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---#Challenge 2:

--Imagine you are designing a database schema for a system that manages workers' compensation claims and uses machine learning models for prediction and analysis.

--Objective 2.1:

--Design the database schema with appropriate tables to store the following information:

--1.    Workers' details

--2.    Claims data

--3.    Machine learning model predictions (Use Model from Challenge 1)

--Provide the SQL schema for the database, including table definitions, primary keys, foreign keys, and any necessary relationships or constraints.

--Schema Workers' details

CREATE TABLE Workers (

    WorkerId INT PRIMARY KEY,

    WorkerName VARCHAR(100) NOT NULL,

    DateOfBirth DATE,

    Occupation VARCHAR(100),

    CONSTRAINT chk\_DateOfBirth CHECK (DateOfBirth <= CURRENT\_DATE)--incase incorrect DOB has been added

);

--2.    Claims data

CREATE TABLE Claims (

    CaseNumber INT PRIMARY KEY,

    WorkerId INT,

    ClaimDate DATE,

    ClaimCost DECIMAL(12, 2),

    Litigation VARCHAR(3) CHECK (Litigation IN ('YES', 'NO')),

    LossType VARCHAR(50),

    Carrier VARCHAR(50),

    Sector/Industry VARCHAR(100),

    HighCost BIT,

    FOREIGN KEY (WorkerId) REFERENCES Workers(WorkerId)

);

--3.    Machine learning model predictions (Use Model from Challenge 1)

CREATE TABLE ModelPredictions (

    PredictionId INT PRIMARY KEY,

    CaseNumber INT,

    Prediction FLOAT,

    ModelName VARCHAR(50),

    PredictionDate DATE,

    FOREIGN KEY (CaseNumber) REFERENCES Claims(CaseNumber)

);

--Objective 2.2:

--Provide SQL queries to:

--1.    Retrieve workers' details along with their total claimed costs.

SELECT

    w.WorkerId,

    w.WorkerName,

    SUM(c.ClaimCost) AS TotalCost

FROM Workers w

LEFT JOIN Claims c ON w.WorkerId = c.WorkerId

GROUP BY w.WorkerId, w.WorkerName;

--2.    Calculate average claim costs based on industry types.

SELECT

    Sector/Industry,

    AVG(ClaimCost) AS AverageClaimCost

FROM Claims

GROUP BY Sector/Industry;