-- CREATE TABLES

CREATE TABLE EMPLOYEE (

EmployeeID int NOT NULL,

EmployeeFullName varchar(45) NOT NULL,

EmailAddress varchar(45) NOT NULL,

Address varchar(45) NOT NULL,

HiringDate varchar(45) NOT NULL,

PhoneNumber varchar(45) NOT NULL,

OrderID int NOT NULL,

PRIMARY KEY (EmployeeID)

);

INSERT INTO EMPLOYEE VALUES (1000,'Aram Esmaeili','Aram@gmail.com','1 woodrof avenue, Ottawa, ON','1/1/2020','123-456-8520',111);

INSERT INTO EMPLOYEE VALUES (2000, 'Mahdy Dellawari', 'Mahdy@gmail.com', '2 woodrof avenue, Ottawa, ON','2/1/2020', '321-258-4569', 112);

INSERT INTO EMPLOYEE VALUES (3000, 'Mahsa Danesh', 'Mahsa@gmail.com', '3 woodrof avenue, Ottawa, ON','3/1/2020', '321-548-7516', 113);

INSERT INTO EMPLOYEE VALUES (4000, 'Rustom', 'Rustom@gmail.com', '4 woodrof avenue, Ottawa, ON', '4/1/2020','957-586-7841', 114);

INSERT INTO EMPLOYEE VALUES (5000, 'Vishali M', 'Vishali@gmail.com', '5 woodrof avenue, Ottawa, ON','5/1/2020', '658-321-6598', 115);

drop table CUSTOMER;

CREATE TABLE CUSTOMER (

CustomerID int NOT NULL,

CustomerName varchar(45) NOT NULL,

Address varchar(45) NOT NULL,

PhoneNumber varchar(45) NOT NULL,

EmailAddress varchar(45) NOT NULL,

OrderID int NOT NULL,

PRIMARY KEY (CustomerID)

);

INSERT INTO CUSTOMER VALUES (1100,'Roly Roy','1 Baseline Rd, Ottawa, ON','256-526-5656','R@gmail.com', 111);

INSERT INTO CUSTOMER VALUES (2200,'Daniel K','2 Baseline Rd, Ottawa, ON','258-654-9514','D@gmail.com', 112);

INSERT INTO CUSTOMER VALUES (3300,'Hala Own','3 Baseline Rd, Ottawa, ON','123-654-7890','H@gmail.com', 113);

INSERT INTO CUSTOMER VALUES (4400,'Mathew O','4 Baseline Rd, Ottawa, ON','014-741-0147','M@gmail.com', 114);

INSERT INTO CUSTOMER VALUES (5500,'Amal Ibrahim','5 Baseline Rd, Ottawa, ON','963-357-9510','A@gmail.com', 115);

CREATE TABLE TOOL\_ORDER (

OrderID int NOT NULL,

OrderDate varchar(45) NOT NULL,

ReturnDate varchar(45) NOT NULL,

TotalAmount varchar(45) NOT NULL,

AmountOwing varchar(45) NOT NULL,

DepositMethod varchar (45) NOT NULL,

CustomerID int NOT NULL,

PRIMARY KEY (OrderID)

);

INSERT INTO TOOL\_ORDER VALUES (111,'1/2/2021','2/2/2021','100.00','0.00','Credit Card',1100);

INSERT INTO TOOL\_ORDER VALUES (112,'1/3/2021','2/3/2021','150.00','50.00','Credit Card',2200);

INSERT INTO TOOL\_ORDER VALUES (113,'1/4/2021','2/4/2021','156.00','10.00','Credit Card',3300);

INSERT INTO TOOL\_ORDER VALUES (114,'1/5/2021','3/5/2021','158.00','0.00','Credit Card',4400);

INSERT INTO TOOL\_ORDER VALUES (115,'1/5/2021','5/5/2021','1000.00','52.00','Credit Card',5500);

Alter table CUSTOMER

drop column ORDERID;

-- Create History Table for Employee

CREATE TABLE EMPLOYEE\_HISTORY (

EmployeeID int,

EmployeeFullName varchar(45),

EmailAddress varchar(45),

Address varchar(45),

HiringDate varchar(45),

PhoneNumber varchar(45),

OrderID int,

ChangeType varchar(10), -- INSERT, UPDATE, DELETE

ChangeDate timestamp,

PRIMARY KEY (EmployeeID, ChangeDate)

);

--create Trigger for Employee

--EMPLOYEE INSERT TRIGGER

CREATE OR REPLACE TRIGGER EMPLOYEE\_INSERT\_TRIGGER

AFTER INSERT ON EMPLOYEE

FOR EACH ROW

BEGIN

INSERT INTO EMPLOYEE\_HISTORY VALUES (

:NEW.EmployeeID,

:NEW.EmployeeFullName,

:NEW.EmailAddress,

:NEW.Address,

:NEW.HiringDate,

:NEW.PhoneNumber,

:NEW.OrderID,

'INSERT',

SYSTIMESTAMP

);

END;

