# ANKARA ÜNİVERSİTESİ MÜHENDİSLİK FAKÜLTESİ BİLGİSAYAR MÜHENDİSLİĞİ BÖLÜMÜ



#### BLM4522 VERİTABANI YÜKSELTME VE SÜRÜM YÖNETİMİ RAPORU

Furkan Yağcı
Görkem HAZAR
20290301
21290428

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Github: https://github.com/FurkanYagciiii

Video Linki:

 $\underline{https://drive.google.com/file/d/1xKX419ivu4PbjD\_1r5knhSs1XE8Wst4f/view?usp=drive\_link}$ 

## PROJE : VERİTABANI YÜKSELTME VE SÜRÜM YÖNETİMİ

### **AŞAMA 1: Veritabanı Yükseltme Planı**

```
USE AdventureWorks2019;
GO

□ SELECT TABLE_SCHEMA, TABLE_NAME
FROM INFORMATION_SCHEMA.TABLES
WHERE TABLE_TYPE = 'BASE TABLE'
ORDER BY TABLE_SCHEMA, TABLE_NAME;
```

|    | TABLE SCHEMA   | TABLE NAME                |
|----|----------------|---------------------------|
| 1  | dbo            | AWBuildVersion            |
| 2  | dbo            | DatabaseLog               |
| 3  | dbo            | ErrorLog                  |
| 4  | HumanResources | Department                |
| 5  | HumanResources | Employee                  |
| 6  | HumanResources | EmployeeDepartmentHistory |
| 7  | HumanResources | EmployeePayHistory        |
| 8  | HumanResources | JobCandidate              |
| 9  | HumanResources | Shift                     |
| 10 | Person         | Address                   |
| 11 | Person         | AddressType               |
| 12 | Person         | BusinessEntity            |
| 13 | Person         | BusinessEntityAddress     |
| 14 | Person         | BusinessEntityContact     |
| 15 | Person         | ContactType               |
| 16 | Person         | CountryRegion             |
| 17 | Person         | EmailAddress              |
| 18 | Person         | Password                  |
| 19 | Person         | Person                    |
| 20 | Person         | PersonPhone               |
| 20 | Person         | PL M J T                  |

```
SELECT
                 TABLE_NAME,
                 COLUMN_NAME,
                 DATA_TYPE,
                 IS NULLABLE,
                 CHARACTER_MAXIMUM_LENGTH
          FROM INFORMATION SCHEMA.COLUMNS
          WHERE TABLE SCHEMA = 'Sales' -- örnek olarak sadece Sales şemasını seçtik
          ORDER BY TABLE_NAME, ORDINAL_POSITION;
100 % -
Results Messages
     TABLE NAME
                      COLUMN NAME
                                     DATA TYPE IS NULLABLE CHARACTER MAXIMUM LENGTH
     CountryRegionCurrency ModifiedDate
                                     datetime
                                               NO
                                                          NULL
                      CreditCardID
                                     nvarchar
     CreditCard
                      CardType
     CreditCard
                      CardNumber
                                     nyarchar
                                               NO
     CreditCard
                      ExpYear
                                     smallint
                                               NO
                                                          NULL
     CreditCard
                      Modified Date
 10
    Currency
                      CurrencyCode
                                     nchar
                                               NO
     Currency
                                     nyarchar
                                               NO
     CurrencyRate
                      CurrencyRateID
                                               NO
                                                          NULL
                      CurrencyRateDate
 15
16
17
     CurrencyRate
                      FromCurrencyCode
                                    nchar
                                               NO
     CurrencyRate
CurrencyRate
                      ToCurrencyCode
                       AverageRate
    CurrencyRate
                      EndOfDavRate
                                     money
                                               NO
                                                          NULL
                       Modified Date
 20
    Customer
                      CustomerID
                                     int
                                                          NULL
SELECT
      fk.name AS FK Name.
     OBJECT_NAME(fk.parent_object_id) AS Table_Name,
      cl.name AS Column Name,
     OBJECT_NAME(fk.referenced_object_id) AS Referenced_Table,
     c2.name AS Referenced_Column
 FROM sys.foreign_keys AS fk
 INNER JOIN sys.foreign_key_columns AS fkc ON fk.object_id = fkc.constraint_object_id
 INNER JOIN sys.columns AS c1 ON fkc.parent_object_id = c1.object_id AND fkc.parent_column_id = c1.column_id
 INNER JOIN sys.columns AS c2 ON fkc.referenced_object_id = c2.object_id AND fkc.referenced_column_id = c2.column_id;
100 % -
 Results Messages
                                                                                                Referenced_Table
                                                                                                SalesTerritory
     FK_Customer_SalesTerritory_TerritoryID
                                                         Customer
                                                                             TerritoryID
                                                                                                                  TerritoryID
      {\sf FK\_SalesOrderHeader\_SalesTerritory\_TerritoryID}
                                                         SalesOrderHeader
                                                                             TerritoryID
                                                                                                SalesTerritory
                                                                                                                 TerritoryID
                                                                                                SalesTerritory
     FK_SalesPerson_SalesTerritory_TerritoryID
                                                         SalesPerson
                                                                             TerritoryID
                                                                                                                 TerritoryID
                                                                                                SalesTerritory
      FK_SalesTerritoryHistory_SalesTerritory_TerritoryID
                                                         SalesTerritoryHistory
                                                                             TerritoryID
                                                                                                                  TerritoryID
                                                                                                SalesTerritory
      {\sf FK\_StateProvince\_SalesTerritory\_TerritoryID}
                                                         StateProvince
                                                                             TerritoryID
                                                                                                                  TerritoryID
      FK_PersonPhone_PhoneNumberType_PhoneNumberTypeID PersonPhone
                                                                             PhoneNumberTypeID PhoneNumberType PhoneNumberTypeID
      FK_BillOfMaterials_Product_ProductAssemblyID
                                                        BillOfMaterials
                                                                             ProductAssemblyID
                                                                                                Product
                                                                                                                  ProductID
                                                                                                Product
 8
      FK_BillOfMaterials_Product_ComponentID
                                                         BillOfMaterials
                                                                             ComponentID
                                                                                                                  ProductID
      FK_ProductCostHistory_Product_ProductID
                                                         ProductCostHistory
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
 10
     FK_ProductDocument_Product_ProductID
                                                         ProductDocument
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
      FK_ProductInventory_Product_ProductID
                                                        ProductInventory
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
 12
      FK_ProductListPriceHistory_Product_ProductID
                                                        ProductListPriceHistory ProductID
                                                                                                Product
                                                                                                                  ProductID
                                                        ProductProductPhoto
      FK ProductProductPhoto Product ProductID
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
     FK_ProductReview_Product_ProductID
                                                        ProductReview.
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
     FK_ProductVendor_Product_ProductID
                                                        ProductVendor
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
      FK_PurchaseOrderDetail_Product_ProductID
                                                        PurchaseOrderDetail
                                                                            ProductID
                                                                                                Product
                                                                                                                  ProductID
      FK_ShoppingCartItem_Product_ProductID
                                                         ShoppingCartItem
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
 18
      FK SpecialOfferProduct Product ProductID
                                                         SpecialOfferProduct
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
                                                        TransactionHistory
      FK_TransactionHistory_Product_ProductID
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
 20
      FK WorkOrder Product ProductID
                                                         WorkOrder
                                                                             ProductID
                                                                                                Product
                                                                                                                  ProductID
```

