Lesson 12 - Homework

1. Concatenate First and Last Name:

```
Fulname =
DimCustomer[FirstName] & " " & DimCustomer[LastName]
```

2. Convert Email Address to Uppercase:

```
EmailAddressUppercase =
UPPER(DimCustomer[EmailAddress])
```

3. Extract First 3 Characters from First Name:

```
3_Char_From_First_Name =
LEFT(DimCustomer[FirstName],3)
```

4. Count Characters in Last Name:

```
Count_Char_Last_Name =
LEN(TRIM(COALESCE(DimCustomer[LastName], "")))
```

5. Convert First Name to Lowercase:

```
First_Name_LowerCase =
 LOWER(DimCustomer[FirstName])
```

6. Trim Spaces in EnglishEducation:

```
Eng_Edu_Trimmed =
TRIM(DimCustomer[EnglishEducation])
```

7. Repeat '*' Character Equal to Length of First Name:

```
Asterisk_First_Name =
REPT("*", LEN(TRIM(COALESCE([First Name], ""))))
```

8. Get Last 4 Characters of Phone Number:

```
Last_4_Chars_PhoneNumber =
RIGHT(TRIM(COALESCE(DimCustomer[Phone], "")), 4)
```

9. Format YearlyIncome to Currency with 2 Decimals:

```
Yearly_Income_Formatted =
FORMAT([YearlyIncome], "Currency")
```

10. Check If FirstName and LastName Are Exactly the Same:

```
IsFirst&LastNameSame? =
IF(
   LOWER(TRIM(DimCustomer[FirstName])) = LOWER(TRIM(DimCustomer[LastName])),
      "Yes",
      "NO"
)
```

11. Find If 'Manager' Appears in Occupation (Case Sensitive):

```
Is_Manager_CS =
IF(
   CONTAINSSTRINGEXACT(DimCustomer[EnglishOccupation], "Manager"),
   "YES",
   "NO"
)
```

12.Search for 'graduate' in EnglishEducation (Case Insensitive):

```
Is_graduate_CI =
IF(
   CONTAINSSTRING(DimCustomer[EnglishEducation], "graduate"),
   "YES",
   "NO"
)
```

13.Extract Characters 3–7 from First Name:

```
3-7_Chars_FirstName =
MID(
   DimCustomer[FirstName],3,5
)
```

14.Replace Area Code in Phone Number with 'XXX':

```
Phone with XXX Area Code =
VAR PhoneText = TRIM([Phone])
VAR HasCountryCode = LEFT(PhoneText, 1) = "1" && CONTAINSSTRING(PhoneText, "(")
RETURN
SWITCH(
    TRUE(),
    HasCountryCode,
        "1 (XXX) " & MID(PhoneText, 8, LEN(PhoneText) - 7),
    LEN(PhoneText) >= 12 && CONTAINSSTRING(PhoneText, "-"),
        "XXX-" & RIGHT(PhoneText, LEN(PhoneText) - 4),
    PhoneText
)
```

15.Format BirthDate as 'DD-MM-YYYY':

```
BirthDateFormatted =
FORMAT(DimCustomer[BirthDate], "DD-MM-YYYY"
)
```

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

```
Initial+LastName =
LEFT(
   TRIM(DimCustomer[FirstName]),1) &
    "." &
     DimCustomer[LastName]
```

17.Capitalize First Letter of FirstName, Lowercase the Rest:

```
FirstName_Capitalized =
LEFT(DimCustomer[FirstName],1) &
MID(DimCustomer[FirstName],2,LEN(DimCustomer[FirstName])-1)
```

18.Substitute Dashes with Spaces in Phone:

```
Dash_Sub_With_Spaces =
SUBSTITUTE(DimCustomer[Phone],"-"," ")
```

19.Convert BirthDate Year to Numeric Using VALUE:

```
BirthDate_To_Numeric =
VALUE(YEAR(DimCustomer[BirthDate]))
```

20.Show YearlyIncome Rounded to 1 Decimal Without Commas:

```
Income_NoCommas =
SUBSTITUTE(FIXED(DimCustomer[YearlyIncome], 1, TRUE), ",", "")
```

21.Customer Code: First 2 Letters of LastName + Last 2 of CustomerKey:

```
First_2_let_of_LastName_&_Last_2_of_CusKey =
 LEFT(TRIM(DimCustomer[LastName]),2) & RIGHT(TRIM(DimCustomer[CustomerKey]),2)
```

22.Validate Email Ends with '.com' and Contains '@':

```
Email_Validate =
IF(
   LOWER(RIGHT(TRIM(DimCustomer[EmailAddress]),4)) = ".com" &&
   CONTAINSSTRING(DimCustomer[EmailAddress],"@"),
   "Valid",
   "Not Valid"
)
```

23.Extract Domain Name from EmailAddress:

```
EmailDomain =
VAR AtPosition = SEARCH("@", DimCustomer[EmailAddress], 1, 0)
VAR DotPosition = SEARCH(".", DimCustomer[EmailAddress], AtPosition, 0)
RETURN
IF(
   AtPosition > 0 && DotPosition > 0,
   MID(DimCustomer[EmailAddress], AtPosition + 1, DotPosition - AtPosition - 1),
   "Invalid"
)
```

24.Mask Phone Number Except Last 4 Digits:

```
MaskedPhone =
VAR CleanPhone =
   SUBSTITUTE(
      SUBSTITUTE(
         SUBSTITUTE(
            SUBSTITUTE(DimCustomer[Phone], "(", ""),
         ")", ""),
      " ", ""),
   "-", "")
RETURN
"XXX-XXX-" & RIGHT(CleanPhone, 4)
```

