# Designing Data Architecture for Business Intelligence

**Assignment:** Data Modeling Chinook

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1. Convert ER Model to Dimensional Model:
- List fact(s) & dimensions:

Facts:-

1. FactInvoice

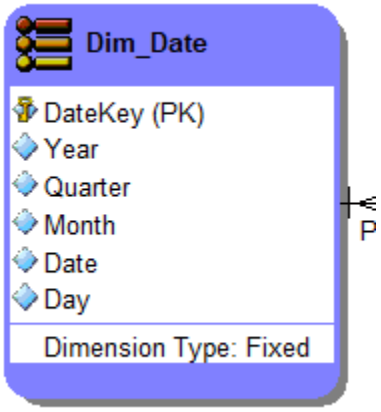
List fact(s) & Dimensions:-

1. DimAlbum
2. DimCustomer
3. DimDate
4. DimEmployee
5. DimGeography
6. DimPlaylist
7. DimTrack

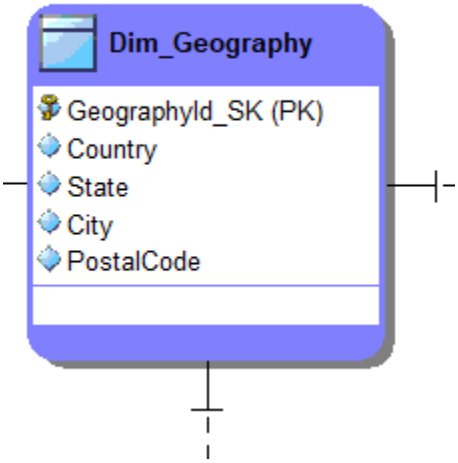
- What Tables will be combined?

The tables Artist, MediaType, Playlist and Genre contained only primary keys. Therefore, we can combine them with the tables which were referenced by the keys resulted into merging Playlist with PlaylistTrack, MediaType and Genre with the DimTrack and Artist with the DimAlbum.

- Create date/calendar dimension:




- Create geography table:



- Determine table attributes:

| Table | Column | Keys |
|---|---|---|
| **DimGeography** | GeographyId_SK | PK |
| **DimGeography** | Country | |
| **DimGeography** | State | |
| **DimGeography** | city | |
| **DimGeography** | Postalcode | |
| **FactInvoiceLine** | InvoiceLineId | PK |
| **FactInvoiceLine** | InvoiceId | FK |
| **FactInvoiceLine** | UnitPrice | |
| **FactInvoiceLine** | Quantity | |
| **FactInvoiceLine** | Track_Sk | FK |
| **FactInvoice** | InvoiceId | PK |
| **FactInvoice** | Total | |
| **FactInvoice** | Customer_SK | FK |
| **FactInvoice** | Date_SK | FK |
| **FactInvoice** | Geography_SK | FK |
| **PlaylistTrack** | Track_SK | FK |
| **PlaylistTrack** | Playlist_SK | FK |
| **DimAlbum** | AlbumID | AK |
| **DimAlbum** | Title | |
| **DimAlbum** | ArtistID | |
| **DimAlbum** | Album_SK | PK |
| **DimPlaylist** | PlaylistID | AK |
| **DimPlaylist** | Name | |
| **DimPlaylist** | Playlist_SK | PK |
| **DimTrack** | Trackid_SK | PK |
| **DimTrack** | Name | |
| **DimTrack** | Composer | |
| **DimTrack** | Milliseconds | |
| **DimTrack** | Bytes | |
| **DimTrack** | MediaType | |
| **DimTrack** | GenreID | |
| **DimTrack** | Album_SK | FK |
| **Customer** | CustomerID_SK | PK |
| **Customer** | FirstName | |
| **Customer** | LastName | |
| **Customer** | Company | |

