzS2LCeOixH0GgeOEe2fPaFOIMajyO4Fe%2FAOSKy49RUpD4sR9BvOnJU5yhocMOG5Qh6YQfOkazrGhcfhuUILuccOEfgBYBNmx0G5Wi1GrVBEtwUriRJdyzlIotjinY1jNMniaCQriHSH5hEuCZ1lDTJ8xMvj8EjyTpK2n6SZnoNx0AMTOIxV7FN0gi%2BTYPJiqOk7SZpDr5Ng9mMszCf%2Fk4ncc412dtqycXMrQ8KEed57IBr0cwY4xufXRbPPf3MIlpe8T8%3D