ARCADE MACHINE ER MODEL AND SOURCE CODE

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A diagram of a diagram

Description automatically generated

Source Code:

CREATE Table customer (

cID int PRIMARY KEY,

FirstName varchar(255),

LastName varchar(255),

isMember bool

);

CREATE Table address (

addrID int PRIMARY KEY,

street varchar(255) UNIQUE,

city varchar(255),

zipCode char(5)

);

CREATE Table business (

bID int PRIMARY KEY,

BusinessName varchar(255)

);

CREATE Table videogame (

videogameID int PRIMARY KEY,

genre varchar(255),

ageRating varchar(3), --thingslike 3-10, 13+, etc

playerCount int,

expectedTickets int, --can be 0 if doesn't give tickets

isCompetitive bool,

reviewScore int --out of 5 stars

);

Create Table craneGame (

cranegameID int PRIMARY KEY,

craneSize varchar(6), --small, medium, large

gripChance DECIMAL(3,2), --crane games actually have random chance to fully grip

CHECK (gripChance > 0 AND gripChance <= 1)

);

CREATE Table game (

gameID int PRIMARY KEY,

gameName TEXT,

dayPrice int,

widthDim DECIMAL(5, 2),

lengthDim DECIMAL(5, 2),

heightDim DECIMAL(5, 2),

releaseDate DATE,

powerUsage int,

videogameID int REFERENCES videogame, --Disjoint, can only be one

cranegameID int REFERENCES cranegame

);

CREATE Table machine (

gameID int REFERENCES game,

machineID int, --Weak entity set, since multiple machines exist for same game

working bool, --is it broken?

PRIMARY KEY (gameID, machineID)

);

CREATE Table prizes (

prizeID int PRIMARY KEY,

shipmentCost DECIMAL(5,2),

shipmentStock int,

numberInShipment int,

prizeSize varchar(6), --small, medium, large

CHECK (shipmentCost > 0)

);

CREATE Table owners (

ownerID int PRIMARY KEY,

customerID int REFERENCES customer, --can only be one, disjoint

businessID int REFERENCES Business, --if one, other is null

accountemail TEXT,

accountPassword TEXT,

phoneNumber varchar(10), --allow only one, but not necessarily unique, like family phone

UNIQUE(customerID,businessID)

);

CREATE Table payInfo (

payInfoID int PRIMARY KEY,

creditCardNum varchar(16), --can be 15 or 16

expirationDate char(4), --not like standard date, xx/xx

securityCode int

);

Create Table orderStatus (

orderID int PRIMARY KEY,

orderDate DATE,

overdueDate DATE, --after this, late fees applied

status varchar(8) --4 statuses: SHIPPED, DELIVERED, PICKUP, RETURNING

);

--RELATIONS

CREATE Table machineOrder (

orderID int REFERENCES orderStatus,

machineID int,

gameID int,

FOREIGN KEY (gameID,machineID) REFERENCES machine(gameID,machineID)

);

CREATE Table orderOwner (

orderID int REFERENCES orderStatus,

ownerID int REFERENCES owners

);

CREATE Table cranePrize (

prizeID int REFERENCES prizes, --different machines can use same prize

craneGameID int REFERENCES craneGame --and different prizes in same machine

);

CREATE Table machineAddr (

gameID int,

machineID int,

addrID int REFERENCES address, --null if in middle of delivery, else at location or storage

FOREIGN KEY (gameID,machineID) REFERENCES machine(gameID,machineID)

);

CREATE Table ownerPay (

ownerID int REFERENCES owners UNIQUE,

payInfoID int REFERENCES payInfo --different users can have same payment method, like family card

);

CREATE table ownerAddr(

ownerID int REFERENCES owners UNIQUE,

addrID int REFERENCES address

);

CREATE Table auction (

gameID int,

machineID int UNIQUE,

highestBidder int REFERENCES owners,

bidAmount DECIMAL(9,2),

FOREIGN KEY (machineID,gameID) REFERENCES machine(gameID, machineID)

);