25.Proper Casing of Last Name (simulate manually):

```
Proper_Casing_of_Last_Name =
UPPER(LEFT(TRIM(DimCustomer[LastName]),1)) &
LOWER(MID(TRIM(DimCustomer[LastName]),2,LEN(TRIM(DimCustomer[LastName]))-1))
```

26.Replace Multiple Spaces in EnglishOccupation with Single Space:

```
SingleSpace =
VAR Occupation = TRIM(DimCustomer[EnglishOccupation])
VAR Step1 = SUBSTITUTE(Occupation, "  ", " ")
VAR Step2 = SUBSTITUTE(Step1, "  ", " ")
VAR Step3 = SUBSTITUTE(Step2, "  ", " ")
VAR Step4 = SUBSTITUTE(Step3, "  ", " ")
VAR Step5 = SUBSTITUTE(Step4, "  ", " ")
RETURN
Step5
```

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

```
CustomId =
LEFT(TRIM(DimCustomer[FirstName]),1) &
LEFT(TRIM(DimCustomer[LastName]),1) &
 "_" &
 YEAR(DimCustomer[BirthDate])
```

28. Remove Hyphens and Convert Phone to Number:

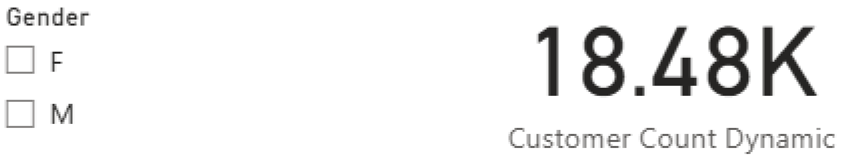
```
Hyphens_Removed =
VAR PHONE = TRIM(DimCustomer[Phone])
VAR STEP1 = SUBSTITUTE(PHONE,"(","")
VAR STEP2 = SUBSTITUTE(STEP1,")","")
VAR STEP3 = SUBSTITUTE(STEP2,"-","")
VAR STEP4 = SUBSTITUTE(STEP3," ","")
VAR STEP5 = VALUE(STEP4)
RETURN
STEP5
```

29. Create a measure or calculated column that categorizes customers into segments using both `EnglishEducation` and `YearlyIncome`.
If the education is "Graduate Degree" and income > 90000 → "Elite"
If education is "Bachelors" and income between 60000–90000 → "Professional"
If education is "High School" → "Basic"
Otherwise → "Other"

```
Customer Status =
 SWITCH(
    TRUE(),
    CONTAINSSTRING(LOWER(TRIM(DimCustomer[EnglishEducation])),"graduate") && DimCustomer[YearlyIncome]
> 90000,
    "Elite",
    CONTAINSSTRING(LOWER(TRIM(DimCustomer[EnglishEducation])),"bachelors") &&
(DimCustomer[YearlyIncome] >= 60000 && DimCustomer[YearlyIncome] <= 90000),
    "Professional",
    CONTAINSSTRING(LOWER(TRIM(DimCustomer[EnglishEducation])),"high school"),
    "Basic",
    "Other"
 )
```

30. 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"

```
Customer Count Dynamic =
VAR GenderSelection = SELECTEDVALUE(DimCustomer[Gender], "None")
RETURN
SWITCH(
    TRUE(),
    GenderSelection = "None", COUNTROWS(ALL(DimCustomer)),
    GenderSelection <> "Multiple", CALCULATE(COUNTROWS(DimCustomer), DimCustomer[Gender] =
GenderSelection),
    "Multiple Values Selected"
)
```



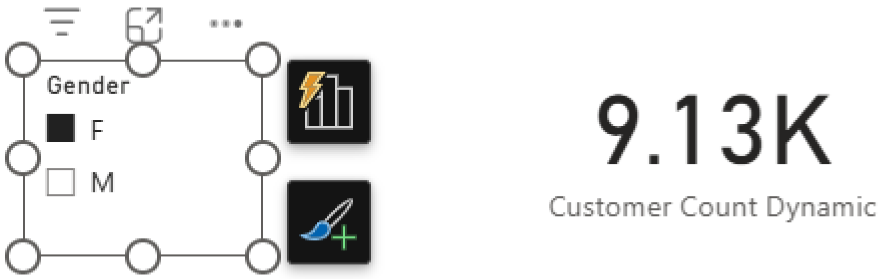
Gender

□ F

□ M

18.48K

Customer Count Dynamic



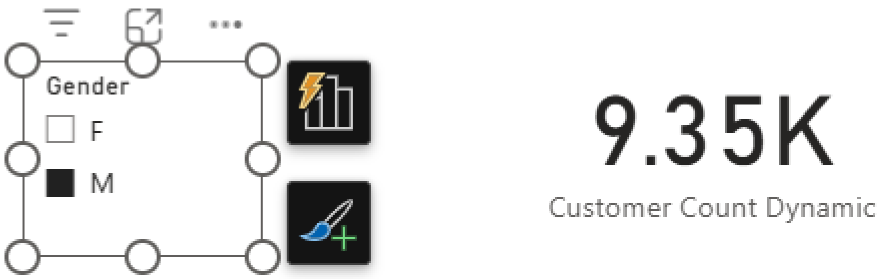
Gender

■ F

□ M

9.13K

Customer Count Dynamic



Gender

□ F

■ M

9.35K

Customer Count Dynamic