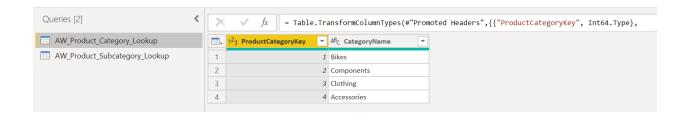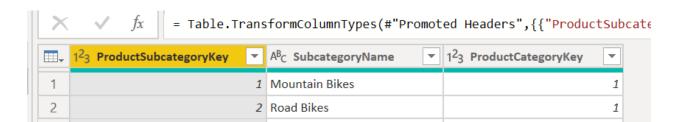## 1) Create new queries to connect to the **(AdventureWorks_Product_Categories)** and **(AdventureWorks_Product_Subcategories)** files from the course resources:

- Name your queries (AW_Product_Category_Lookup) and (AW_Product_Subcategory_Lookup)

Queries [2]

AW_Product_Category_Lookup
AW_Product_Subcategory_Lookup

fx = Table.TransformColumnTypes(#"Promoted Headers",{{"ProductCategoryKey", Int64.Type},

	123 ProductCategoryKey	ABC CategoryName
1	1	Bikes
2	2	Components
3	3	Clothing
4	4	Accessories

- Confirm that headers have been promoted and that detected data types are correct

fx = Table.TransformColumnTypes(#"Promoted Headers",{{"ProductSubcate

	123 ProductSubcategoryKey	ABC SubcategoryName	123 ProductCategoryKey
1	1	Mountain Bikes	1
2	2	Road Bikes	1

fx = Table.TransformColumnTypes(#"Promoted H

	123 ProductCategoryKey	ABC CategoryName
1	1	Bikes
2	2	Components
3	3	Clothing

• Disable the report refresh option for both connections

Close	New Query	Data Sources	Parameters	Query	Manage Columns

Queries [2]

〈   ✕ ✓ *fx*   = Table.TransformColumnTypes(#"Pr

⊞ AW_Product_Category_Lookup   ⊞▾ 1²₃ **ProductSubcategoryKey**   ▼ ᴬᴮ꜀ **SubcategoryName**

⊞ AW_Product_Subcategory

📄	Copy	
📋	Paste	
✕	Delete	
⬛	Rename	
✓	Enable load	
	Include in report refresh	
📄	Duplicate	
⦿	Reference	

1	Mountain Bikes
2	Road Bikes
3	Touring Bikes
4	Handlebars
5	Bottom Brackets
6	Brakes
7	Chains
8	Cranksets
9	Derailleurs

2) Make the following modifications to the **AW_Product_Lookup** query:

• Add a calculated column that extracts all characters before the dash ("-") in the **ProductSKU** column, named "**SKUType**"

✕ ✓ *fx*   = Table.RenameColumns(#"Inserted Text Before Delimiter",{{"Text Before Delimiter",

⊞▾	▼	ᴬᴮ꜀ **ProductStyle**	▼	1.2 **ProductCost**	▼	1.2 **ProductPrice**	▼	ᴬᴮ꜀ **SKUType**	▼
1		0		13.0863		34.99		HL	
2		0		12.0278		33.6442		HL	
3		U		3.3963		9.5		SO	
4		U		3.3963		9.5		SO	
5		0		12.0278		33.6442		HL	
6		U		5.7052		8.6442		CA	
7		U		31.7244		48.0673		LJ	
8		U		31.7244		48.0673		LJ	
9		U		31.7244		48.0673		LJ	
10		U		31.7244		48.0673		LJ	
11		U		747.9682		1263.4598		FR	

• Update the **SKUType** calculation above to return all characters before second dash, instead of the first

	ProductStyle	ProductCost	ProductPrice	Text Before Delimiter
1	0	13.0863	34.99	HL-U509
2	0	12.0278	33.6442	HL
3	U	3.3963	9.5	SO-B909
4	U	3.3963	9.5	SO-B909
5	0	12.0278	33.6442	HL-U509
6	U	5.7052	8.6442	CA
7	U	31.7244	48.0673	LJ-0192
8	U	31.7244	48.0673	LJ-0192
9	U	31.7244	48.0673	LJ-0192

