Relational Databases CA Implementation Document

<u>Student Details</u>

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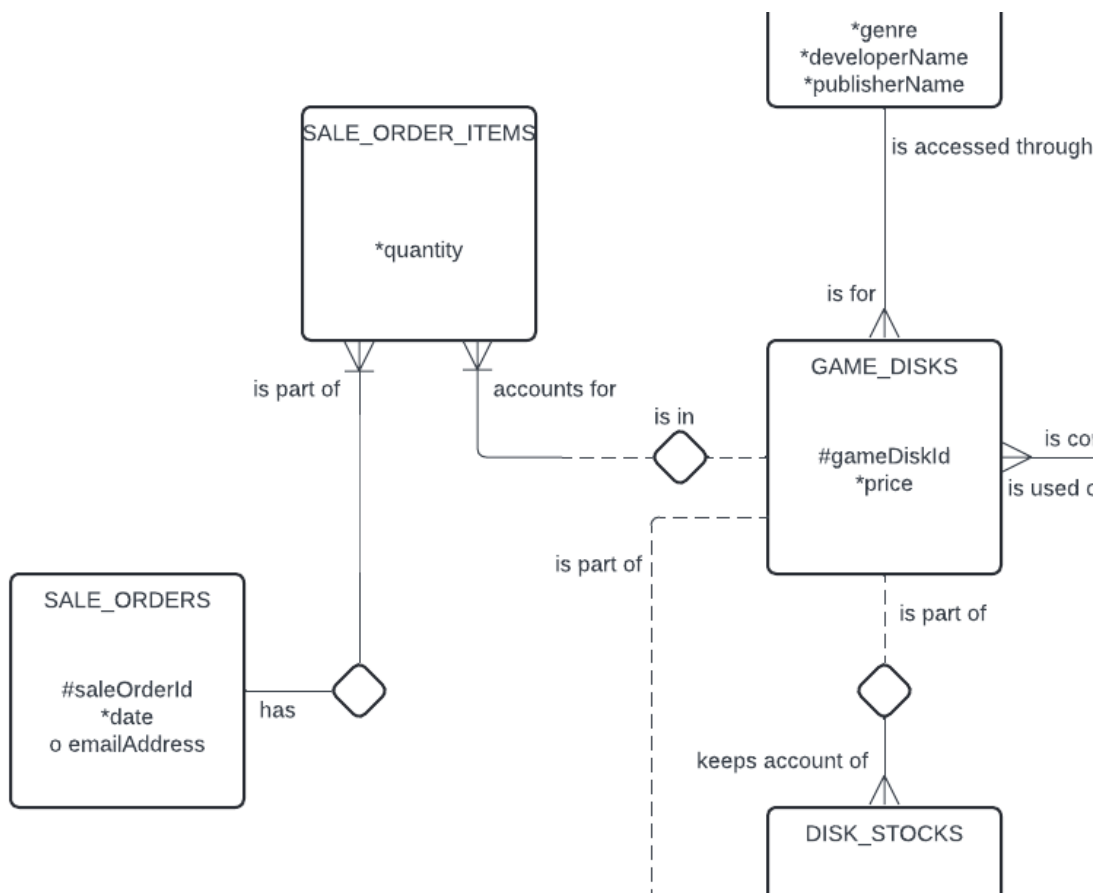Group: W2 (Cloud Computing)

