Library Data Warehouse

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Operational Database »

Book
PK	ID int
	ISBN varchar(20)
	Title varchar(200)
	[Description] varchar(500)
	[Year] int
FK	Publisher_ID int
FK	Category_ID int
FK	Age_Range_ID int
FK	Translator_ID int
FK	Editor_ID int
FK	Language_ID int
	RepublicationNo int
	NumOfPages int
	NumOfEditions int
	NumOfCopiesPrinted int

BookSize
PK	ID int
	[Name] varchar(200)

Book_Volume
PK	ID int
	[Location] varchar(20)
FK	Book_ID int
FK	Branch_ID int
	Price bigint
FK	PhysicalType_ID int
FK	BookSize_ID int
	[Year] int
	NoCopiesPrinted int
	EditionNo int
	RepublicationNo int

Category
PK	ID int
	Name varchar(200)

Borrowed_Books
PK	ID int
	Borrowing_Date date
	Due_Date date
	Returned_Date date
FK	Member_ID int
FK	Employee_ID int
FK	BookV_ID int

Translator
PK	ID int
	Firstname varchar(200)
	Lastname varchar(200)

Author_Book
FK	Author_ID int not null
FK	Book_ID int not null

Publisher
PK	ID int
	[Name] varchar(200)
	Phone varchar(20)
	[Address] varchar(500)
FK	City_ID int

Fine_Paid
PK	ID int
	Payment bigint
	[date] datetime
FK	Borrowed_ID int

PhysicalType
PK	ID int
	[Name] varchar(200)

[Language]
PK	ID int
	[Name] varchar(200)
	abbreviation varchar(20)

Editor
PK	ID int
	Firstname varchar(200)
	Lastname varchar(200)

Age_Range
PK	ID int
	Title varchar(200)
	Description varchar(500)

Author
PK	ID int not null
	Firstname varchar(200)
	Lastname varchar(200)
FK	Country_ID int
FK	Gender_ID int
	BirthYear int
	DeathYear int
	Style varchar(300)

Books

Employee	
PK	ID int
	Firstname varchar(200)
	Lastname varchar(200)
	NationalCode varchar(10)
	[Address] varchar(500)
	Phone varchar(20)
	Hire_Date date
FK	Branch_ID int
FK	Position_ID int
FK	Institute_ID int
FK	Gender_ID int
	Employee_No varchar(20)
	YearOfPassing int
FK	HighestQualificationID int
FK	MaritalStatus bit

Member	
PK	ID int
	Firstname varchar(200)
	Lastname varchar(200)
	NationalCode varchar(15)
	[Address] varchar(500)
	Phone varchar(20)
	Registration_Date date
FK	Branch_ID int
	Registration_Valid_Date date
FK	Gender_ID int
FK	Institute_ID int
	YearOfPassing int
FK	HighestQualificationID int
FK	MaritalStatus bit

Position	
PK	ID int
	Title varchar(200)
	Salary bigint

Qualification	
PK	ID int
	Name varchar(200)

People

Branch

PK	ID int
	[Name] varchar(200)
	[Address] varchar(500)
	BranchCode int
	Phone varchar(20)
FK	City_ID int

Institute

PK	ID int
	Name varchar(200)

City

PK	ID int
	[Name] varchar(200)
FK	Province_ID int

Province

PK	ID int
	[Name] varchar(200)

Country

PK	ID int
	Name varchar(200)

Places

Research_Category

ID int

[Name] varchar(200)

Event_Category

ID int

[Name] varchar(200)

Research_Type

ID int

Name varchar(200)

Research_Member

Member_ID int not null

Research_ID int not null

[Event]

ID int

Title varchar(200)

[Description] varchar(500)

Cost bigint

[Date] datetime

Branch_ID int

Category_ID int

Research_State

ID int

Name varchar(200)

Research

ID int

Title varchar(200)

[Description] varchar(500)

Cost bigint

[StartDate] datetime

[EndDate] datetime

DocumentURL varchar(200)

Branch_ID int

Category_ID int

Research_Type_ID int

Research_State_ID int

Cultural

BuyHeader

PK	ID int
	BooksPay bigint
	TransportPay bigint
	Total_Due bigint
FK	Branch_ID int
FK	Employee_ID int
FK	Suplier_ID int
	[Date] datetime

BuyDetail

PK	ID int
	Header_ID int
	ISBN varchar(100)
	Cost bigint
	Number int

Suplier

PK	ID int
	[Name] varchar(200)
	Phone varchar(20)
	[Address] varchar(500)
FK	City_ID int

Salary

PK	ID int
	Salary bigint
	[Date] datetime
FK	Employee_ID int

Budget

PK	ID int
	Amount bigint
	[Date] datetime
FK	Branch_ID int

MembershipPay

PK	ID int
FK	Member_ID int
	Amount bigint
	[Date] datetime

Financial

Data Warehouse »

Dimensions

dimBook

PK	ID INT NOT NULL
	ISBN VARCHAR(20)
	Title VARCHAR(255)
	[Description] TEXT
	[Year] INT
	Publisher_ID INT
	Publisher_name VARCHAR(255)
	Category_ID INT
	Category_name VARCHAR(255)
	Age_Range_ID INT
	Age_Range_name VARCHAR(255)
	Age_Range_Desc TEXT
	Translator_ID INT
	Translator_fname VARCHAR(255)
	Translator_lname VARCHAR(255)
	Editor_ID INT
	Editor_fname VARCHAR(255)
	Editor_lname VARCHAR(255)
	Language_ID INT
	Language_Name VARCHAR(255)
	Language_Abbreviation VARCHAR(25)
	RepublicationNo INT, --SCD1
	NumOfPages INT
	NumOfEditions INT --SCD1