AdventureWorks2019 veritabanında bulunan tablolar ve şemalar INFORMATION\_SCHEMA sorguları kullanılarak detaylı şekilde analiz edilmiştir.

Bu sayede hangi şemalarda hangi tabloların bulunduğu ve tabloların detaylı kolon yapısı çıkarılmıştır.

#### **AŞAMA 2: Sürüm Yönetimi**

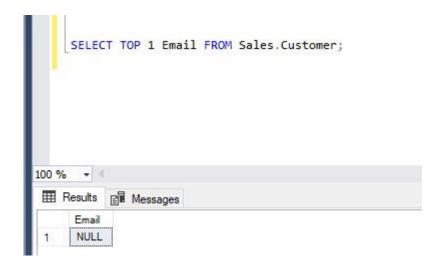


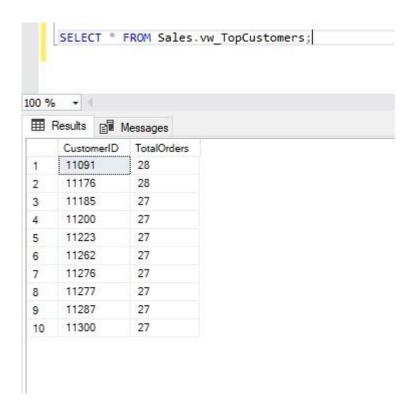
```
ON DATABASE
FOR DDL_DATABASE_LEVEL_EVENTS
AS
BEGIN
INSERT INTO dbo.DDL Changes Log (EventData, EventTime)
VALUES (EVENTDATA(), GETDATE());
END;

Messages
Commands completed successfully.
Completion time: 2025-05-29705:58:15.5266510+03:00
```

Bu sistemle her bir yapısal değişiklik kendi sürüm etiketi ile kayda alınmıştır.

#### AŞAMA 3: Test ve Geri Dönüş Planı





ALTER TABLE komutu ile eklenen Email alanının başarıyla oluşturulup oluşturulmadığı SELECT TOP 1 Email FROM Sales.Customer sorgusu ile test edilmiştir.

Oluşturulan Sales.CustomerFeedback tablosunun yapısı ve erişilebilirliği SELECT \* FROM Sales.CustomerFeedback komutu ile doğrulanmıştır.

vw\_TopCustomers isminde oluşturulan yeni view, beklenen sonuçları üretip üretmediğini kontrol etmek için SELECT \* FROM Sales.vw\_TopCustomers komutu ile test edilmiştir.