ISYS2120 Sem2, 2024

Assignment 1 (Relational schema)

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SID:

PART A

A diagram of a company

Description automatically generatedYour relational schema diagram here (add additional pages as necessary)

PART B

Your SQL DDL here (exactly as in the .sql text file)

CREATE TABLE Agent(

AgentID INT PRIMARY KEY,

AFirstName VARCHAR(32) NOT NULL,

ALastName VARCHAR(32) NOT NULL,

APhone VARCHAR(20) NOT NULL

);

CREATE TABLE Customer (

CustomerID INT PRIMARY KEY,

CFirstName VARCHAR(32) NOT NULL,

CLastName VARCHAR(32) NOT NULL,

CMailAddress VARCHAR(20) NOT NULL,

CPhone VARCHAR(20) NOT NULL

);

CREATE TABLE CustomerAgent (

-- The Relationship 'KnowTo'

-- The ER diagram indicates that every customer should be known by at least one agent.

-- However, this constraint cannot be directly enforced using standard SQL constraints.

-- It requires additional mechanisms to ensure that every customer is indeed associated with at least one agent.

CustomerID INT REFERENCES Customer(CustomerID),

AgentID INT REFERENCES Agent(AgentID),

LatestContactDate DATE,

PRIMARY KEY(CustomerID,AgentID)

);

CREATE TABLE Owner (

CustomerID INT PRIMARY KEY REFERENCES Customer(CustomerID),

-- The TFN is an 8 (older numbers) or 9-digit number

TFN VARCHAR(9) NOT NULL,

BankAcct VARCHAR(20) NOT NULL,

MgtFeeRate FLOAT NOT NULL

);

CREATE TABLE Renter (

CustomerID INT PRIMARY KEY REFERENCES Customer(CustomerID),

BALANCE FLOAT NOT NULL

);

CREATE TABLE Complex (

PRIMARY KEY (Address, Suburb),

NumberOfApts INT NOT NULL,

Address VARCHAR(255),

Suburb VARCHAR(32),

OwnerID INT REFERENCES Owner(CustomerID) NOT NULL,

EndDate DATE NOT NULL

);

CREATE TABLE Facility(

-- Facility attribute in Complex

PRIMARY KEY (Address,Suburb,FacilityName),

Address VARCHAR(255),

Suburb VARCHAR(32),

FacilityName VARCHAR(255),

FOREIGN KEY (Address, Suburb) REFERENCES Complex(Address, Suburb)

);

CREATE TABLE Apartment (

-- Apartment's attributes

ANumber INT,

Bedrooms INT,

Area VARCHAR(128),

-- Strong Entity: Complex

Address VARCHAR(255),

Suburb VARCHAR(32),

-- Relation LocateIn's attribute

AptFloor INT NOT NULL,

-- Weak Entity: Combine Strong entity's pk with discriminator As its PK

PRIMARY KEY (ANumber, Address, Suburb),

FOREIGN KEY (Address, Suburb) REFERENCES Complex(Address, Suburb),

-- Owner

OwnerID INT REFERENCES Owner(CustomerID) NOT NULL,

-- Renter

RenterID INT UNIQUE,

EndDate DATE NOT NULL,

WeeklyRent FLOAT,

FOREIGN KEY (RenterID) REFERENCES Renter(CustomerID),

-- Agent

AgentID INT REFERENCES Agent(AgentID) NOT NULL

);

CREATE TABLE DaysWorking(

AgentID INT REFERENCES Agent(AgentID),

Days VARCHAR(32),

PRIMARY KEY (AgentID,Days)

);

CREATE TABLE OffersFor(

Duration VARCHAR(32) NOT NULL,

OfferedRent FLOAT NOT NULL,

PRIMARY KEY(RenterID,Address,Suburb,ANumber),

RenterID INT REFERENCES Renter(CustomerID),

Address VARCHAR(20),

Suburb VARCHAR(20),

ANumber INT,

FOREIGN KEY (Address,Suburb,ANumber) REFERENCES Apartment(Address,Suburb,ANumber)

)