

1.

	FullName	PhoneNumber	company
1	Aahlada Thota	(215) 555-0100	NULL
2	Aakarsha Nookala	(201) 555-0100	NULL
3	Aakriti Bhamidipati	(307) 555-0100	NULL
4	Aakriti Byrraju	(216) 555-0100	microsoft
5	Aamdaal Kamasamudram	(316) 555-0100	NULL
6	Abel Pirvu	(216) 555-0100	NULL
7	Abel Spirlea	(218) 555-0100	microsoft
8	Abel Tătărescu	(217) 555-0100	microsoft
9	Abhaya Rambhalia	(231) 555-0100	NULL
10	Abhoy Prabhupāda	(423) 555-0100	NULL
11	Abhra Ganguly	(212) 555-0100	microsoft
12	Abhra Thakur	(215) 555-0100	NULL
13	Adam Balaz	(319) 555-0100	NULL
14	Adam Dvorak	(239) 555-0100	NULL
15	Adam Kuban	(216) 555-0100	NULL
16	Adirake Narkbunnum	(479) 555-0100	NULL
17	Adirake Saenamuang	(405) 555-0100	NULL

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 1,111 rows

2.

	CustomerName	company
1	Tailspin Toys (Head Office)	tailsprintoys
2	Tailspin Toys (Sylvanite, MT)	tailsprintoys
3	Tailspin Toys (Peeples Valley, AZ)	tailsprintoys
4	Tailspin Toys (Medicine Lodge, KS)	tailsprintoys
5	Tailspin Toys (Gasport, NY)	tailsprintoys
6	Tailspin Toys (Jessie, ND)	tailsprintoys
7	Tailspin Toys (Frankewing, TN)	tailsprintoys
8	Tailspin Toys (Bow Mar, CO)	tailsprintoys
9	Tailspin Toys (Netcong, NJ)	tailsprintoys
10	Tailspin Toys (Wimbledon, ND)	tailsprintoys
11	Tailspin Toys (Devault, PA)	tailsprintoys
12	Tailspin Toys (Biscay, MN)	tailsprintoys
13	Tailspin Toys (Stonefort, IL)	tailsprintoys
14	Tailspin Toys (Long Meadow, MD)	tailsprintoys
15	Tailspin Toys (Batsom, TX)	tailsprintoys
16	Tailspin Toys (Coney Island, MO)	tailsprintoys
17	Tailspin Toys (East Fultonham, OH)	tailsprintoys

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 663 rows

3.

CustomerID

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 0 rows

4.

Results Messages

	StockItemID	TotalQuantity
1	138	12
2	93	12
3	118	1
4	143	12
5	136	1
6	86	3276
7	204	2530
8	18	1
9	154	10
10	186	25
11	211	10
12	33	1
13	153	10
14	187	25
15	68	1
16	43	1
17	100	12

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 219 rows

5.

	StockItemID	StockItemName	Description
1	132	Funny gorilla with big eyes slippers (Black) L	Funny gorilla with big eyes slippers (Black) L
2	68	Ride on toy sedan car (Red) 1/12 scale	Ride on toy sedan car (Red) 1/12 scale
3	214	Air cushion film 200mmx200mm 325m	Air cushion film 200mmx200mm 325m
4	191	Black and orange fragile despatch tape 48mmx75m	Black and orange fragile despatch tape 48mmx75m
5	7	USB food flash drive - pizza slice	USB food flash drive - pizza slice
6	36	Developer joke mug - when your hammer is C++ (W...	Developer joke mug - when your hammer is C++ (W...
7	154	Medium sized bubblewrap roll 20m	Medium sized bubblewrap roll 20m
8	8	USB food flash drive - slim sum 10 drive variety pack	USB food flash drive - slim sum 10 drive variety pack
9	106	Alien officer hoodie (Black) 5XL	Alien officer hoodie (Black) 5XL
10	31	Developer joke mug - Oct 31 = Dec 25 (Black)	Developer joke mug - Oct 31 = Dec 25 (Black)
11	73	Ride on vintage American toy coupe (Red) 1/12 scale	Ride on vintage American toy coupe (Red) 1/12 scale
12	35	Developer joke mug - fun was unexpected at this tim...	Developer joke mug - fun was unexpected at this tim...
13	14	USB food flash drive - fortune cookie	USB food flash drive - fortune cookie
14	148	Halloween skull mask (Gray) L	Halloween skull mask (Gray) L
15	211	Small 9mm replacement blades 9mm	Small 9mm replacement blades 9mm
16	11	USB food flash drive - cookie	USB food flash drive - cookie
17	184	Shipping carton (Brown) 305x305x305mm	Shipping carton (Brown) 305x305x305mm

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 227 rows

6.

