**Task No. 1:** Create

* After Insert
* After Update
* After Delete

Triggers on Shippers Table in Northwind Database. Record query and their respective results in output.

**Solution:**

**Audit Table Shipper**

create table Shippers\_Audit(

ShipperID int not null,

CompanyName nvarchar(40) not null,

Phone nvarchar(24),

ActionPerformed nvarchar(20),

date datetime,

Description nvarchar(max))

**Insert**

create trigger TR\_InsertAfter\_For\_Shipper on [Shippers]

after insert

as begin

declare @id int,@companyname nvarchar(50),@phone nvarchar(50)

select @id=[ShipperID],@companyname=[CompanyName],@phone=[Phone] from inserted

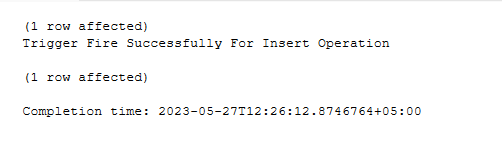
insert into Shippers\_Audit values(@id,@companyname,@phone,'Insert',GETDATE(),

cast(SUSER\_SNAME() as varchar(50))+' Inserted The Value In Shipper Table' )

print ('Trigger Fire Successfully For Insert Operation')

end

**Output:**

insert into Shippers values('Time Square',094512345678)

**Update**

create trigger TR\_InsertUpdate\_For\_Shipper on [Shippers]

after update

as begin

declare @id int,@companyname nvarchar(50),@phone nvarchar(50),

@companyname1 nvarchar(50),@phone1 nvarchar(50)

select @id=[ShipperID],@companyname=[CompanyName],@phone=[Phone] from inserted

select @companyname1=[CompanyName],@phone1=[Phone] from deleted

insert into Shippers\_Audit values(@id,@companyname,@phone,'Update',GETDATE(),

cast(SUSER\_SNAME() as varchar(50))+' Update The Value '+cast(@companyname1 as varchar(50))

+' to '+cast(@companyname as varchar(50)) +' And '+@phone1 +' To '+

@phone+' In Shipper Table' )

print ('Trigger Fire Successfully For Upate Operation')

end

**Output:**

A screenshot of a computer

Description automatically generated with medium confidenceupdate Shippers set CompanyName='New York Time',Phone='1234567789' where ShipperID=9

**Delete**

create trigger TR\_InsertDelete\_For\_Shipper on [Shippers]

after delete

as begin

declare @id int,@companyname nvarchar(50),@phone nvarchar(50)

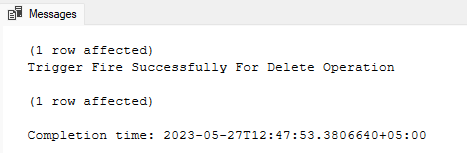
select @id=[ShipperID],@companyname=[CompanyName],@phone=[Phone] from deleted

insert into Shippers\_Audit values(@id,@companyname,@phone,'Delete',GETDATE(),

cast(SUSER\_SNAME() as varchar(50))+' Delete The Row Where ID = '+cast(@id as varchar(10))+' In Shipper Table' )

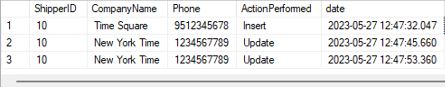
print ('Trigger Fire Successfully For Delete Operation')

end

**Output:**

**Audit Table Shipper**

select \* from Shippers\_Audit



**Task No. 2:** Create

* Instead of Insert
* Instead of Update
* Instead of Delete

Triggers on Orders Table in Northwind Database. Record query and their respective results in output.

