

Lesson 12

****Topic:**** Text, Informational and Logical Functions

****Prerequisites:**** Connect SQL Server to Power BI desktop and import DimCustomer table from AdventureWorksDW database (2019)

****Questions:****

Basic Level (1–10)

- - Concatenate First and Last Name

Answer: [FirstName] & " " & [LastName]

- - Convert Email Address to Uppercase

Answer: UPPER([EmailAddress])

- - Extract First 3 Characters from First Name

Answer: LEFT([FirstName], 3)

- - Count Characters in Last Name

Answer: LEN([LastName])

- - Convert First Name to Lowercase

Answer: LOWER([FirstName])

- - Trim Spaces in EnglishEducation

Answer: TRIM([EnglishEducation])

- - Repeat '*' Character Equal to Length of First Name

Answer: REPT("?", LEN([FirstName]))

- - Get Last 4 Characters of Phone Number

Answer: RIGHT([Phone], 4)

- - Format YearlyIncome to Currency with 2 Decimals

Answer: FORMAT([YearlyIncome], "T#,##0.00")

- - Check If FirstName and LastName Are Exactly the Same

Answer: IF([FirstName] = [LastName], TRUE(), FALSE())

Intermediate Level (11–20)

- - Find If 'Manager' Appears in Occupation (Case Sensitive)

Answer: FIND("Manager", [EnglishOccupation], 1, 0) > 0

- - Search for 'graduate' in EnglishEducation (Case Insensitive)

Answer: SEARCH("graduate", [EnglishEducation], 1, 0) > 0

- - Extract Characters 3–7 from First Name

Answer: MID([FirstName], 3, 5)

- - Replace Area Code in Phone Number with 'XXX'

Answer: "XXX" & MID([Phone], 4, LEN([Phone]) - 3)

- - Format BirthDate as 'DD-MM-YYYY'

Answer: FORMAT([BirthDate], "DD-MM-YYYY")

- - Create Initial + Last Name Format (e.g. J.Smith)

Answer: LEFT([FirstName],1) & "." & [LastName]

- - Capitalize First Letter of FirstName, Lowercase the Rest

Answer: UPPER(LEFT([FirstName],1)) & LOWER(MID([FirstName],2,LEN([FirstName])))

- - Substitute Dashes with Spaces in Phone

Answer: SUBSTITUTE([Phone], "-", " ")

- - Convert BirthDate Year to Numeric Using VALUE

Answer: VALUE(YEAR([BirthDate]))

- - Show YearlyIncome Rounded to 1 Decimal Without Commas

Answer: FIXED([YearlyIncome], 1, TRUE)

Advanced Level (21–30)

- - Customer Code: First 2 Letters of LastName + Last 2 of CustomerKey

Answer: LEFT([LastName], 2) & RIGHT(STR([CustomerKey]), 2)

- - Validate Email Ends with '.com' and Contains '@'

Answer: IF(RIGHT([EmailAddress], 4) = ".com" && FIND("@", [EmailAddress], 1, 0) > 0, TRUE(), FALSE())

- - Extract Domain Name from EmailAddress

Answer: MID([EmailAddress], FIND("@", [EmailAddress])+1, LEN([EmailAddress]))

- - Mask Phone Number Except Last 4 Digits

Answer: REPT("X", LEN([Phone]) - 4) & RIGHT([Phone], 4)

- - Proper Casing of Last Name (simulate manually)

Answer: UPPER(LEFT([LastName],1)) & LOWER(MID([LastName],2,LEN([LastName])))

- - Replace Multiple Spaces in EnglishOccupation with Single Space

Answer: SUBSTITUTE([EnglishOccupation], " ", " ")

- - Generate Custom ID: Initials + Birth Year (e.g., JD_1985)

Answer: LEFT([FirstName],1) & LEFT([LastName],1) & "_" & YEAR([BirthDate])

- - Remove Hyphens and Convert Phone to Number

Answer: VALUE(SUBSTITUTE([Phone], "-", ""))

- - Create a measure or calculated column that categorizes customers into segments using both EnglishEducation and YearlyIncome.

Answer: SWITCH(TRUE(),
 [EnglishEducation] = "Graduate Degree" && [YearlyIncome] > 90000, "Elite",
 [EnglishEducation] = "Bachelors" && [YearlyIncome] >= 60000 && [YearlyIncome] <= 90000, "Professional",
 [EnglishEducation] = "High School", "Basic",
 "Other")

- - Create a measure that returns: Total Customers if no selection; Customer count for selected Gender; If more than one gender is selected, return 'Multiple Values Selected'

Answer: IF(
 HASONEVALUE(DimCustomer[Gender]),
 COUNTROWS(DimCustomer),
 IF(ISFILTERED(DimCustomer[Gender]), "Multiple Values Selected",
 CALCULATE(COUNTROWS(DimCustomer))))