	StockItemName
1	"The Gu" red shirt XML tag t-shirt (White) M
2	Halloween zombie mask (Light Brown) L
3	"The Gu" red shirt XML tag t-shirt (Black) 7XL
4	USB food flash drive - hamburger
5	USB rocket launcher (Gray)
6	Small 9mm replacement blades 9mm
7	Red and white urgent despatch tape 48mmx75m
8	USB food flash drive - dessert 10 drive variety pack
9	Shipping carton (Brown) 229x229x229mm
10	Novelty chili chocolates 500g
11	Medium sized bubblewrap roll 20m
12	IT joke mug - that behavior is by design (Black)
13	DBA joke mug - you might be a DBA if (White)
14	Developer joke mug - Oct 31 = Dec 25 (Black)
15	Developer joke mug - old C developers never die ...
16	"The Gu" red shirt XML tag t-shirt (White) XXL
17	USB food flash drive - shrimp cocktail

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 227 rows

7.

Results Messages

	StateProvinceName	ProcessingTime
1	Alabama	5
2	Alaska	5
3	Arizona	6
4	Arkansas	4
5	California	5
6	Colorado	4
7	Connecticut	4
8	Florida	4
9	Georgia	3
10	Hawaii	4
11	Idaho	5
12	Illinois	4
13	Indiana	7
14	Iowa	4
15	Kansas	4
16	Kentucky	3
17	Louisiana	5

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:01 49 rows

8.

Results Messages

	StateProvinceName	ByMonth	ProcessingTime
1	Alabama	1	10
2	Alabama	2	2
3	Alabama	3	3
4	Alabama	4	4
5	Alabama	5	3
6	Alabama	6	2
7	Alabama	7	11
8	Alabama	8	1
9	Alabama	9	3
10	Alabama	10	5
11	Alabama	11	11
12	Alabama	12	5
13	Alaska	1	1
14	Alaska	2	1
15	Alaska	3	1
16	Alaska	4	2
17	Alaska	5	5

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:01 588 rows

9.

Results Messages

	StockItemID	StockItemName
1	106	Alien officer hoodie (Black) 5XL
2	107	Superhero action jacket (Blue) 3XS
3	156	10 mm Double sided bubble wrap 10m
4	214	Air cushion film 200mmx200mm 325m
5	109	Superhero action jacket (Blue) XS
6	132	Funny gorilla with big eyes slippers (Black) L
7	36	Developer joke mug - when your hammer is C++ (W...
8	31	Developer joke mug - Oct 31 = Dec 25 (Black)
9	68	Ride on toy sedan car (Red) 1/12 scale
10	69	Ride on toy sedan car (Blue) 1/12 scale
11	7	USB food flash drive - pizza slice
12	8	USB food flash drive - dim sum 10 drive variety pack
13	117	Superhero action jacket (Blue) 5XL
14	213	Air cushion film 200mmx100mm 325m
15	99	"The Gu" red shirt XML tag t-shirt (Black) 5XL
16	148	Halloween skull mask (Gray) L
17	211	Small 9mm replacement blades 9mm

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 166 rows

10.

Results Messages

	CustomerName	PhoneNumber	PrimaryContactPerson
1	Kayla Woodcock	(415) 555-0102	Lorena Cindric
2	Hudson Onslow	(415) 555-0102	Bhaargav Rambhatla
3	Amy Treff	(415) 555-0102	Kalidas Nadar
4	Ethan Onslow	(415) 555-0102	Elnaz Javan
5	Piper Koch	(415) 555-0102	Adam Kubat
6	Lily Code	(415) 555-0102	Tereza Valentova
7	Bill Lawson	(203) 555-0107	Paula Gonzales
8	Elias Myllari	(209) 555-0101	Hasini Rai
9	Sara Karlsson	(201) 555-0100	Alena Prikylova
10	Robert Ruutti	(212) 555-0100	Serdar ozCelik
11	Adam Kubat	(216) 555-0100	Cuneyt Arslan
12	Sandhya Raju	(907) 555-0100	Damodara Trivedi
13	Ravindra Parkar	(206) 555-0100	Damodar Shenoy
14	Hang Tang	(907) 555-0100	Mateo Cattaneo
15	Kerstin Parn	(415) 555-0100	Sulabha Khalsa
16	Marcos Costa	(252) 555-0106	Dayarama Kamei
17	Donald Jones	(605) 555-0101	Lana Rozej

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 107 rows

11.