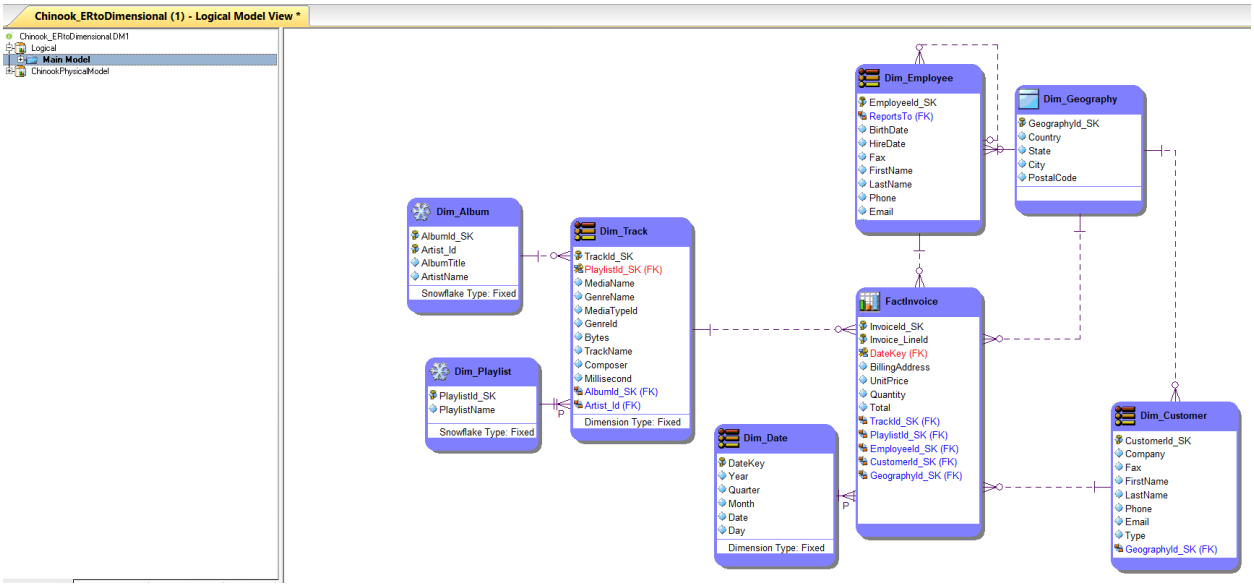
| | | |
|---|---|---|
| **Customer** | Phone | |

| | | |
|---|---|---|
| **Customer** | Fax | |
| **Customer** | Email | |
| **Customer** | Customer_SK | PK |
| **Customer** | Date_SK | FK |
| **Customer** | Employee_SK | FK |
| **Customer** | Geography_SK | FK |
| **DimEmployee** | EmployeeID_SK | PK |
| **DimEmployee** | LastName | |
| **DimEmployee** | FirstName | |
| **DimEmployee** | Title | |
| **DimEmployee** | ReportsTo | FK |
| **DimEmployee** | Phone | |
| **DimEmployee** | Fax | |
| **DimEmployee** | Email | |
| **DimEmployee** | GeographyId | FK |
| **DimEmployee** | Employee_SK | PK |
| **DimDate** | DateKey | PK |
| **DimDate** | MonthName | |
| **DimDate** | CalenderYear | |
| **DimDate** | Date_SK | AK |
| **DimDate** | DayOfMonth | |
| **DimDate** | DayOfTheWeek | |

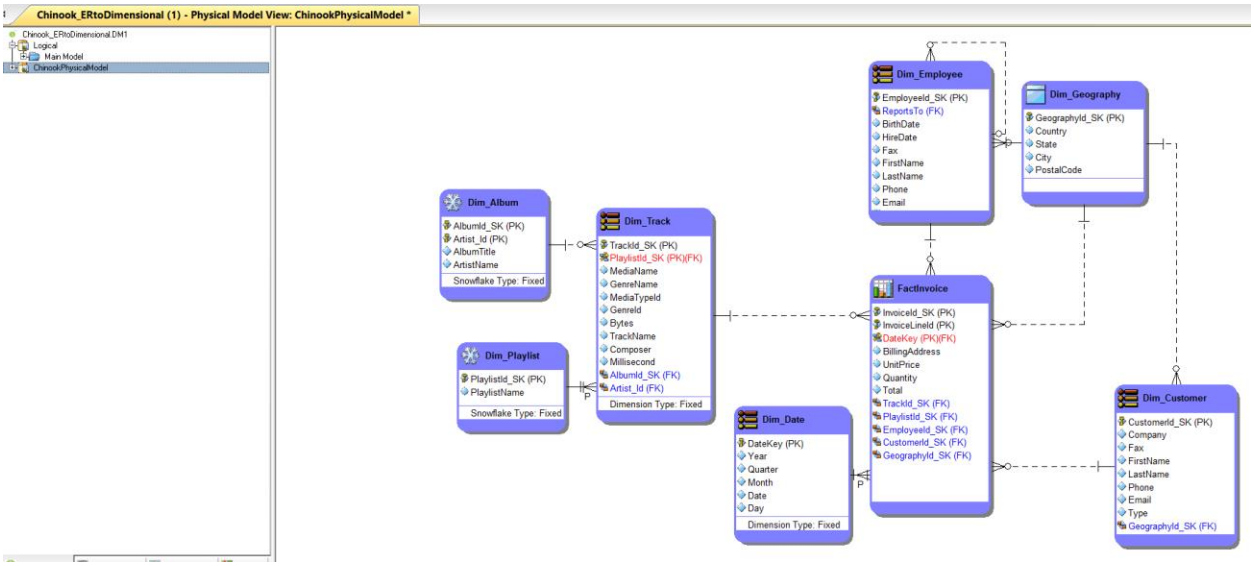
- Map source table(s) to target table
  Target Table is the FactInvoice Table since all the dimensions are connected to the FactInvoice Table. The Source tables are all the dimensions from where all the values are passed to the Fact Table.