- Replace zeros (0) in the **ProductStyle** column with "NA"

```
= Table.ReplaceValue(#"Renamed Columns","0","NA",Replacer.ReplaceText,{"ProductStyle"})
```

		ProductColor	ProductSize	ProductStyle	ProductCost	1.
1		Red	0	NA	13.086:	
2		Black	0	NA	12.027₿	
3	ides just...	White	M	U	3.396:	
4	ides just...	White	L	U	3.396:	
5		Blue	0	NA	12.027₿	
6		Multi	0	U	5.705₂	
7		Multi	S	U	31.724₄	
8		Multi	M	U	31.724₄	
9		Multi	L	U	31.724₄	

- Update the **DiscountPrice** calculation to 15%, by multiplying the **ProductPrice** values by 0.85 (instead of 0.9)

$\times$ $\checkmark$ fx = Table.RemoveColumns(#"Renamed Columns1",{"SKUType"})

ABC ProductStyle	1.2 ProductCost	1.2 ProductPrice	1.2 Discounted Prive
1	NA	13.0863	34.99	29.7415
2	NA	12.0278	33.6442	28.59757
3	U	3.3963	9.5	8.075
4	U	3.3963	9.5	8.075
5	NA	12.0278	33.6442	28.59757
6	U	5.7052	8.6442	7.34757
7	U	31.7244	48.0673	40.857205
8	U	31.7244	48.0673	40.857205
9	U	31.7244	48.0673	40.857205
10	U	31.7244	48.0673	40.857205

3) Using the Statistics tools in the Query <mark>Editor,</mark> confirm the following values :

$\times$ $\checkmark$ fx = List.Average(#"Removed Columns"[ProductCost])

413.66100921501641

- **Number of distinct product colors (10)**

$\times$ $\checkmark$ fx = List.NonNullCount(List.Distinct(#"Rounded Off1"[ProductColor]))

10

Number of distinct customer names (18,110)

× ✓ *fx* = List.NonNullCount(List.Distinct(#"Uppercased Text"[Full Name]))

18110

Maximum annual customer income ($170,000)

< × ✓ *fx* = List.Max(#"Uppercased Text"[AnnualIncome])

170000

Count of order numbers (56,046)

< × ✓ *fx* = List.NonNullCount(#"Changed Type"[OrderNumber])

56046

Count of distinct order numbers (25,164)

```
 <    ✕  ✓  fx    = List.NonNullCount(List.Distinct(#"Changed Type"[OrderNumber]))
```

25164

---

4) Make the following modifications to the **AW_Customer_Lookup** query:

- Add a new calculated column for the year of birth (named **"BirthYear"**), based on **BirthDate**

erName		A^B_C Domain		1$^2_3$ BirthYear	
		ADVENTURE WORKS.COM		1966	
ꞓ10		ADVENTURE WORKS.COM		1965	
ꞓ5		ADVENTURE WORKS.COM		1965	
12		ADVENTURE WORKS.COM		1968	
th5		ADVENTURE WORKS.COM		1968	

- Add a conditional column to categorize customer income (named **"IncomeLevel"**), based on the following criteria :
  - If **AnnualIncome** >= $150,000, then **IncomeLevel** = "*Very High*"
  - If **AnnualIncome** >= $100,000, then **IncomeLevel** = "*High*"
  - If **AnnualIncome** >= $50,000, then **IncomeLevel** = "*Average*"
  - Otherwise **IncomeLevel** = "*Low*"