Results Messages

	CityID	CityName
1	15	Abbotsburg
2	49	Absecon
3	54	Accomac
4	58	Acitunas
5	232	Airport Drive
6	242	Akhioi
7	357	Alcester
8	372	Alden Bridge
9	600	Alstead
10	689	Amado
11	696	Amanda Park
12	843	Andrix
13	890	Annamoriah
14	928	Antares
15	962	Antonitic
16	1040	Arbor Vitae
17	1121	Argusville

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 634 rows

12.

StockItemName quantity CustomerName PhoneNumber DeliveryAddressLine1 DeliveryAddressLine2 CityName ContactName

	StockItemName	quantity	CustomerName	PhoneNumber	DeliveryAddressLine1	DeliveryAddressLine2	CityName	ContactName
1	DBA joke mug - two types of DBAs (White)	2	Hudson Hollinworth	(415) 555-0102	Suite 185	1492 Shah Road	Stonefort	Razeena Hosseini
2	Developer joke mug - when your hammer is C++ (W...	4	Annette Talon	(423) 555-0106	Suite 157	1119 Friar Boulevard	Maypearl	Nikolajs Kalejs
3	IT joke mug - hardware: part of the computer that can...	3	Daniel Roman	(316) 555-0100	Suite 29	932 Deependu Crescent	Newberg	Irma Berzina
4	DBA joke mug - SELECT caffeine FROM mug (White)	5	Hudson Hollinworth	(415) 555-0102	Suite 185	1492 Shah Road	Stonefort	Razeena Hosseini
5	DBA joke mug - it depends (Black)	6	Hudson Hollinworth	(415) 555-0102	Suite 185	1492 Shah Road	Stonefort	Razeena Hosseini
6	Halloween zombie mask (Light Brown) M	24	Lorena Cindric	(406) 555-0100	Unit 17	1634 Eugen Lane	Holden Beach	Hue Ton
7	Animal with big feet slippers (Brown) S	4	Eva Muirden	(415) 555-0102	Unit 176	1674 Skujins Boulevard	Gaspon	Johanna Huiting
8	Dinosaur battery-powered slippers (Green) XL	1	Lorena Cindric	(406) 555-0100	Unit 17	1634 Eugen Lane	Holden Beach	Hue Ton
9	Furry gorilla with big eyes slippers (Black) S	1	Lorena Cindric	(406) 555-0100	Unit 17	1634 Eugen Lane	Holden Beach	Hue Ton
10	Ogre battery-powered slippers (Green) XL	3	Lorena Cindric	(406) 555-0100	Unit 17	1634 Eugen Lane	Holden Beach	Hue Ton
11	Tape dispenser (Black)	40	Helen Ahven	(415) 555-0100	Shop 119	1022 Folliero Street	Hedrick	Dhanishta Majji
12	RC toy sedan car with remote control (Red) 1/50 scale	1	Hudson Hollinworth	(415) 555-0102	Suite 185	1492 Shah Road	Stonefort	Razeena Hosseini
13	Void fill 200 L bag (White) 200L	90	Hudson Hollinworth	(415) 555-0102	Suite 185	1492 Shah Road	Stonefort	Razeena Hosseini
14	USB rocket launcher (Gray)	6	Sharon Graham	(605) 555-0106	Unit 61	474 Tran Lane	Arietta	Chandrakanta Raut
15	USB rocket launcher (Gray)	4	Daniel Roman	(316) 555-0100	Suite 29	932 Deependu Crescent	Newberg	Irma Berzina
16	Superhero action jacket (Blue) 3XS	8	Eva Muirden	(415) 555-0102	Unit 176	1674 Skujins Boulevard	Gaspon	Johanna Huiting
17	RC toy sedan car with remote control (Black) 1/50 scale	4	Annette Talon	(423) 555-0106	Suite 157	1119 Friar Boulevard	Maypearl	Nikolajs Kalejs

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 27 rows

13.