dimAuthor

PK	ID INT NOT NULL
	Firstname VARCHAR(255)
	Lastname VARCHAR(255)
	Country_ID INT
	Country_name VARCHAR(255)
	Gender_ID INT
	Gender_Name VARCHAR(255)
	BirthYear INT
	DeathYear INT
	Style VARCHAR(350)

dimEditor

PK	ID INT NOT NULL
	Firstname VARCHAR(255)
	Lastname VARCHAR(255)

dimAge_Range

PK	ID INT NOT NULL
	Title VARCHAR(255)
	Description TEXT

dimCategory

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimLanguage

PK	ID INT NOT NULL
	[Name] VARCHAR(255)
	Abbreviation VARCHAR(25)

dimTranslator

PK	ID INT NOT NULL
	Firstname VARCHAR(255)
	Lastname VARCHAR(255)

dimPublisher

PK	ID INT NOT NULL
	[Name] VARCHAR(255)
	Phone VARCHAR(20), --SCD1
	[Address] TEXT
	City_ID INT
	City_name VARCHAR(255)

Dimensions

dimProvince

PK	ID INT NOT NULL
	[Name] VARCHAR(255)

dimCountry

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimCity

PK	ID INT NOT NULL
	[Name] VARCHAR(255)
	Province_ID INT
	Province_name VARCHAR(255)

dimBranch

PK	ID INT NOT NULL
	BranchCode INT
	[Name] VARCHAR(255)
	[Address] VARCHAR(500)
	Phone VARCHAR(20)
	City_ID INT
	City_name VARCHAR(255)

Dimensions

dimDate	
PK	**TimeKey INT NOT NULL**
	FullDateAlternateKey DATE
	PersianFullDateAlternateKey NVARCHAR(20)
	DayNumberOfWeek INT
	PersianDayNumberOfWeek INT
	EnglishDayNameOfWeek VARCHAR(255)
	PersianDayNameOfWeek NVARCHAR(255)
	DayNumberOfMonth INT
	PersianDayNumberOfMonth INT
	DayNumberOfYear INT
	PersianDayNumberOfYear INT
	WeekNumberOfYear INT
	PersianWeekNumberOfYear INT
	EnglishMonthName VARCHAR(255)
	PersianMonthName NVARCHAR(255)
	MonthNumberOfYear INT
	PersianMonthNumberOfYear INT
	CalendarQuarter INT
	PersianCalendarQuarter INT
	CalendarYear INT
	PersianCalendarYear INT
	CalendarSemester INT
	PersianCalendarSemester INT

dimEmployee	
PK	Sur_id INT IDENTITY(1,1) , --Surrogate key
	ID INT
	Firstname VARCHAR(255)
	Lastname VARCHAR(255)
	NationalCode VARCHAR(15)
	[Address] TEXT
	Phone VARCHAR(20)
	Hire_Date DATE
	Branch_ID INT
	Branch_name VARCHAR(255)
	Pre_Position_ID INT, --SCD3
	Pre_Position_Title VARCHAR(255)
	Effective_Date DATETIME DEFAULT '2000-01-01 00
	Cur_Position_ID INT
	Cur_Position_Title VARCHAR(255)
	Institute_ID INT
	Institute_Name VARCHAR(255)
	Gender_ID INT
	Gender_Name VARCHAR(255)
	Employee_No VARCHAR(25)
	YearOfPassing INT
	HighestQualificationID INT
	HighestQualificationName VARCHAR(255)
	MaritalStatusDesc VARCHAR(255)

dimMember	
PK	**ID INT NOT NULL**
	Firstname VARCHAR(255)
	Lastname VARCHAR(255)
	NationalCode VARCHAR(15)
	[Address] VARCHAR(500)
	Phone VARCHAR(20), --SCD1
	Registration_Date DATE
	Branch_ID INT
	BranchCode INT
	Branch_name VARCHAR(255)
	Registration_Valid_Date date
	Gender_ID INT
	Gender_Name VARCHAR(255)
	Institute_ID INT
	Institute_Name VARCHAR(255)
	YearOfPassing INT
	HighestQualificationID INT
	HighestQualificationName VARCHAR(255)
	MaritalStatusDesc VARCHAR(255)

Dimensions

dimSubType

PK	SubTypeKey INT NOT NULL
	Name VARCHAR(255)
	TypeKey INT NOT NULL

dimResearchCategory

PK	ID INT NOT NULL
	[Name] VARCHAR(255)

dimType

PK	TypeKey INT NOT NULL
	Name VARCHAR(255)

dimGender

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimQualification

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimInstitute

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimResearchType

PK	ID INT NOT NULL
	Name VARCHAR(255)

dimPosition

PK	Sur_id INT IDENTITY(1,1)
	ID INT
	Title VARCHAR(255)
	Salary BIGINT, --SCD2
	Start_Date DATETIME DEFAULT '2000-01-01 00:00:
	End_Date DATETIME DEFAULT NULL
	Current_Flag BIT DEFAULT 1

dimSuplier

PK	ID INT NOT NULL
	[Name] VARCHAR(255)
	Phone VARCHAR(20)
	[Address] VARCHAR(500)
	City_ID INT
	City_name VARCHAR(255)

dimEventCategory

PK	ID INT NOT NULL
	[Name] VARCHAR(255)

SCDs

- dimBook, RepublicationNo, SCD1
- dimBook, NumOfEditions, SCD1
- dimPublisher, phone, SCD1
- dimPublisher, Address, SCD1
- dimBranch, phone, SCD1
- dimBranch, Address, SCD1
- dimEmployee, Position, SCD3
- dimEmployee, Institute, SCD1
- dimEmployee, HighestQualification, SCD1
- dimEmployee, MaritalStatus, SCD1
- dimMember, phone, SCD3
- dimMember, Institute, SCD1
- dimMember, HighestQualification, SCD1
- dimMember, MaritalStatus, SCD1
- dimPosition, Salary, SCD2