`= Table.AddColumn(#"Renamed Columns1", "IncomeLevel", each if [AnnualIncome] >= 150000 then "Very High" else if [AnnualIncome] >= 100000 then "High" else if [AnnualIncome] >= 50000 then "Average" else "Low")`

	ss	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	UserName	Domain	BirthYear	IncomeLevel
1	re-works.com	90,000.00	2	Bachelors	Professional	Y	jon24	ADVENTURE WORKS.COM	1966	Average
2	nture-works.com	60,000.00	3	Bachelors	Professional	N	eugene10	ADVENTURE WORKS.COM	1965	Average
3	nture-works.com	60,000.00	3	Bachelors	Professional	Y	ruben35	ADVENTURE WORKS.COM	1965	Average
4	nture-works.com	70,000.00	0	Bachelors	Professional	N	christy12	ADVENTURE WORKS.COM	1968	Average
5	enture-works.com	80,000.00	5	Bachelors	Professional	Y	elizabeth5	ADVENTURE WORKS.COM	1968	Average
6	re-works.com	70,000.00	0	Bachelors	Professional	Y	julio1	ADVENTURE WORKS.COM	1965	Average
7	nture-works.com	60,000.00	3	Bachelors	Professional	Y	marco14	ADVENTURE WORKS.COM	1964	Average
8	it-works.com	60,000.00	4	Bachelors	Professional	Y	rob4	ADVENTURE WORKS.COM	1964	Average
9	venture-works.com	70,000.00	0	Bachelors	Professional	N	shannon38	ADVENTURE WORKS.COM	1964	Average
10	lventure-works.com	70,000.00	0	Bachelors	Professional	N	jacquelyn20	ADVENTURE WORKS.COM	1964	Average
11	ure-works.com	60,000.00	4	Bachelors	Professional	Y	curtis9	ADVENTURE WORKS.COM	1963	Average
12	nture-works.com	100,000.00	2	Bachelors	Management	Y	lauren41	ADVENTURE WORKS.COM	1968	High
13	re-works.com	100,000.00	2	Bachelors	Management	Y	ian47	ADVENTURE WORKS.COM	1968	High
14	nture-works.com	100,000.00	3	Bachelors	Management	N	sydney23	ADVENTURE WORKS.COM	1968	High
15	ture-works.com	30,000.00	0	Partial College	Skilled Manual	N	chloe23	ADVENTURE WORKS.COM	1979	Low
16	ture-works.com	30,000.00	0	Partial College	Skilled Manual	Y	wyatt52	ADVENTURE WORKS.COM	1979	Low

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Sort Ascending
Sort Descending
Clear Sort
Clear Filter
Remove Empty
Number Filters
Search
☑ (Select All)
☑ 10000
☑ 20000
☑ 30000
☑ 40000
OK   Cancel

ss	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	UserName	Domain	BirthYear	IncomeLevel
		0	Partial College	Skilled Manual	N	chloe23	ADVENTURE WORKS.COM	1979	Low
		0	Partial College	Skilled Manual	Y	wyatt52	ADVENTURE WORKS.COM	1979	Low
		4	High School	Skilled Manual	Y	shannon1	ADVENTURE WORKS.COM	1944	Low
		2	Partial College	Clerical	Y	clarence52	ADVENTURE WORKS.COM	1944	Low
		0	High School	Skilled Manual	N	luke18	ADVENTURE WORKS.COM	1978	Low
		0	High School	Skilled Manual	N	jordan73	ADVENTURE WORKS.COM	1978	Low
		0	Partial College	Skilled Manual	N	destiny7	ADVENTURE WORKS.COM	1978	Low
		0	Partial College	Skilled Manual	Y	ethan20	ADVENTURE WORKS.COM	1978	Low
		0	Partial College	Skilled Manual	Y	seth46	ADVENTURE WORKS.COM	1978	Low
		2	Partial High School	Clerical	Y	elejandro45	ADVENTURE WORKS.COM	1945	Low
		2	Partial College	Clerical	N	harold3	ADVENTURE WORKS.COM	1946	Low
		2	Partial College	Clerical	Y	jessie16	ADVENTURE WORKS.COM	1946	Low
		2	Partial College	Clerical	Y	jill13	ADVENTURE WORKS.COM	1946	Low
		2	Partial College	Clerical	Y	jimmy9	ADVENTURE WORKS.COM	1946	Low
		2	Partial High School	Clerical	Y	bethany10	ADVENTURE WORKS.COM	1947	Low
		4	High School	Skilled Manual	Y	theresa13	ADVENTURE WORKS.COM	1947	Low