Results Messages

StockGroupID	RemainingStock
1	-1163638
2	-242568
3	5995235
4	-120047
5	4953245
6	-395262
7	5617045
8	-2993915
9	-79477

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 9 rows

14.

15.

Results Messages

OrderID	DeliveryStatus
1	20 Receiver not present
2	28 Receiver not present
3	32 Receiver not present
4	35 Receiver not present
5	40 Receiver not present
6	42 Receiver not present
7	64 Receiver not present
8	73 Receiver not present
9	78 Receiver not present
10	92 Receiver not present
11	101 Receiver not present
12	124 Receiver not present
13	125 Receiver not present
14	127 Receiver not present
15	128 Receiver not present
16	147 Receiver not present
17	150 Receiver not present

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:01 7,161 rows

16.

Results Messages

StockItemID	StockItemName	CountryOfManufacture
1	USB missile launcher (Green)	China
2	USB rocket launcher (Gray)	China
3	Office cube periscope (Black)	China
4	DBA joke mug - mind if I join you? (White)	China
5	DBA joke mug - mind if I join you? (Black)	China
6	DBA joke mug - daaaaaa-ta (White)	China
7	DBA joke mug - daaaaaa-ta (Black)	China
8	DBA joke mug - you might be a DBA if (White)	China
9	DBA joke mug - you might be a DBA if (Black)	China
10	DBA joke mug - it depends (White)	China
11	DBA joke mug - it depends (Black)	China
12	DBA joke mug - I will get you in order (White)	China
13	DBA joke mug - I will get you in order (Black)	China
14	DBA joke mug - SELECT caffeine FROM mug (White)	China
15	DBA joke mug - SELECT caffeine FROM mug (Black)	China
16	DBA joke mug - two types of DBAs (White)	China
17	DBA joke mug - two types of DBAs (Black)	China

Query executed successfully.

DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 207 rows

17.

Results Messages

	StockItemID	StockItemName	CountryOfManufacture	TotalQuantityByCountry
1	22	DBA joke mug - it depends (White)	China	8754132
2	35	Developer joke mug - fun was unexpected at this...	China	8754132
3	55	IT joke mug - that behavior is by design (Black)	China	8754132
4	59	RC toy sedan car with remote control (Red) 1/50 ...	China	8754132
5	90	"The Gu" red shirt XML tag t-shirt (Black) XXS	China	8754132
6	104	Alien officer hoodie (Black) 3XL	China	8754132
7	105	Alien officer hoodie (Black) 4XL	China	8754132
8	111	Superhero action jacket (Blue) M	China	8754132
9	115	Superhero action jacket (Blue) 3XL	China	8754132
10	116	Superhero action jacket (Blue) 4XL	China	8754132
11	132	Furry gorilla with big eyes slippers (Black) L	China	8754132
12	137	Animal with big feet slippers (Brown) XL	China	8754132
13	153	Small sized bubblewrap roll 10m	China	8754132
14	156	10 mm Double sided bubble wrap 10m	China	8754132
15	161	20 mm Double sided bubble wrap 50m	China	8754132
16	187	Express post box 5kg (White) 350x280x130mm	China	8754132
17	217	Void fill 200 L bag (White) 200L	China	8754132

✓ Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:02 227 rows

18.

100 % Results Messages

	StockGroupName	2013	2014	2015	2016	2017
1	Computing Novelties	101421	109434	113719	44541	NULL
2	Novelty Items	50145	55173	60134	46812	NULL
3	Packaging Materials	282786	304026	323248	131099	NULL
4	Mugs	11954	12843	14210	5570	NULL
5	T-Shirts	82884	89160	91776	35664	NULL
6	Furry Footwear	19257	20505	22963	8984	NULL
7	USB Novelties	3943	4311	4753	1827	NULL
8	Toys	5870	6483	6983	2730	NULL
9	Clothing	133337	143760	152210	58986	NULL

✓ Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 9 rows

19.