2. Create data model in ER/Studio & upload data models

Main model:

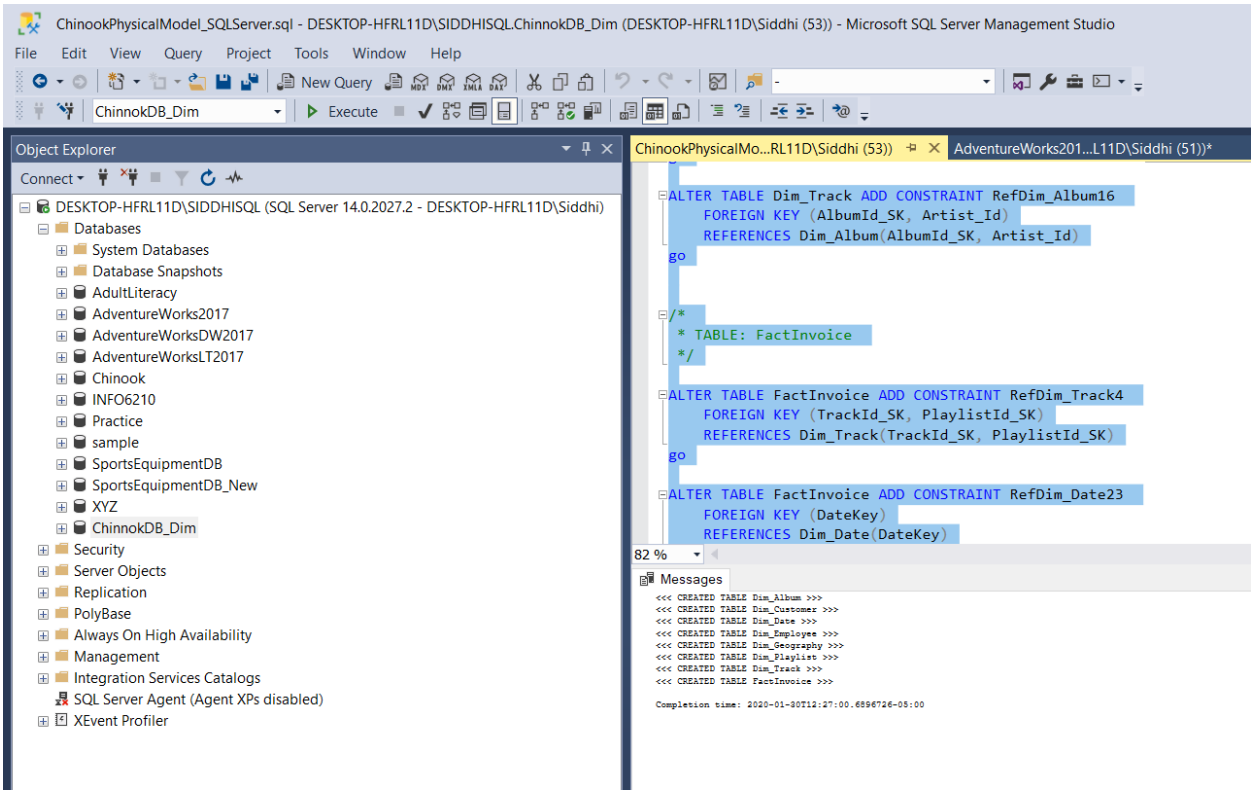


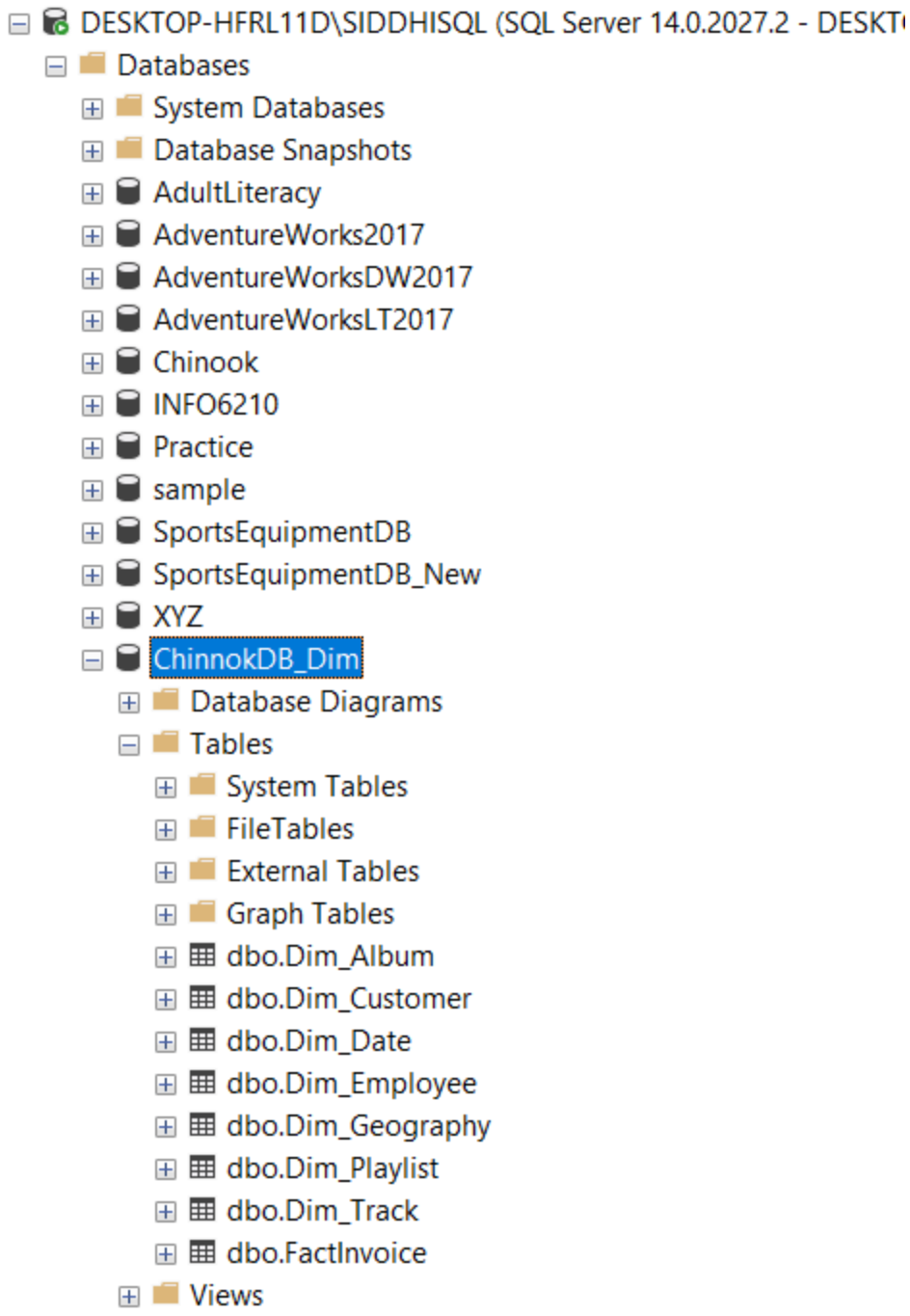

Physical model:



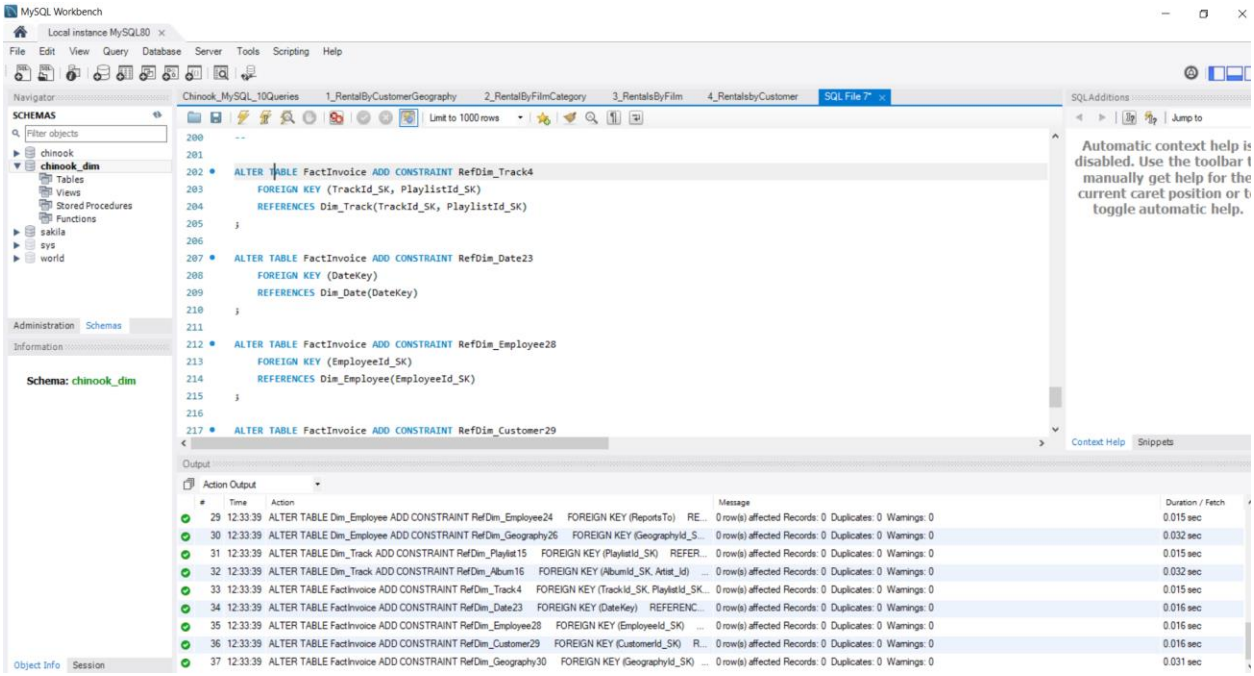
3. **Create DDL & create tables in following databases & upload DDL for each database:**