Financial Datamart
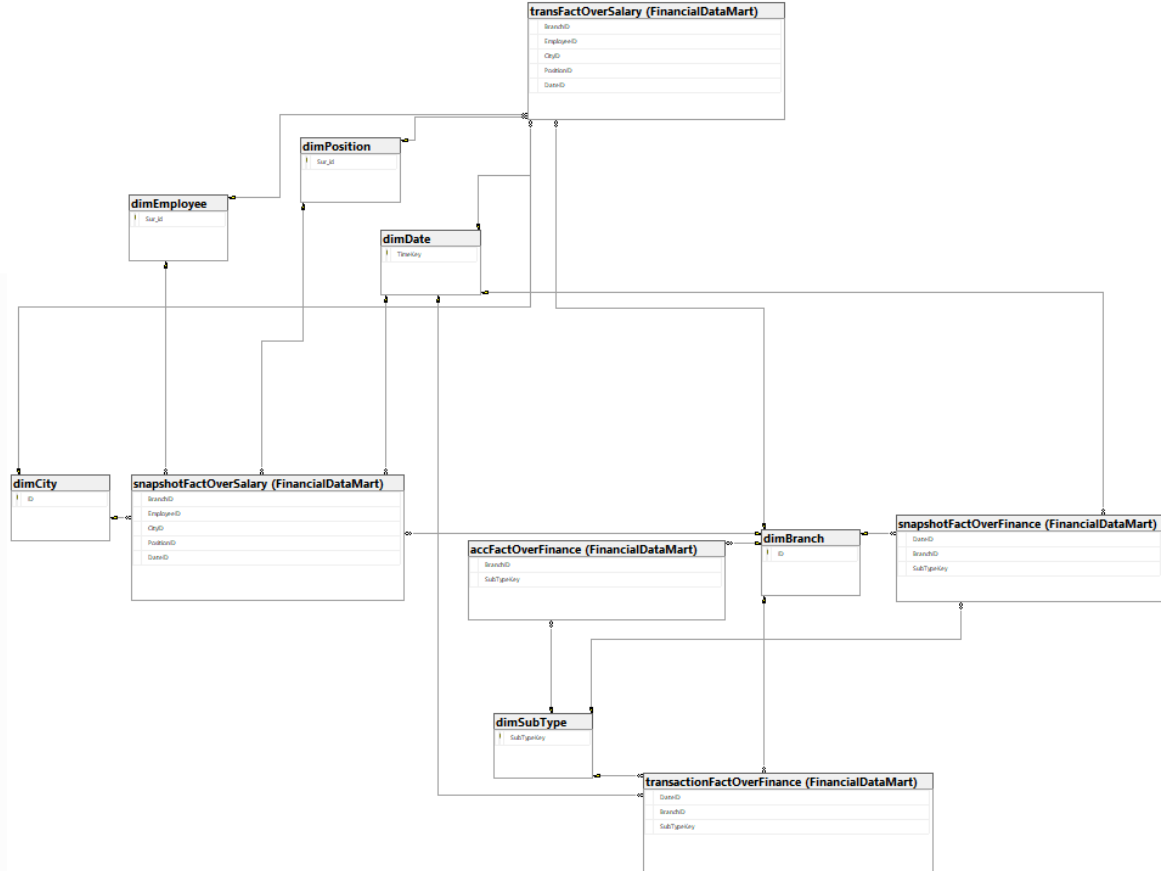
Financial Datamart : Transactional Fact
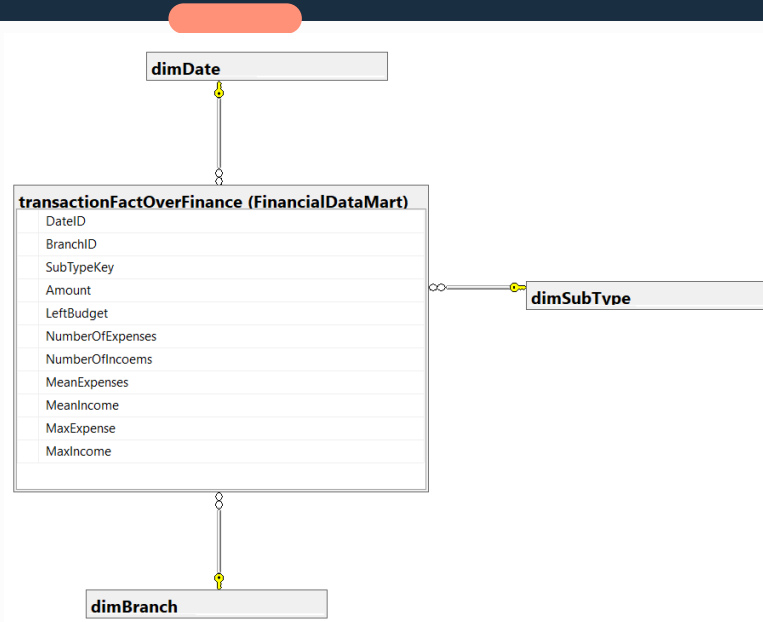
Financial Datamart : Monthly Periodic Snapshot Fact

dimBranch

snapshotFactOverFinance (FinancialDataMart)

| DateID |
| BranchID |
| SubTypeKey |
| LeftBudget |
| SumExpense |
| SumIncome |
| NumberOfIncomes |
| NumberOfExpenses |