Results Messages

	OrderYear	Novelty Items	Clothing	Mugs	T-Shirts	Airline Novelties	Computing Novelties	USB Novelties	Furry Footwear	Toys	Packaging Materials
1	2013	50145	133337	11954	82884	NULL	101421	3943	19257	5870	282786
2	2014	55173	143760	12843	89160	NULL	109434	4311	20505	6483	304026
3	2015	60134	152210	14210	91776	NULL	113719	4753	22963	6983	323248
4	2016	46812	58986	5570	35664	NULL	44541	1827	8984	2730	131099

✓ Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 4 rows

20.

Results Messages

	InvoiceID	CustomerID	BillToCustomerID	OrderID	DeliveryMethodID	ContactPersonID	AccountsPersonID	SalespersonPersonID	PackedByPersonID	InvoiceDate	CustomerPurchaseOrderID
1	1	832	832	1	3	3032	3032	2	14	2013-01-01	12126
2	2	803	803	2	3	3003	3003	8	14	2013-01-01	15342
3	3	105	1	3	3	1209	1001	7	14	2013-01-01	12211
4	4	57	1	4	3	1113	1001	16	14	2013-01-01	17129
5	5	905	905	5	3	3105	3105	3	14	2013-01-01	10369
6	6	976	976	6	3	3176	3176	13	14	2013-01-01	13383
7	7	575	401	7	3	2349	2001	8	14	2013-01-01	17913
8	8	964	964	8	3	3164	3164	7	14	2013-01-01	14518
9	9	77	1	9	3	1153	1001	7	14	2013-01-01	17577
10	10	191	1	10	3	1381	1001	20	14	2013-01-01	18030
11	11	586	401	11	3	2371	2001	3	14	2013-01-01	17639
12	12	529	401	12	3	2257	2001	15	14	2013-01-01	10941
13	13	473	401	13	3	2145	2001	13	14	2013-01-01	16374
14	14	870	870	14	3	3070	3070	8	14	2013-01-01	17521
15	15	991	991	15	3	3191	3191	3	14	2013-01-01	11911
16	16	414	401	16	3	2027	2001	2	14	2013-01-01	10690

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:11 70,510 rows

21.

--Migrate all the data in the original stock item table.

00 %

Results Messages

	OrderID	OrderDate	OrderTotal	CustomerID
1	1	2013-01-01	79	832
2	2	2013-01-01	79	803
3	3	2013-01-01	79	105
4	4	2013-01-01	79	57
5	5	2013-01-01	79	905
6	6	2013-01-01	79	976
7	7	2013-01-01	79	575
8	8	2013-01-01	79	964

	OrderID	OrderDate	OrderTotal	CustomerID
1	1	2013-01-01	79	832
2	2	2013-01-01	79	803
3	3	2013-01-01	79	105
4	4	2013-01-01	79	57
5	5	2013-01-01	79	905
6	6	2013-01-01	79	976
7	7	2013-01-01	79	575
8	8	2013-01-01	79	964

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 232 rows

22.

Results Messages Client Statistics

	StockItemID	StockItemName	SupplierID	ColorID	UnitPackageID	OuterPackageID	Brand	Size	LeadTimeDays	QuantityPerOuter	IsChillerStock	Barcode
1	1	USB missile launcher (Green)	12	NULL	7	7	NULL	NULL	14	1	0	NULL
2	2	USB rocket launcher (Gray)	12	12	7	7	NULL	NULL	14	1	0	NULL
3	3	Office cube periscope (Black)	12	3	7	6	NULL	NULL	14	10	0	NULL
4	4	USB food flash drive - sushi roll	12	NULL	7	7	NULL	NULL	14	1	0	NULL
5	5	USB food flash drive - hamburger	12	NULL	7	7	NULL	NULL	14	1	0	NULL
6	6	USB food flash drive - hot dog	12	NULL	7	7	NULL	NULL	14	1	0	NULL
7	7	USB food flash drive - pizza slice	12	NULL	7	7	NULL	NULL	14	1	0	NULL
8	8	USB food flash drive - dim sum 10 drive variety ...	12	NULL	9	9	NULL	NULL	14	1	0	NULL
9	9	USB food flash drive - banana	12	NULL	7	7	NULL	NULL	14	1	0	NULL
10	10	USB food flash drive - chocolate bar	12	NULL	7	7	NULL	NULL	14	1	0	NULL
11	11	USB food flash drive - cookie	12	NULL	7	7	NULL	NULL	14	1	0	NULL
12	12	USB food flash drive - donut	12	NULL	7	7	NULL	NULL	14	1	0	NULL
13	13	USB food flash drive - shrimp cocktail	12	NULL	7	7	NULL	NULL	14	1	0	NULL
14	14	USB food flash drive - fortune cookie	12	NULL	7	7	NULL	NULL	14	1	0	NULL
15	15	USB food flash drive - dessert 10 drive variety p...	12	NULL	9	9	NULL	NULL	14	1	0	NULL
16	16	DBA joke muq - mind if I join you? (White)	5	35	7	7	NULL	NULL	12	1	0	NULL

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 227 rows

23.