---

Sort Ascending
Sort Descending
Clear Sort
Clear Filter
Remove Empty
Number Filters
Search
☑ (Select All)
☑ 50000
☑ 60000
☑ 70000
☑ 80000
☑ 90000
OK   Cancel

ss	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	UserName	Domain	BirthYear	IncomeLevel
		2	Bachelors	Professional	Y	jon24	ADVENTURE WORKS.COM	1966	Average
		3	Bachelors	Professional	N	eugene10	ADVENTURE WORKS.COM	1965	Average
		3	Bachelors	Professional	Y	ruben35	ADVENTURE WORKS.COM	1965	Average
		0	Bachelors	Professional	N	christy12	ADVENTURE WORKS.COM	1968	Average
		5	Bachelors	Professional	Y	elizabeth5	ADVENTURE WORKS.COM	1968	Average
		0	Bachelors	Professional	Y	julio1	ADVENTURE WORKS.COM	1965	Average
		3	Bachelors	Professional	Y	marco14	ADVENTURE WORKS.COM	1964	Average
		4	Bachelors	Professional	Y	rob4	ADVENTURE WORKS.COM	1964	Average
		0	Bachelors	Professional	N	shannon38	ADVENTURE WORKS.COM	1964	Average
		0	Bachelors	Professional	N	jacquelyn20	ADVENTURE WORKS.COM	1964	Average
		4	Bachelors	Professional	Y	curtis9	ADVENTURE WORKS.COM	1963	Average
		0	Partial College	Skilled Manual	Y	russell7	ADVENTURE WORKS.COM	1978	Average
		0	Partial College	Skilled Manual	Y	jennifer93	ADVENTURE WORKS.COM	1978	Average
		0	Partial College	Skilled Manual	Y	amanda53	ADVENTURE WORKS.COM	1977	Average
		0	Partial College	Skilled Manual	Y	megan28	ADVENTURE WORKS.COM	1977	Average
		0	Partial College	Skilled Manual	Y	nathan11	ADVENTURE WORKS.COM	1976	Average
		0	Partial College	Skilled Manual	N	ana0	ADVENTURE WORKS.COM	1980	Average

---

Sort Ascending
Sort Descending
Clear Sort
Clear Filter
Remove Empty
Number Filters
Search
☑ (Select All)
☑ 100000
☑ 110000
☑ 120000
☑ 130000

ss	AnnualIncome	TotalChildren	EducationLevel	Occupation	HomeOwner	UserName	Domain	BirthYear	IncomeLevel
		2	Bachelors	Management	Y	lauren41	ADVENTURE WORKS.COM	1968	High
		2	Bachelors	Management	Y	ian47	ADVENTURE WORKS.COM	1968	High
		3	Bachelors	Management	N	sydney23	ADVENTURE WORKS.COM	1968	High
		2	Bachelors	Management	Y	savannah39	ADVENTURE WORKS.COM	1968	High
		0	Graduate Degree	Management	N	angela17	ADVENTURE WORKS.COM	1966	High
		0	Graduate Degree	Management	Y	alyssa37	ADVENTURE WORKS.COM	1966	High
		0	Graduate Degree	Management	Y	aimee13	ADVENTURE WORKS.COM	1967	High
		1	Bachelors	Management	Y	jonathan43	ADVENTURE WORKS.COM	1967	High
		1	Bachelors	Management	Y	gabrielle58	ADVENTURE WORKS.COM	1967	High
		0	Graduate Degree	Management	N	sarah13	ADVENTURE WORKS.COM	1967	High
		0	Graduate Degree	Management	Y	nicholas19	ADVENTURE WORKS.COM	1967	High
		2	Graduate Degree	Management	Y	jose6	ADVENTURE WORKS.COM	1942	High
		2	Graduate Degree	Management	Y	nathan55	ADVENTURE WORKS.COM	1943	High
		2	Graduate Degree	Management	Y	molly18	ADVENTURE WORKS.COM	1943	High
		2	Bachelors	Management	N	clarence56	ADVENTURE WORKS.COM	1958	High

