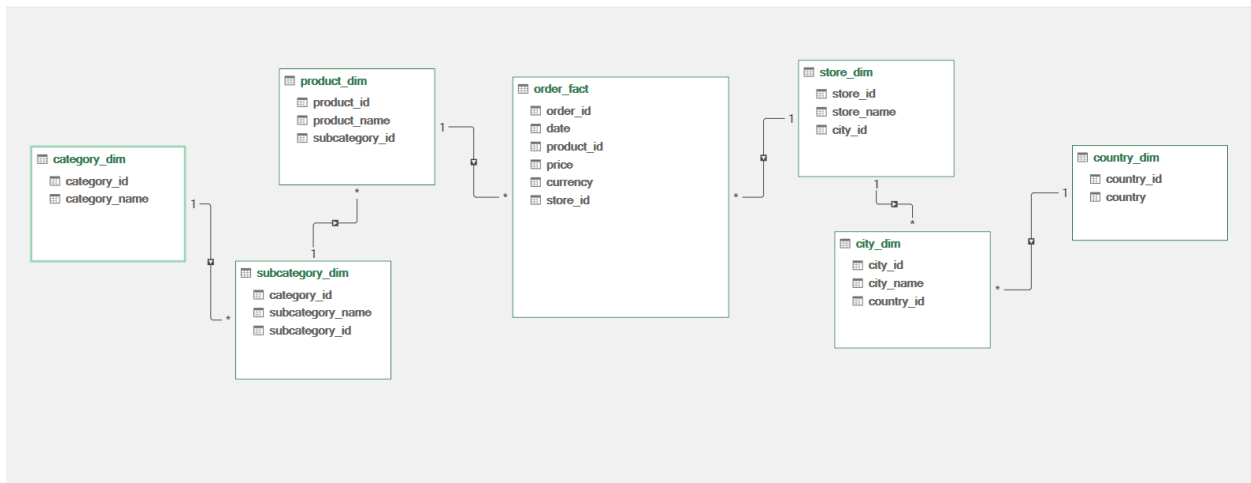


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BSCS-C301

Midterm Lab Task # 3: Normalization Using Power Query

This practice task demonstrates the process of **Data Normalization** using Power Query to transform a flat dataset into a structured relational model. By organizing data into distinct Fact and Dimension tables, you reduce redundancy and improve the efficiency of your data analysis.



order_id	date	product_id	price	currency	store_id
1	01/02/2020	P002	699.99	GBP	S005
2	01/02/2020	P010	24.99	GBP	S005
3	01/02/2020	P012	179.99	GBP	S005
4	01/02/2020	P012	179.99	GBP	S005
5	01/02/2020	P005	999.99	GBP	S005
6	24/07/2020	P004	599.99	USD	S002
7	24/07/2020	P003	799.99	USD	S002
8	24/07/2020	P016	39.99	USD	S002
9	19/12/2022	P024	79.99	GBP	S005
10	14/04/2022	P019	129.99	GBP	S005
11	14/04/2022	P005	999.99	GBP	S005
12	14/04/2022	P017	59.99	GBP	S005
13	14/04/2022	P026	49.99	GBP	S005
14	02/10/2022	P021	39.99	USD	S001
15	02/10/2022	P023	199.99	USD	S001
16	02/10/2022	P020	24.99	USD	S001
17	02/10/2022	P011	249.99	USD	S001
18	25/10/2021	P026	49.99	GBP	S005
19	25/10/2021	P022	59.99	GBP	S005
20	25/10/2021	P024	79.99	GBP	S005
21	25/10/2021	P011	249.99	GBP	S005
22	16/06/2020	P015	49.99	USD	S003
23	16/06/2020	P006	1299.99	GBP	S005
24	16/06/2020	P020	24.99	GBP	S005
25	16/06/2020	P016	39.99	GBP	S005
26	25/07/2023	P018	149.99	USD	S003
27	25/07/2023	P025	69.99	USD	S003
28	05/02/2020	P026	49.99	GBP	S004
29	05/02/2020	P005	999.99	GBP	S004
30	05/02/2020	P024	79.99	GBP	S004
31	05/02/2020	P003	799.99	GBP	S004
32	05/02/2020	P014	899.99	GBP	S004
33	02/01/2023	P013	1499.99	GBP	S004
34	02/01/2023	P017	59.99	GBP	S004
35	02/01/2023	P003	799.99	GBP	S004
36	02/01/2023	P002	699.99	GBP	S004
37	02/01/2023	P016	39.99	GBP	S004
38	21/05/2021	P018	149.99	USD	S001
39	21/05/2021	P006	45.99	USD	S001