100 %

Results Messages Client Statistics

	OrderID	OrderDate	OrderTotal	CustomerID
1	80	2013-01-02	74	543
2	81	2013-01-02	74	456
3	82	2013-01-02	74	487
4	83	2013-01-02	74	154
5	84	2013-01-02	74	111
6	85	2013-01-02	74	569
7	86	2013-01-02	74	585
8	87	2013-01-02	74	128

	OrderID	OrderDate	OrderTotal	CustomerID
1	154	2013-01-03	83	84
2	155	2013-01-03	83	427
3	156	2013-01-03	83	911
4	157	2013-01-03	83	484
5	158	2013-01-03	83	914
6	159	2013-01-03	83	569
7	160	2013-01-03	83	547
8	161	2013-01-03	83	430

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 5,186 rows

24.

25.

100 %

Results Messages Client Statistics

1	JSON_F52E2B61-18A1-11d1-B105-00805F49916B
1	[{"OrderYear":2013,"Novelty_Items":50145,"Clothing":133337,"Mugs":11954,"T-Shirts":82884,"Airline Novelties":null,"Computing Novelties":101421,"USB Novelties":3943,"Fu...

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:00 1 rows

26.

27.

100 %

Results Messages Client Statistics

	id	Date	Value
1	1	2013-01-01	{"InvoiceID":1,"CustomerID":832,"BillToCustomerID":832,"ShipToCustomerID":832,"Shi...

Query executed successfully. DESKTOP-PUBMTJ9 (15.0 RTM) DESKTOP-PUBMTJ9\jingji... WideWorldImporters 00:00:46 1 rows

28.

Transaction is a group of logical work to perform a single or multiple operations in a database. Transaction may consist of a single read, write, delete or update operation or a combination of these operations, so it consists of one or more SQL statements.

The main idea of transaction is all the operations will be executed together, if any operation in the transaction return error, the entire operations will roll back to ensure data integrity, and if all operations are complete successfully, the data modification will be permanent in the database.

Let's take WideWorldImporters for an example.

All the orders from customers are in the table Sales.Orders, and all the items are in the table Warehouse.StockItems. If there is an order from customer, there will be two SQL statements, one is to update the order table, and the other is to update the stock items table. These two statements must be completed successfully at the same time. If one statement complete successfully and the other one failed, it will be unacceptable.

Therefore, transaction has the following 4 standard properties ACID.

- Atomicity. This ensures all operations in the transaction are completed successfully, if one operation fail, it will roll back to their former state.
- Consistency. This ensures all the data will be consistent after a transaction is completed.
- Isolation. All the transactions are isolated from other transactions.
- Durable. Once the modification committed, the modification will be permanent in the database.

Isolation levels specifies how much one transaction must be protected from resource or data modifications made by other transactions. Suppose user A is trying to read a table, and user B is trying to modify the this table at same time. When user A come back to read this table, what information he/she may read? Isolation levels may decide what would happen in this case. The isolation levels are normally have two groups: pessimistic ones and optimistic ones. If use optimistic levels, the readers cannot block writers, and the writers cannot block readers, but the writer can block another writer. If use pessimistic levels, after a user performs an action that causes a lock to be applied, other users cannot perform actions that would conflict with the lock until the owner release it.

FOR PROBLEM 29, I didn't have enough time to do. I will do this one after submission.

FOR PROBLEM 30 AND 32, We have discussed but still have no idea.

For problem 30, we reviewed the database 'AdventureWorks2019' very carefully to try to understand the meaning of the data including the data columns, data type, data meaning, but we found the tables, schemas, columns are totally different with the target tables. For example, both table have the personal information, but they are stored in different structures. In the WWI database, person name is stored with 'FullName', but in the AdventureWorks2019 database, it is stored with 'First name' and 'last name'.

