Create ppt for the this project : Insurance claims Analysis

--Task 1: Database Schema Creation

--Define tables: Customers, Policies, Claims, PolicyTypes,

--Include fields such as CustomerID, PolicyID, ClaimID, PolicyTypeID, ClaimAmount, ClaimDate,

--PolicyStartDate, PolicyEndDate, etc.

---Customers Table---------

CREATE TABLE Customers (

CustomerID SERIAL PRIMARY KEY,

FirstName VARCHAR(50),

LastName VARCHAR(50),

DateOfBirth DATE,

Gender CHAR(1),

Address VARCHAR(100),

City VARCHAR(50),

State VARCHAR(50),

ZipCode VARCHAR(10)

);

---2. PolicyTypes Table---------

CREATE TABLE PolicyTypes (

PolicyTypeID SERIAL PRIMARY KEY,

PolicyTypeName VARCHAR(50),

Description TEXT

);

---3. Policies Table

CREATE TABLE Policies (

PolicyID SERIAL PRIMARY KEY,

CustomerID INT REFERENCES Customers(CustomerID),

PolicyTypeID INT REFERENCES PolicyTypes(PolicyTypeID),

PolicystartDate DATE,

PolicyEndDate DATE,

Premium DECIMAL(10,2)

);

---- 4. Claims Table

CREATE TABLE Claims (

ClaimID SERIAL PRIMARY KEY,

PolicyID INT REFERENCES Policies(PolicyID),

ClaimDate DATE,

ClaimAmount DECIMAL(10,2),

ClaimDescription TEXT,

ClaimStatus VARCHAR(50)

);--Task 2: Data Population

--Insert realistic sample data into each table, ensuring a variety of scenarios are represented,

--Such as different policy types, claims amounts, and customer profiles.

INSERT INTO PolicyTypes (PolicyTypeName, Description) VALUES

('Auto', 'Insurance coverage for automoblies'),

('Home', 'Insurance coverage for residential homes'),

('Life', 'Long-term insurance coverage upon the policyholder''s death'),

('Health', 'Insurance coverage for medical and surgical expenses');

INSERT INTO Customers (FirstName, LastName, DateOfBirth, Gender, Address, City, State, ZipCode) VALUES

('John', 'Doe', '1980-04-12', 'M', '123 Elm St', 'Springfield', 'IL', '62704'),

('Jane', 'Smith', '1975-09-23', 'F', '456 Maple Ave', 'Greenville', 'Tx', '75402'),

('Emily', 'Johnson', '1990-01-17', 'F', '789 Oak Dr', 'Phoenix', 'AZ', '85001'),

('Micheal', 'Brown', '1985-07-30', 'M', '321 Pine St', 'Riverside', 'CA', '92501');

INSERT INTO Policies (PolicyID, CustomerID, PolicyTypeID, PolicyStartDate, PolicyEndDate, Premium)

VALUES

(1, 1, 1, '2023-01-01', '2024-01-01', 1200.00),

(2, 2, 2, '2023-02-15', '2024-02-15', 800.50),

(3, 3, 1, '2023-03-10', '2024-03-10', 1350.75),

(4, 4, 3, '2023-04-01', '2024-04-01', 2000.00),

(5, 5, 2, '2023-05-20', '2024-05-20', 950.25);

INSERT INTO Claims (PolicyID, ClaimDate, ClaimAmount, ClaimDescription, ClaimStatus)

VALUES

(1, '2023-06-15', 500.00, 'Car accident', 'Approved'),

(2, '2023-07-20', 1000.00, 'House fire', 'Pending'),

(3, '2023-08-05', 2000.00, 'Life insurance claim', 'Approved'),

(4, '2023-09-10', 150.00, 'Doctor visit', 'Denied'),

(5, '2023-10-22', 300.00, 'Car theft', 'Approved');

--Task 3: Analytical Queries

--Write a query to calculate the total number of claims per policy type.

--Use analytical functions to determine the monthly claim frequency and average claim amount.

SELECT

pt.PolicyTypeName,

COUNT(c.ClaimID) AS TotalClaims

FROM

Claims c

JOIN

Policies p ON c.PolicyID = p.PolicyID

JOIN

PolicyTypes pt ON p.PolicyTypeID = pt.PolicyTypeID

GROUP BY

pt.PolicyTypeName

ORDER BY

TotalClaims DESC;

---Query 2: Monthly CLaims Frequency and Average Claim Amount

SELECT

DATE\_TRUNC('month', ClaimDate) AS ClaimMonth,

COUNT(\*) AS ClaimFrequency,

AVG(ClaimAmount) AS AverageClaimAmount

FROM

Claims

GROUP BY

ClaimMonth

Order BY

ClaimMonth;--Task 4: 4. Optimization with

--Discuss the creation of indexes on any columns used frequently in WHER clauses or as join keys to improve performance.

CREATE INDEX idx\_claims\_claimdate ON Claims(ClaimDate);--Task 5: Roles and Permissions

-- Create Roles: ClaimsAnalyst and ClaimsManager.

-- The 'ClaimsAnalyst' role should have read-only access to claims and policy data.

-- The 'ClaimsManager' role should have full access to claims data and the ability to update policy information.

CREATE ROLE ClaimsAnalyst LOGIN PASSWORD 'password1';

--Create ClaimsManager Role

CREATE ROLE ClaimsManager LOGIN PASSWORD 'password2';

--Grant selects the necessary tables

GRANT SELECT ON Claims, Policies, PolicyTypes TO ClaimsAnalyst;

GRANT SELECT, INSERT, UPDATE, DELETE ON Claims, Policies, PolicyTypes TO ClaimsManager;