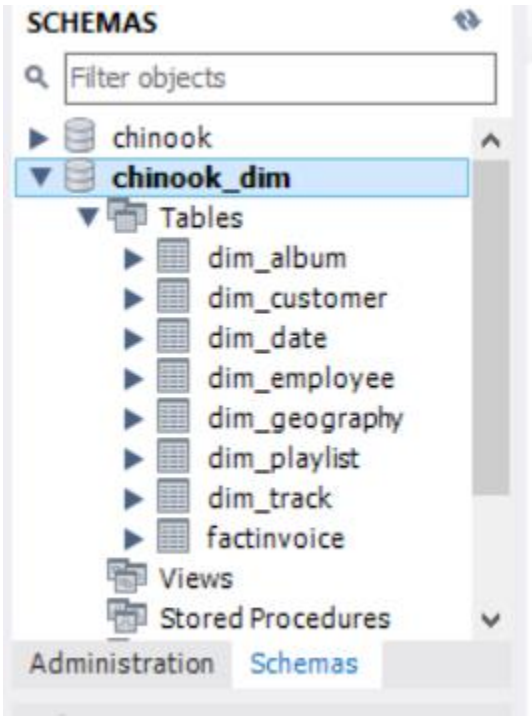
## o SQL Server



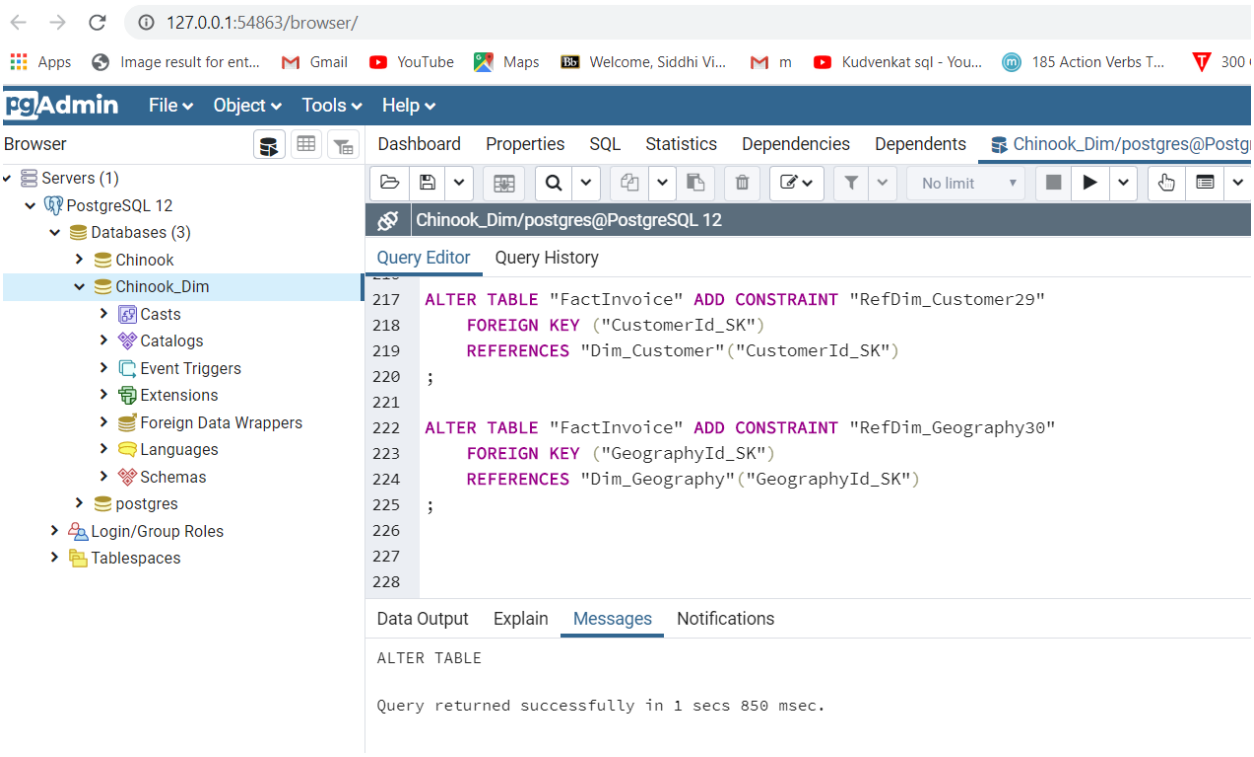

DESKTOP-HFRL11D\SIDDHISQL (SQL Server 14.0.2027.2 - DESKT
Databases
System Databases
Database Snapshots
AdultLiteracy
AdventureWorks2017
AdventureWorksDW2017
AdventureWorksLT2017
Chinook
INFO6210
Practice
sample
SportsEquipmentDB
SportsEquipmentDB_New
XYZ
ChinnokDB_Dim
Database Diagrams
Tables
System Tables
FileTables
External Tables
Graph Tables
dbo.Dim_Album
dbo.Dim_Customer
dbo.Dim_Date
dbo.Dim_Employee
dbo.Dim_Geography
dbo.Dim_Playlist
dbo.Dim_Track
dbo.FactInvoice
Views