--EMPLOYEE UPDATE TRIGGER

CREATE OR REPLACE TRIGGER EMPLOYEE\_UPDATE\_TRIGGER

BEFORE UPDATE ON EMPLOYEE

FOR EACH ROW

BEGIN

IF :OLD.EmployeeFullName != :NEW.EmployeeFullName OR

:OLD.EmailAddress != :NEW.EmailAddress OR

:OLD.Address != :NEW.Address OR

:OLD.HiringDate != :NEW.HiringDate OR

:OLD.PhoneNumber != :NEW.PhoneNumber OR

:OLD.OrderID != :NEW.OrderID THEN

INSERT INTO EMPLOYEE\_HISTORY VALUES (

:OLD.EmployeeID,

:OLD.EmployeeFullName,

:OLD.EmailAddress,

:OLD.Address,

:OLD.HiringDate,

:OLD.PhoneNumber,

:OLD.OrderID,

'UPDATE',

SYSTIMESTAMP

);

END IF;

END;

--EMPLOYEE DELETE TRIGGER

CREATE OR REPLACE TRIGGER EMPLOYEE\_DELETE\_TRIGGER

BEFORE DELETE ON EMPLOYEE

FOR EACH ROW

BEGIN

INSERT INTO EMPLOYEE\_HISTORY VALUES (

:OLD.EmployeeID,

:OLD.EmployeeFullName,

:OLD.EmailAddress,

:OLD.Address,

:OLD.HiringDate,

:OLD.PhoneNumber,

:OLD.OrderID,

'DELETE',

SYSTIMESTAMP

);

END;

--create History table for Customer

CREATE TABLE CUSTOMER\_HISTORY (

CustomerID int,

CustomerName varchar(45),

Address varchar(45),

PhoneNumber varchar(45),

EmailAddress varchar(45),

ChangeType varchar(10), -- INSERT, UPDATE, DELETE

ChangeDate timestamp,

PRIMARY KEY (CustomerID, ChangeDate)

);

-- create Triggers for CUSTOMER

--CUSTOMER INSERT TRIGGER

CREATE OR REPLACE TRIGGER CUSTOMER\_INSERT\_TRIGGER

AFTER INSERT ON CUSTOMER

FOR EACH ROW

BEGIN

INSERT INTO CUSTOMER\_HISTORY VALUES (

:NEW.CustomerID,

:NEW.CustomerName,

:NEW.Address,

:NEW.PhoneNumber,

:NEW.EmailAddress,

'INSERT',

SYSTIMESTAMP

);

END;

-- CUSTOMER UPDATE TRIGGER

CREATE OR REPLACE TRIGGER CUSTOMER\_UPDATE\_TRIGGER

BEFORE UPDATE ON CUSTOMER

FOR EACH ROW

BEGIN

IF :OLD.CustomerName != :NEW.CustomerName OR

:OLD.Address != :NEW.Address OR

:OLD.PhoneNumber != :NEW.PhoneNumber OR

:OLD.EmailAddress != :NEW.EmailAddress THEN

INSERT INTO CUSTOMER\_HISTORY VALUES (

:OLD.CustomerID,

:OLD.CustomerName,

:OLD.Address,

:OLD.PhoneNumber,

:OLD.EmailAddress,

'UPDATE',

SYSTIMESTAMP

);

END IF;

END;

-- CUSTOMER DELETE TRIGGER

CREATE OR REPLACE TRIGGER CUSTOMER\_DELETE\_TRIGGER

BEFORE DELETE ON CUSTOMER

FOR EACH ROW

BEGIN

INSERT INTO CUSTOMER\_HISTORY VALUES (

:OLD.CustomerID,

:OLD.CustomerName,

:OLD.Address,

:OLD.PhoneNumber,

:OLD.EmailAddress,

'DELETE',

SYSTIMESTAMP

);

END;

--Part 3

--Altering the EMPLOYEE\_HISTORY TO ADD Roles column for the purpose of multi\_valued historical data field.

ALTER TABLE EMPLOYEE\_HISTORY

ADD Roles VARCHAR2(255);

-- Update the roles for EmployeeID 1000

UPDATE EMPLOYEE

SET EMPLOYEEFULLNAME ='Aram E',

EMAILADDRESS='aram@gmail.com',

Address ='1 Woodroof',

HIRINGDATE='1-02-2023',

PHONENUMBER ='613-225-9854',

ORDERID = 1

WHERE EmployeeID = 1000;

-- Add more role updates as needed

SELECT \* FROM EMPLOYEE\_HISTORY;

UPDATE EMPLOYEE

SET EMPLOYEEFULLNAME ='N E',

EMAILADDRESS='N@gmail.com',

Address ='1 carling',

HIRINGDATE='10-02-2023',

PHONENUMBER ='613-225-9874',

ORDERID = 114

WHERE EmployeeID = 6000;

insert into EMPLOYEE (EmployeeID, EMPLOYEEFULLNAME,EMAILADDRESS, Address,HIRINGDATE,PHONENUMBER,ORDERID)

values (6000, 'Nic', 'nic@gmail.com', '2 baseline', '05/08/2014', '613-254-9874',114);

Alter table EMPLOYEE\_HISTORY

DROP COLUMN Roles;

SELECT \* FROM CUSTOMER\_HISTORY;