**Solution:**

**Audit Table Order**

create table Orders\_Audit(

[OrderID] int NOT NULL,

[CustomerID] nchar(5) NULL,

[EmployeeID] int NULL,

[ShipVia] int NULL,

[Freight] money NULL,

[ShipName] nvarchar(40) NULL,

ActionPerformed nvarchar(50)

)

**Instead of Insert**

create trigger TR\_InsteadOfInsert on Orders

instead of insert

as begin

declare @orderid int,@customerid nchar(5),@employeeid int,@shipvia int,

@freight money, @shipname varchar(40),@action varchar(50);

select @orderid=[OrderID],@customerid=[CustomerID],@employeeid=[EmployeeID],

@shipvia=[ShipVia],@freight=[Freight],@shipname=[ShipName] from inserted ;

set @action='Insert';

begin transaction

if @employeeid > 8

begin

PRINT 'You have entered incorrect employeeid. Please insert the correct information';

Rollback;

end

else

BEGIN

insert into Orders\_Audit values(@orderid,@customerid,@employeeid,@shipvia,@freight,@shipname,@action);

commit;

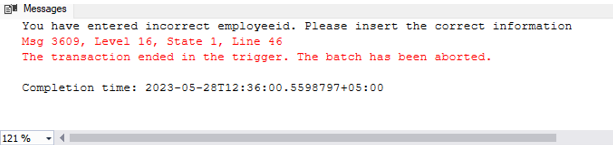
print 'Values Inserted - Trigger Instead of Insert Fired Successfully'

end

end

**Output:** insert into Orders (CustomerID,EmployeeID,ShipVia,Freight,ShipName) values

('Wolza','10','10','00.00','Karachi Express')



**Instead of Update**

select @orderid=[OrderID],@customerid=[CustomerID],@employeeid=[EmployeeID],

@shipvia=[ShipVia],@freight=[Freight],@shipname=[ShipName] from inserted ;

set @action='Update - Instead of Trigger';

begin transaction

if @freight < 50

begin

PRINT 'Too low freight. Data cannot be updated';

Rollback;

end

else

BEGIN

insert into Orders\_Audit values(@orderid,@customerid,@employeeid,@shipvia,@freight,@shipname,@action);

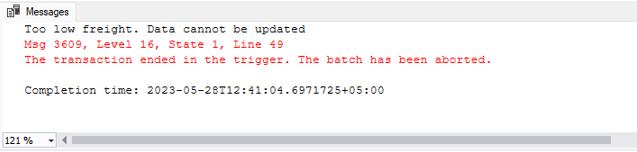
commit;

print 'Values Inserted - Trigger Instead of Insert Fired Successfully';

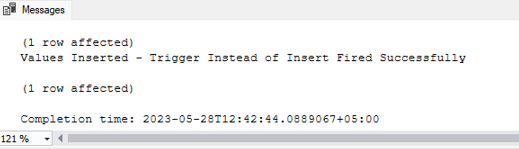
END

end

**Output:** update Orders set Freight=49 where OrderID=11044



update Orders set Freight=51 where OrderID=11044



**Instead of Delete**

create trigger TR\_InsteadOfDelete on Orders

instead of delete

as begin

declare @orderid int,@customerid nchar(5),@employeeid int,@shipvia int,

@freight money, @shipname varchar(40),@action varchar(50);

select @orderid=[OrderID],@customerid=[CustomerID],@employeeid=[EmployeeID],

@shipvia=[ShipVia],@freight=[Freight],@shipname=[ShipName] from deleted ;

set @action='Delete - Instead of Trigger';

begin transaction

if @freight > 70

begin

PRINT 'Too high freight. Data cannot be deleted';

Rollback;

end

else

BEGIN

insert into Orders\_Audit values(@orderid,@customerid,@employeeid,@shipvia,@freight,@shipname,@action);

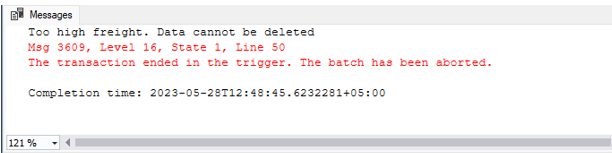
commit;

print 'Values Deleted - Trigger Instead of Delete Fired Successfully';

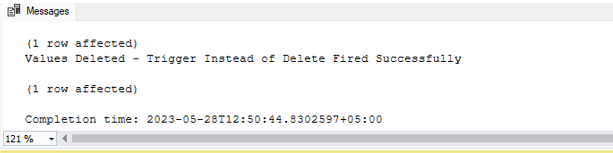
END

end

**Output:** delete from Orders where OrderID=10257



delete from Orders where OrderID=10250



**Audit Table Order**