Queries [7]

- order_fact
- product_dim
- category_dim
- subcategory_dim
- store_dim
- city_dim
- country_dim

`= Table.Distinct(#"Removed Other Columns", {"product_name"})`

A ^B _C product_id	A ^B _C product_name	A ^B _C subcategory_id	
1	P002	EconoTread	SC01
2	P020	Door Anchor Straps	SC10
3	P012	Olympic Flat Bench	SC06
4	P005	Glide Elite Elliptical	SC03
5	P004	Recumbent Cyclor	SC02
6	P003	SpinMaster Bike	SC02
7	P016	Heavy Duty Resistance Tubes	SC08
8	P024	Mini Percussion Massager	SC12
9	P019	Pro Suspension Trainer	SC10
10	P017	Cast Iron Kettlebell 16kg	SC09
11	P026	Extra Thick Exercise Mat	SC13
12	P021	Recovery Roller Deluxe	SC11
13	P023	PulseRelief Massage Gun	SC12
14	P011	Adjustable Bench Pro	SC06
15	P022	Trigger Point Grid Roller	SC11
16	P015	FlexForce Band Kit	SC08
17	P001	Pro Runner 3000	SC01
18	P018	Adjustable Kettlebell	SC09
19	P025	Premium Yoga Mat	SC13
20	P014	Leg Press Machine	SC07
21	P013	Multi-Gym Station	SC07
22	P007	AquaRow 500	SC04
23	P006	Compact Cross Trainer	SC03
24	P008	AirRow Pro	SC04
25	P010	Cast Iron Plate Set	SC05
26	P009	PowerLift Dumbbell Set	SC05

`= Table.Distinct(#"Removed Columns", {"`

A ^B _C category_id	A ^B _C category_name	
1	C01	Cardio Equipment
2	C03	Functional Fitness
3	C04	Recovery and Wellness
4	C02	Strength Training

`= Table.Distinct(#"Reordered Columns", {"subcategory_name"})`

A ^B _C category_id	A ^B _C subcategory_name	A ^B _C subcategory_id	
1	C01	Treadmills	SC01
2	C03	Suspension Trainers	SC10
3	C02	Weight Benches	SC06
4	C01	Ellipticals	SC03
5	C01	Exercise Bikes	SC02
6	C03	Resistance Bands	SC08
7	C04	Massage Guns	SC12
8	C03	Kettlebells	SC09
9	C04	Yoga Mats	SC13
10	C04	Foam Rollers	SC11
11	C02	Weight Machines	SC07
12	C01	Rowing Machines	SC04
13	C02	Free Weights	SC05

✕ ✓ *fx* = Table.Distinct("#Removed Other Columns", {"store_name"})

	A ^B _C store_id	A ^B _C store_name	A ^B _C city_id
1	S005	Active Life Outfitters	MA
2	S002	Muscle Mart	LA
3	S001	FitGear Hub	NY
4	S003	Strength Central	CH
5	S004	Elite Gym Supply	LO

✕ ✓ *fx* = Table.Sort("#Removed Duplicates", {"city_name", Order.Ascen

	A ^B _C city_id	A ^B _C city_name	A ^B _C country_id
1	CH	Chicago	US
2	LO	London	UK
3	LA	Los Angeles	US
4	MA	Manchester	UK
5	NY	New York	US

✕ ✓ *fx* = Table.Sort("#Removed Duplicates", {{

	A ^B _C country_id	A ^B _C country
1	UK	United Kingdom
2	US	United States