dimSubType

dimDate
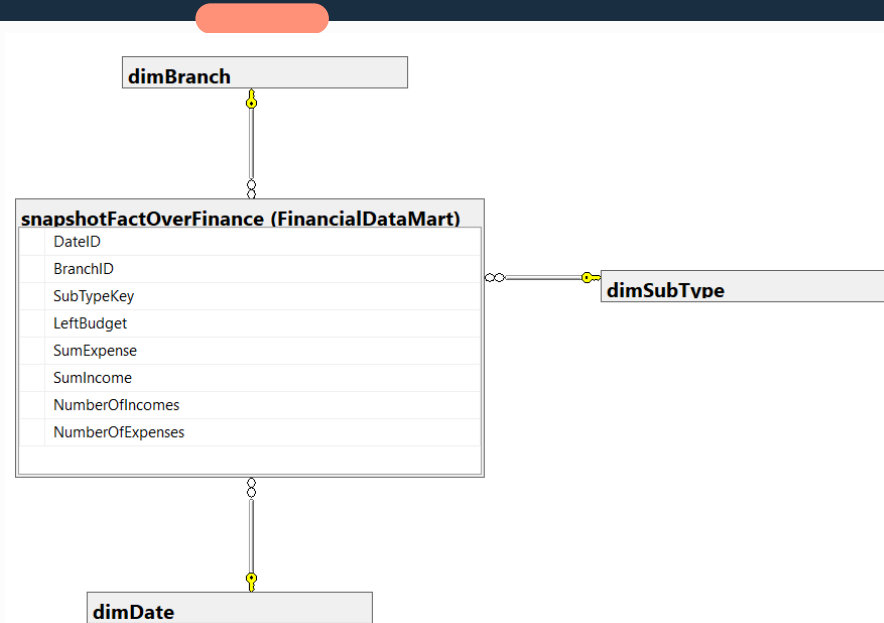
Financial Datamart : Accumulative Fact
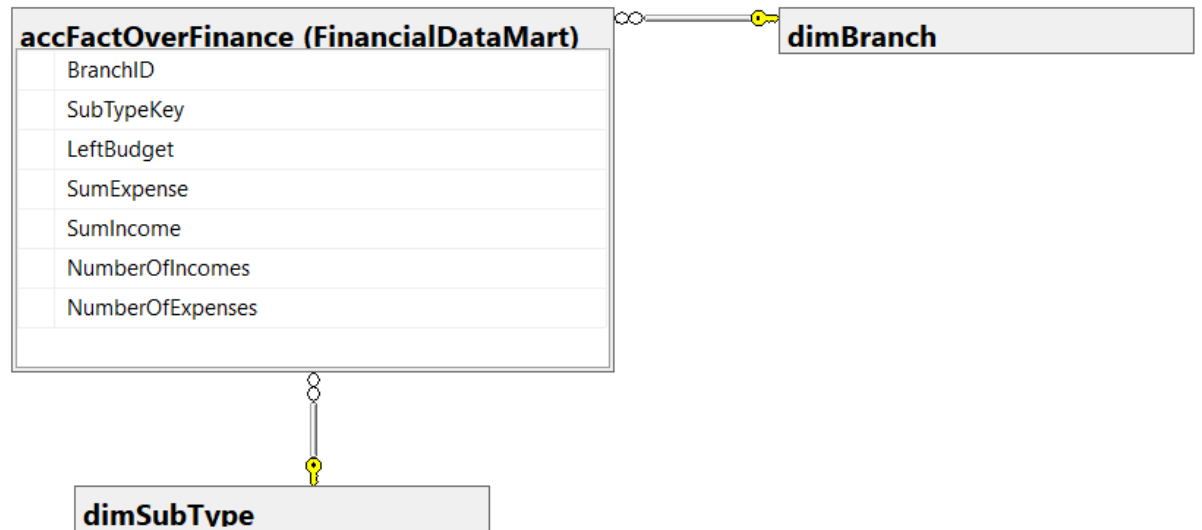
Financial Datamart : Salary Transactional Fact
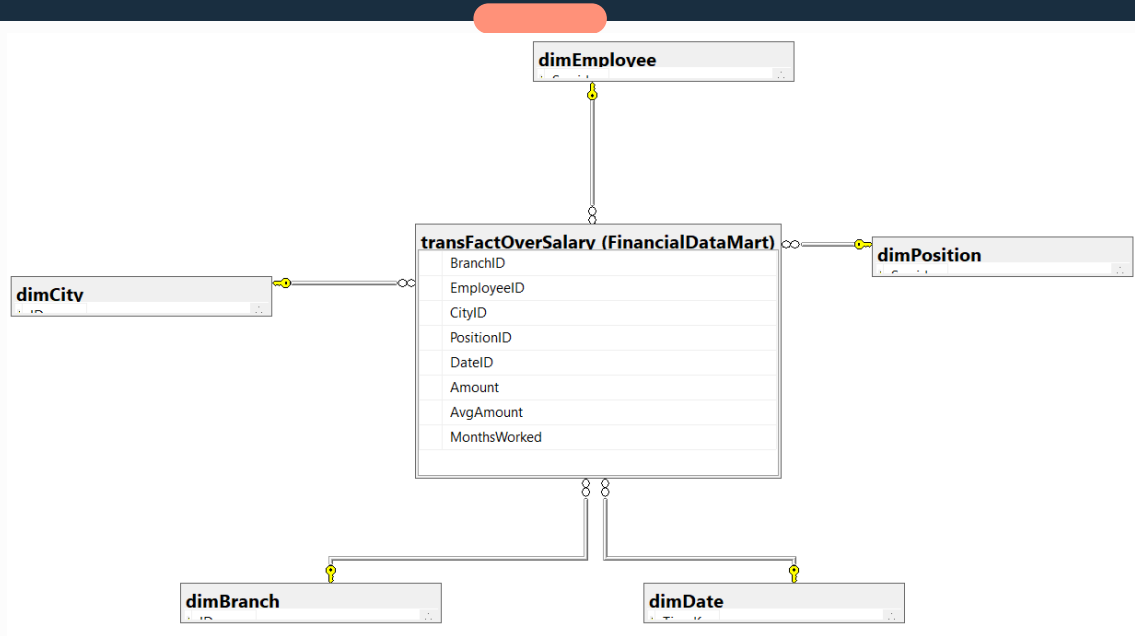
Financial Datamart : Salary Yearly Periodic Snapshot Fact