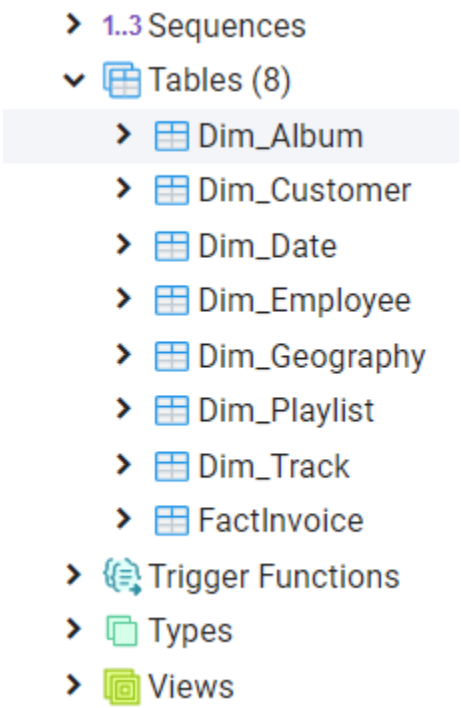
**o MySQL**



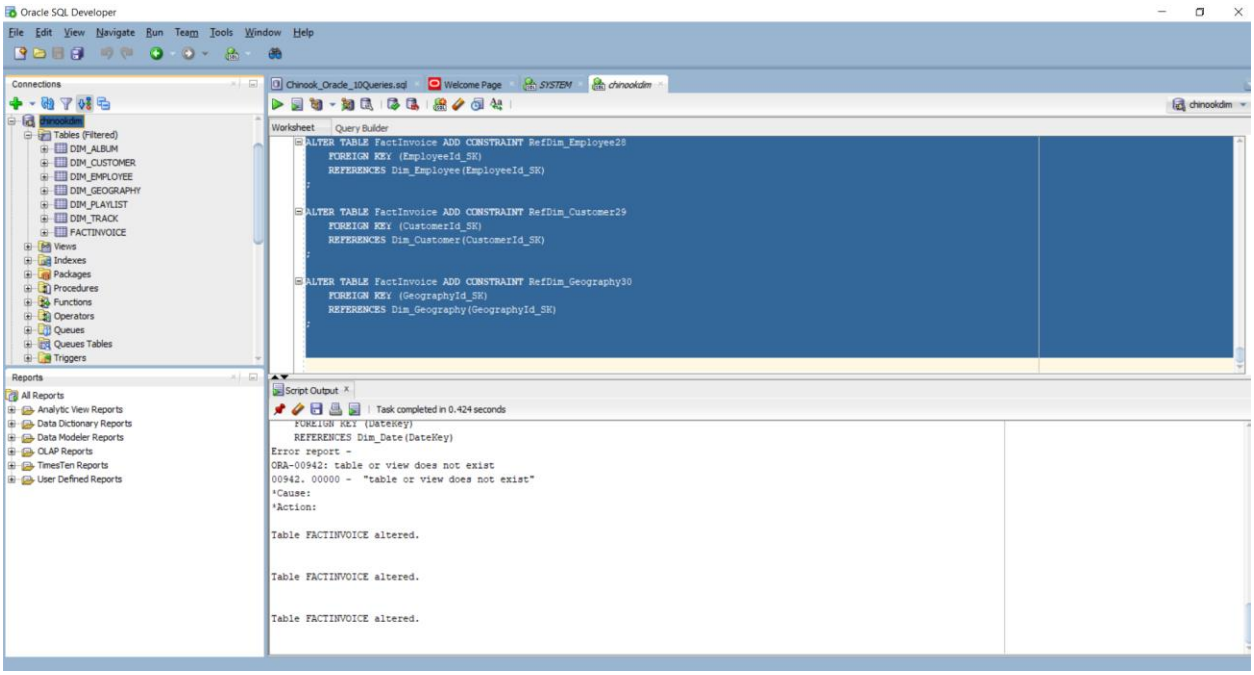




**o PostgreSQL**




**o Oracle 11gR2**


Oracle SQL Developer
File Edit View Navigate Run Team Tools Window Help
Connections
chinookdim
Tables (Filtered)
DIM_ALBUM
DIM_CUSTOMER
DIM_EMPLOYEE
DIM_GEOGRAPHY
DIM_PLAYLIST
DIM_TRACK
FACTINVOICE
Views
Indexes
Packages
Procedures
Functions
Operators
Queues
Queues Tables
Triggers
Reports
All Reports
Analytic View Reports
Data Dictionary Reports
Data Modeler Reports
OLAP Reports
TimesTen Reports
User Defined Reports
Chinook_Oracle_10Queries.sql
Welcome Page
SYSTEM
chinookdim
chinookdim
Worksheet
Query Builder
ALTER TABLE FactInvoice ADD CONSTRAINT RefDim_Employee28
FOREIGN KEY (EmployeeId_SK)
REFERENCES Dim_Employee(EmployeeId_SK)
;
ALTER TABLE FactInvoice ADD CONSTRAINT RefDim_Customer29
FOREIGN KEY (CustomerId_SK)
REFERENCES Dim_Customer(CustomerId_SK)
;
ALTER TABLE FactInvoice ADD CONSTRAINT RefDim_Geography30
FOREIGN KEY (GeographyId_SK)
REFERENCES Dim_Geography(GeographyId_SK)
;
Script Output
Task completed in 0.424 seconds
FOREIGN KEY (DateKey)
REFERENCES Dim_Date(DateKey)
Error report -
ORA-00942: table or view does not exist
00942. 00000 - "table or view does not exist"
*Cause:
*Action:
Table FACTINVOICE altered.
Table FACTINVOICE altered.
Table FACTINVOICE altered.