ter7 i...	55	$ AnnualIncome	1²₃ TotalChildren	Aᴮᴄ EducationLevel	Aᴮᴄ Occupation	Aᴮᴄ HomeOwner	Aᴮᴄ UserName	Aᴮᴄ Domain	1²₃ BirthYear	ᴬᴮᶜ₁₂₃ IncomeLevel
⇅↓ Sort Ascending			0	Graduate Degree	Management	Y	donald20	ADVENTURE WORKS.COM	1959	Very High
⇅↑ Sort Descending			0	Graduate Degree	Management	Y	damien32	ADVENTURE WORKS.COM	1959	Very High
Clear Sort			1	Bachelors	Management	Y	april18	ADVENTURE WORKS.COM	1943	Very High
⊽ Clear Filter			2	Graduate Degree	Management	Y	devin13	ADVENTURE WORKS.COM	1943	Very High
Remove Empty			2	Partial College	Professional	Y	anne4	ADVENTURE WORKS.COM	1958	Very High
Number Filters ▸			2	Partial College	Professional	Y	robin2	ADVENTURE WORKS.COM	1957	Very High
			2	Bachelors	Management	N	alexis28	ADVENTURE WORKS.COM	1957	Very High
Search			3	High School	Professional	Y	shannon4	ADVENTURE WORKS.COM	1955	Very High
☑ (Select All)			2	Bachelors	Management	N	danielle23	ADVENTURE WORKS.COM	1964	Very High
☑ 150000			0	Graduate Degree	Management	Y	hunter16	ADVENTURE WORKS.COM	1962	Very High
☑ 160000			1	Partial College	Professional	N	seth42	ADVENTURE WORKS.COM	1961	Very High
☑ 170000			3	Graduate Degree	Management	Y	kyle45	ADVENTURE WORKS.COM	1945	Very High
			4	Bachelors	Management	Y	dustin1	ADVENTURE WORKS.COM	1948	Very High
			5	Partial College	Professional	Y	andre16	ADVENTURE WORKS.COM	1951	Very High
OK Cancel			3	Partial College	Management	N	taylor13	ADVENTURE WORKS.COM	1950	Very High
			0	Partial High School	Management	Y	grant6	ADVENTURE WORKS.COM	1971	Very High
17	...	170.000.00	1	Graduate Degree	Management	Y	...	ADVENTURE WORKS.COM	1969	Very High

5) Apply all changes, and confirm that new tables and fields are accessible within both the **Data** and **Relationships** views (recommend saving a backup copy of the report (i.e. *"AdventureWorks_Report_Backup"*))

▦ ▾	Aᴮᴄ ProductC
1	Red
2	Black
3	White
4	White
5	Blue

AW_Calendar_Lookup

- Date
- Day Name
- Day Name.1
- Σ Month
- Start of Week
- Σ Year

Collapse ∧

AW_Customer_Lookup

- Σ AnnualIncome
- BirthDate
- Σ BirthYear
- Σ CustomerKey
- Domain
- EducationLevel
- EmailAddress
- Full Name
- Gender

Collapse ∧

AW_Products_Lookup

- Σ DiscountPrice
- ModelName
- ProductColor
- Σ ProductCost
- ProductDescription
- Σ ProductKey
- ProductName
- Σ ProductPrice
- ProductSize

Collapse ∧

Sales

- Σ CustomerKey
- OrderDate
- Σ OrderLineItem
- OrderNumber
- Σ OrderQuantity
- Σ ProductKey
- Source.Name
- StockDate
- Σ TerritoryKey

AW_Product_Categori...

- CategoryName
- Σ ProductCategoryKey

Collapse ∧

AW_Product_Subcate...

- Σ ProductCategoryKey
- Σ ProductSubcategoryKey
- SubcategoryName

Collapse ∧