dimEmployee

snapshotFactOverSalary (FinancialDataMart)
- BranchID
- EmployeeID
- CityID
- PositionID
- DateID
- MaxPaid
- AvgPaid
- MonthsWorked
- TotalPaid

dimCity

dimPosition

dimBranch

dimDate
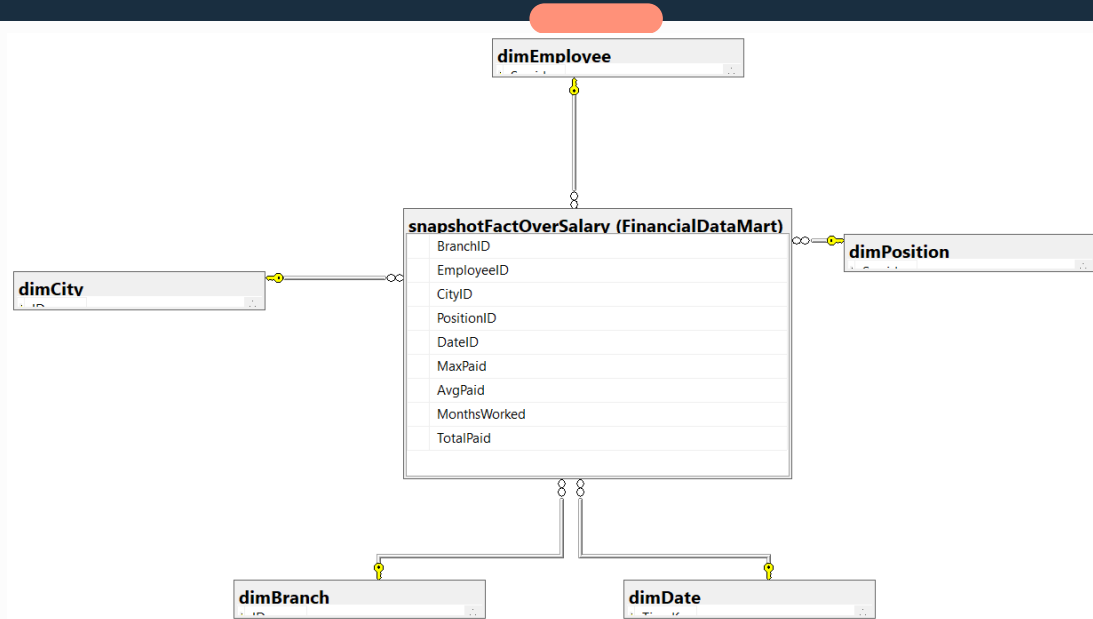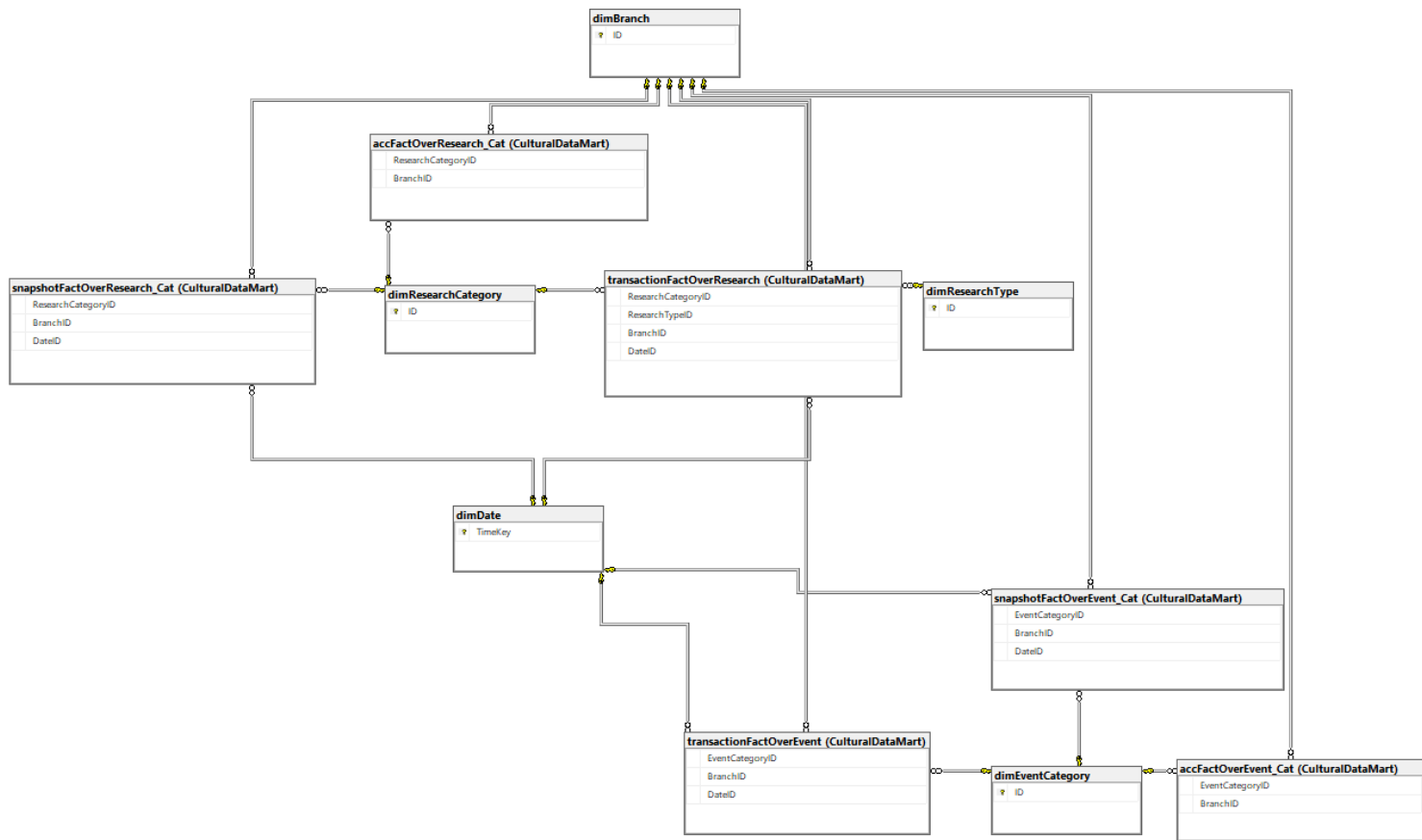
Cultural Datamart

