

8_2 LAB

Time: 90 Minutes

Before you begin, make a Backup of the Chinook database in your backups folder.

1. In the Chinook database, the Invoice table doesn't have a column that shows when the record was created or last updated. We want to know the exact time an invoice record was added and who was the user who created the record, so let's create an audit table for tracking this.

First, we'll need to create a new table. We haven't covered table creation, so copy the code shown below to setup our audit table.

```
CREATE TABLE Invoice_Audit(  
Invoice_audit_id INT PRIMARY KEY IDENTITY,  
InvoiceId INT,  
Username VARCHAR(50),  
Date_Added DATETIME)  
GO
```

Once the table exists, create a trigger that, on new record insert into INVOICE, adds the record ID, the user who created it, and the timestamp it was added to the database. Use these values for the test invoice record.

InvoiceId = 641 , customerId = 2, Invoice Date = 2019-02-14 00:00:00.000, Total = 5.99

Check the Invoice_Audit table to verify an audit record was added after the Invoice Insert.

2. Let's make some changes to our Invoice_Audit table. We are going to add a column that indicates what the user did (INSERTED or DELETED). We have not covered how to do this yet, so copy the code below to change the existing table.

```
ALTER TABLE Invoice_audit  
ADD UserAction VARCHAR(20)
```

Next, let's alter the Invoice_Insert Trigger to include the action. Here's the Alter Trigger Code.

```
ALTER TRIGGER [dbo].[invoice_add]
ON [dbo].[Invoice]
AFTER INSERT
AS
INSERT INTO Invoice_Audit (InvoiceId, Username, Date_Added, UserAction)
SELECT
inserted.InvoiceID,
SUSER_SNAME(),
CURRENT_TIMESTAMP,
'INSERTED'
FROM inserted;
GO
```

Now, your next task is to create a new trigger called `invoice_delete`. It will add a record to the `Invoice_Audit` table with the `InvoiceID`, `username`, & `date`. The `UserAction` should have the value "DELETED"

Test the trigger by deleting the invoice with ID 641 from the `invoice` table, and verifying a record was added on delete to the `invoice_audit` table.