Year: 2

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Implementation Report

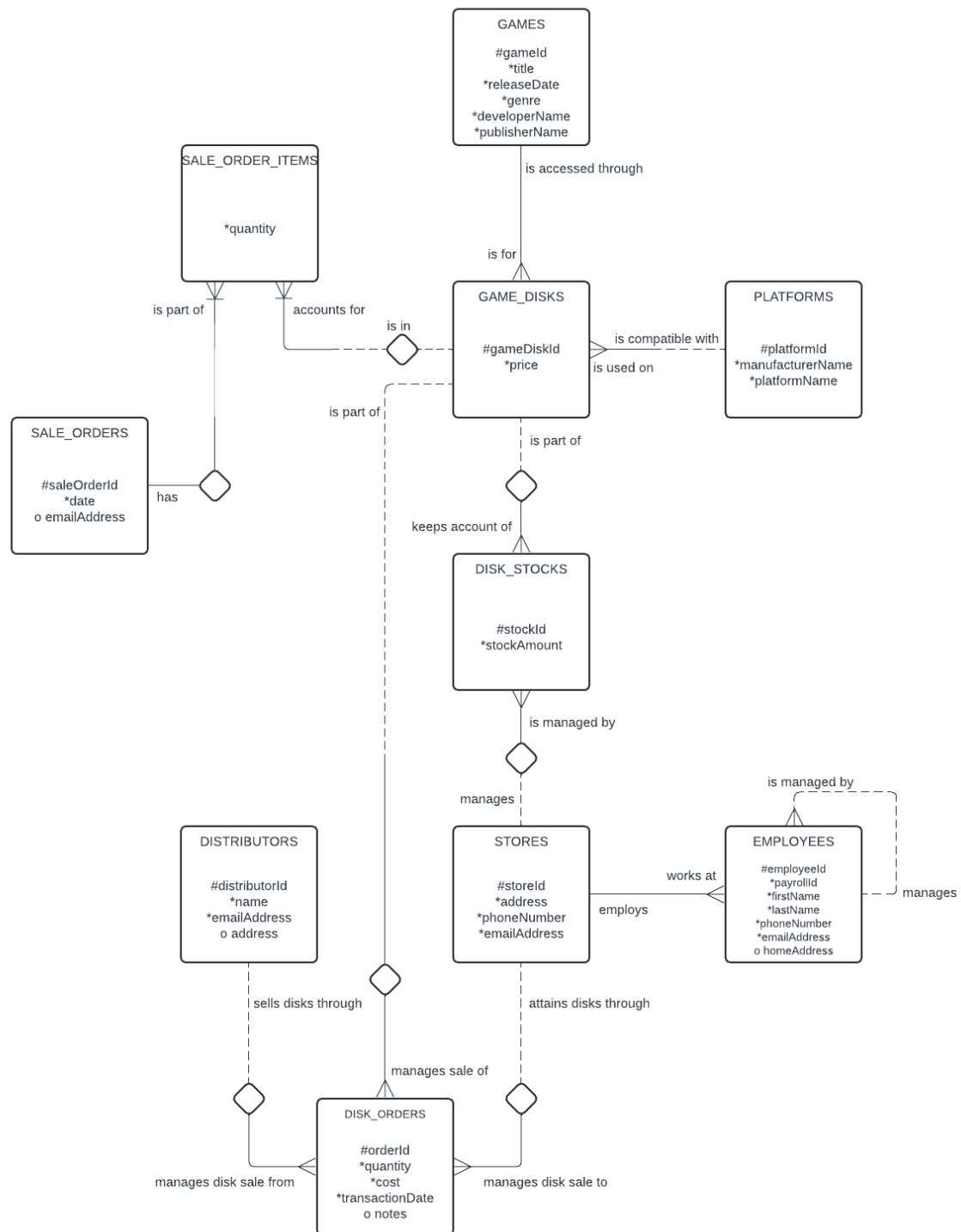## Changes do the design document and EERD

I've decided that the business database could include not only details of orders made between the business and a distributor, but also just a regular customer order. Here's is the addition I would include to the business description:

Details of sales between the business and consumers would be recorded in the database as well. This would be done by storing a separate entity called 'sale order', which would link to several 'sale order items'. Sale order item would be a junction between a sale order and a game disk and would keep track of quantity of a game disk.

Below is the modified section of the EER diagram:

Also included the entire EER diagram for reference:

Normalisation and Table List

All the entities conform to 3NF. All entities contain columns with atomic values and all non-primary-key attributes have no transitive dependencies. The list below contains all the tables (entities) and their attributes:

Games (gameId, title, releaseDate, genre, developerName, publisherName)

Game_disks (gameDiskId, price, gameId, platformId)

Platforms (platformId, manufacturerName, platformName)

Sale_orders (saleOrderId, date, emailAddress)

Sale_order_items (quantity, saleOrderId, gameDiskId)

Disk_stocks (stockId, stockAmount, gameDiskId, storeId)

Stores (storeId, address, phoneNumber, emailAddress)

Employees (employeeId, payrollId, firstName, lastName, phoneNumber, emailAddress, homeAddress, managerId, storeId)

Disk_orders (orderId, quantity, cost, transactionDate, notes, storeId, distributorId, gameDiskId)

Distributors (distributorId, name, emailAddress, address)