Cultural Datamart : Research Transactional Fact
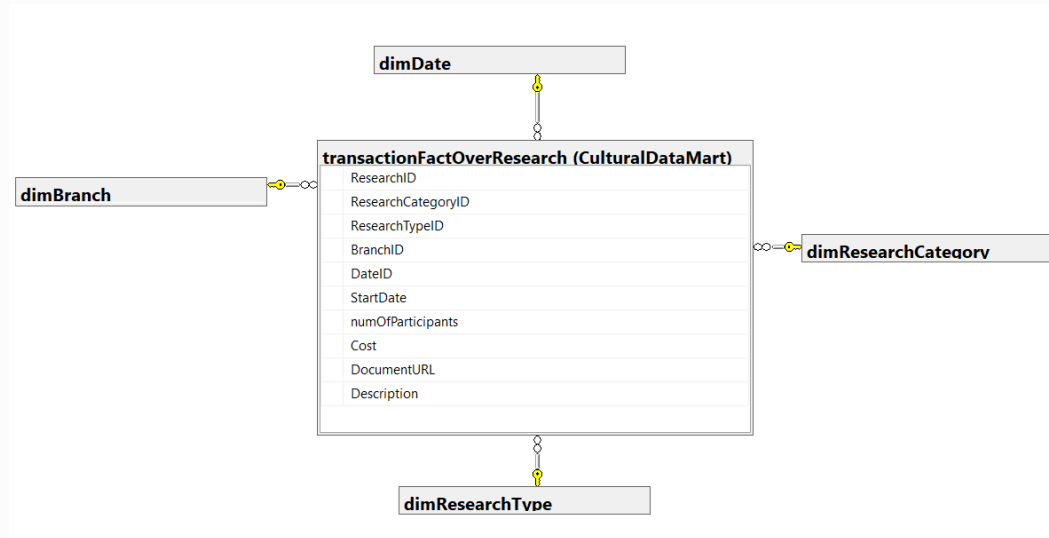
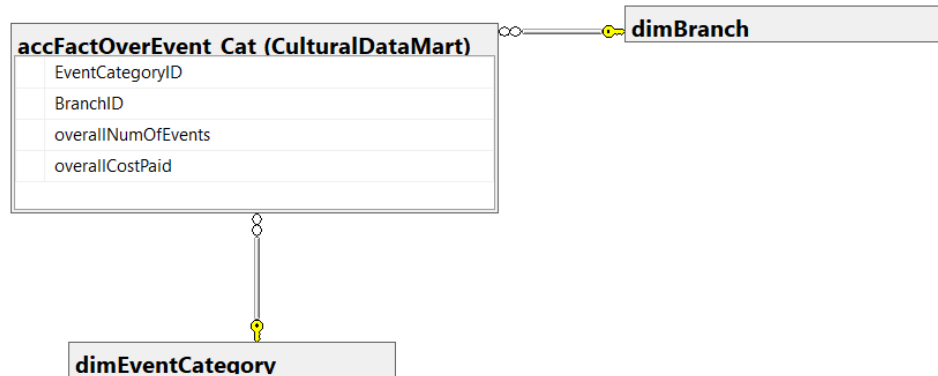# Cultural Datamart : Research Monthly Periodic Snapshot Fact
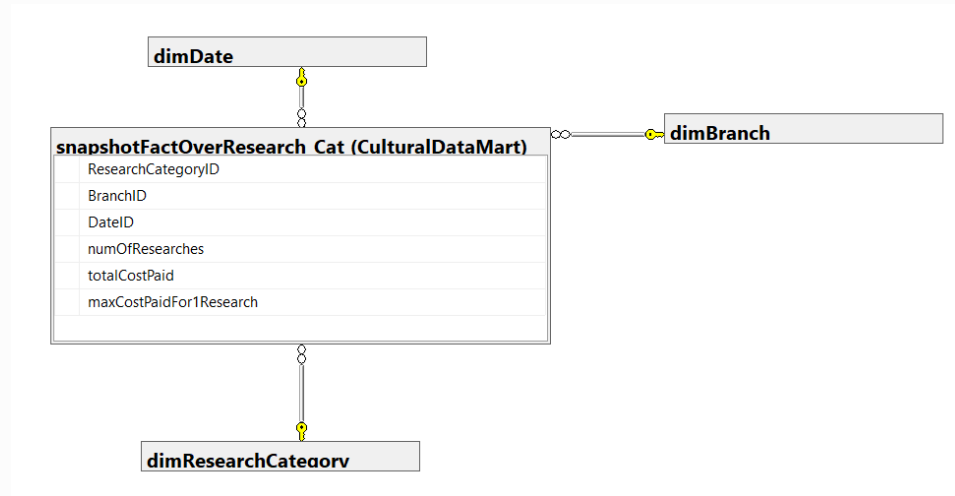
Cultural Datamart : Research Accumulative Fact
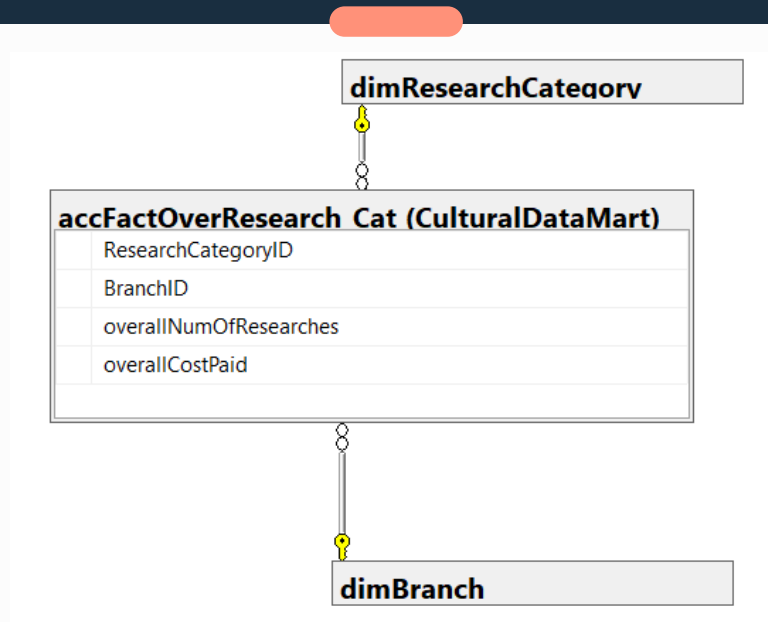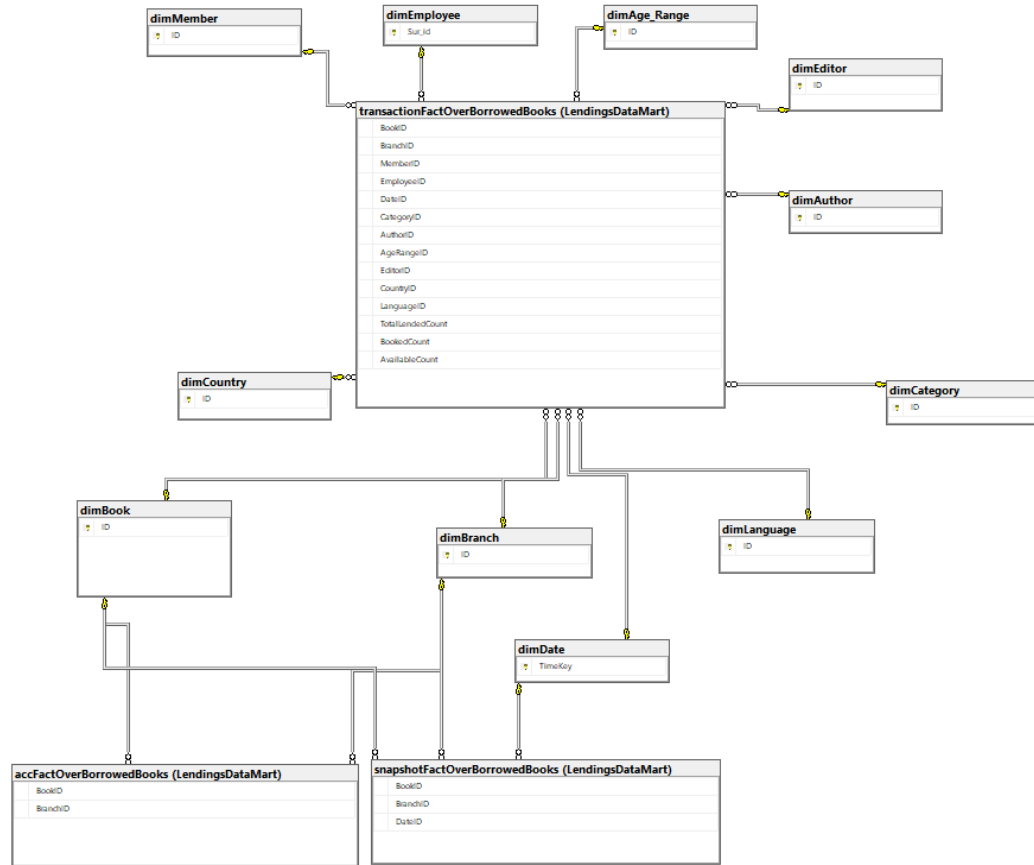
Cultural Datamart : Event Transactional Fact
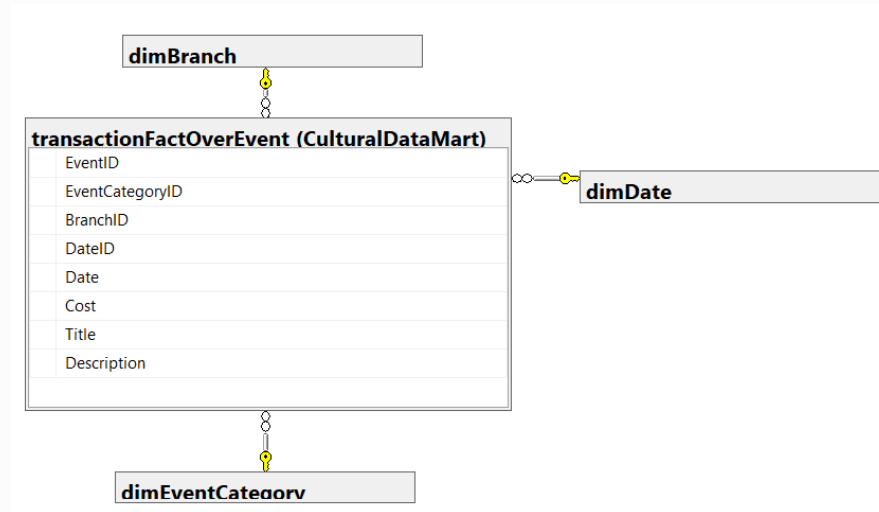
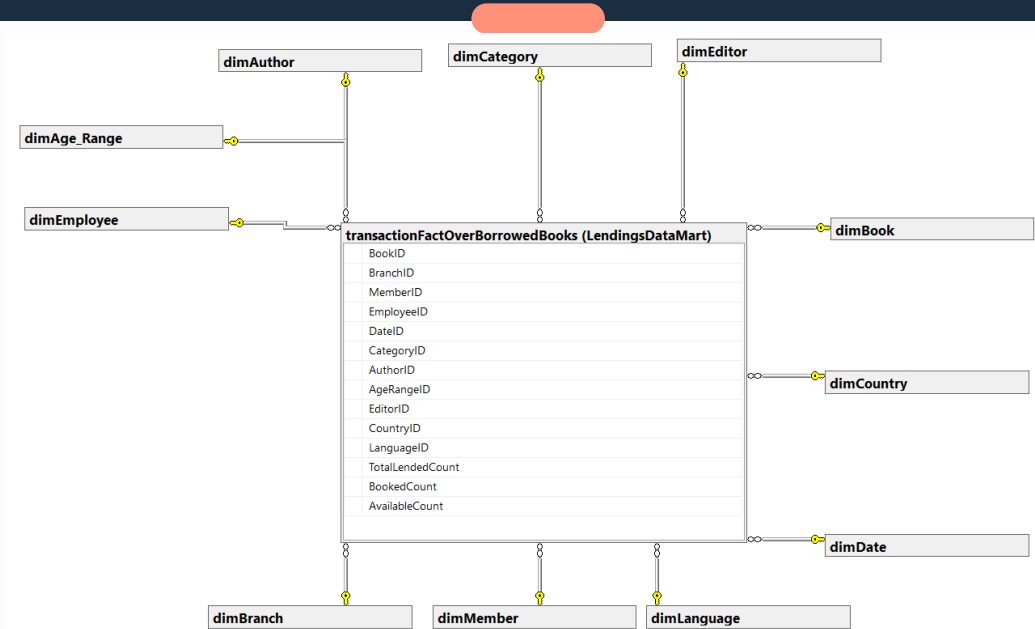# Cultural Datamart : Event Monthly Periodic Snapshot Fact
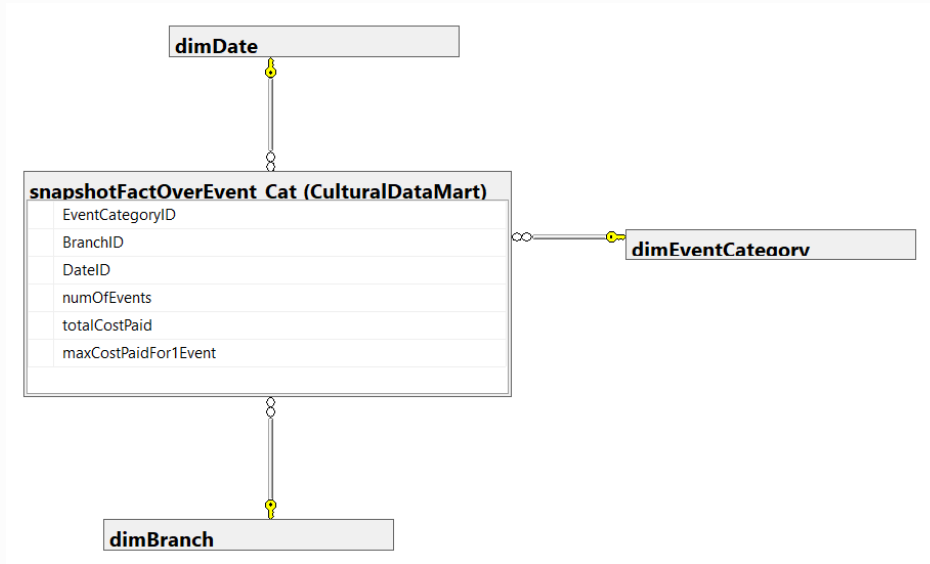
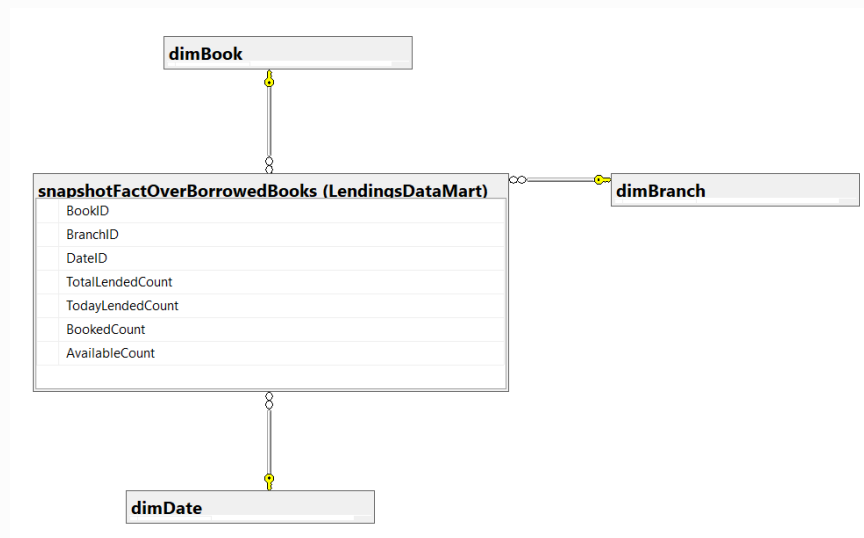# Cultural Datamart : Event Accumulative Fact

Lendings Datamart

Lendings Datamart : Transactional Fact

Lendings Datamart : Daily Periodic Snapshot Fact

dimBook

snapshotFactOverBorrowedBooks (LendingsDataMart)

BookID
BranchID
DateID
TotalLendedCount
TodayLendedCount
BookedCount
AvailableCount

dimBranch

dimDate

Lendings Datamart : Accumulative Fact