Table Mapping

Games					
Field	**Type**	**Size**	**Default**	**Constraints**	**Description**
gameId	INT		AUTO INCRE MENT	PK	The ID of the game
title	VARCHAR	200		NOT NULL	The title of the game
releaseDat e	DATE			NOT NULL	The date the game released on
genre	VARCHAR	30		NOT NULL	The genre of the game
developerN ame	VARCHAR	50		NOT NULL	The name of the game's developer
publisherN ame	VARCHAR	50		NOT NULL	The name of the game's publisher

Game_disks					
Field	**Type**	**Size**	**Default**	**Constraints**	**Description**
gameDiskI d	INT		AUTO INCRE MENT	PK	The ID of the disk
price	DECIMAL	5,2		NOT NULL	The price of the disk
platformId	INT			FK NOT NULL	The ID of the platform the disk is for
gameId	INT			FK NOT NULL	The ID of the game the disk has

Platforms					
Field	**Type**	**Size**	**Default**	**Constraints**	**Description**
platformId	INT		AUTO INCRE MENT	PK	The ID of the platform
manufactur erName	VARCHAR	40		NOT NULL	The name of the platform's manufacturer
platformNa me	VARCHAR	40		NOT NULL	The name of the platform

Sale_orders

Field	Type	Size	Default	Constraints	Description
saleOrderId	INT		AUTO INCREMENT	PK	The ID of the sale order
date	DATE			NOT NULL	The date the sale took place
emailAddress	VARCHAR	60			The email of the consumer

Sale_order_items

Field	Type	Size	Default	Constraints	Description
quantity	INT			NOT NULL	The quantity of the disk bought
saleOrderId	INT			FK NOT NULL	The ID of the sale the item is part of
gameDiskId	INT			FK NOT NULL	The ID of the disk bought

Disk_stocks

Field	Type	Size	Default	Constraints	Description
stockId	INT		AUTO INCREMENT	PK	The ID of the disk stock
stockAmount	INT			NOT NULL	The stock amount of a disk
gameDiskId	INT			FK NOT NULL	The ID of the disk the stock keeps account of
storeId	INT			FK NOT NULL	The ID of the store the stock belongs to

Stores

Field	Type	Size	Default	Constraints	Description
storeId	INT		AUTO INCREMENT	PK	The ID of the store
address	VARCHAR	200		NOT NULL	The physical address of the store
phoneNumber	INT	20		NOT NULL	The phone number of the store
emailAddress	VARCHAR	60		NOT NULL	The email address of the store

Employees

Field	Type	Size	Default	Constraints	Description
employeeId	INT		AUTO INCREMENT	PK	The ID of the employee
payrollId	INT		AUTO INCREMENT	UNIQUE	The ID of the employee's payroll
firstName	VARCHAR	50		NOT NULL	The employee's first name
lastName	VARCHAR	50		NOT NULL	The employee's last name
phoneNumber	INT	20		NOT NULL	The employee's phone number
emailAddress	VARCHAR	60		NOT NULL	The email address of the employee
homeAddress	VARCHAR	200			The home address of the employee
storeId	INT			FK NOT NULL	The ID of the store the employee work at
managerId	INT			FK	The ID of the employee's manager

Distributors

Field	Type	Size	Default	Constraints	Description
distributorId	INT		AUTO INCREMENT	PK	The ID of the distributor
name	VARCHAR	50		NOT NULL	The name of the distributor
emailAddress	VARCHAR	60		NOT NULL	The email address of the distributor
address	VARCHAR	200			The physical address of the distributor

Disk_orders					
Field	Type	Size	Default	Constraints	Description
orderId	INT		AUTO INCRE MENT	PK	The ID of the disk order
quantity	INT			NOT NULL	The quantity of the disks in disk order
cost	DECIMAL	12,2		NOT NULL	The cost of the disk order
date	DATE			NOT NULL	The date the order took place
notes	VARCHAR	100			Additional notes about the order
distributorI d	INT			FK NOT NULL	The ID of the distributor who sold the disks
storeId	INT			FK NOT NULL	The ID of the store who purchased the disks
gameDiskI d	INT			FK NOT NULL	The ID of the game disk that is part of the order

SQL Code

The SQL code is in the script uploaded alongside this document on moodle. It has the create tables statements, insert statements (basic data), and 2 select statements, one for list of employees, another for listing number of particular disks sold.