



Primary and Foreign Keys

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Primary Keys

- Dimension tables should use **surrogate keys**.
- Fact tables should use **composite keys** made up of **dimension foreign keys** and **degenerate dimensions**.
- Surrogate keys can be used in the fact table, but they increase the table size and do not improve performance.
- Surrogate keys are **number sequences**. **Date surrogate keys** should be of the form YYYYMMDD.
- ***Every byte counts in your fact table!***

Foreign Keys

- **Foreign keys** are important. Don't devalue!
- FKs enforce **referential integrity** between the PK in the dimension table and the FK in the fact table.
- ***This prevents you from inserting invalid data into the fact table.***
- If you're concerned about the **performance impacts of constraint checking**, you can drop the FKs, insert the data, then reinstate the constraints with the no-check option.

Example: Primary and Foreign Keys

	CustomerKey	CustomerID	CompanyName	ContactName	ContactTitle	CustomerCountry	CustomerRegion	CustomerCity
1	65	QUICK	QUICK-Stop	Horst Kloss	Accounting Manager	Germany	N/A	Cunewalde
2	67	RATTC	Rattlesnake Canyon Grocery	Paula Wilson	Assistant Sales Representative	USA	NM	Albuquerque
3	50	LONEP	Lonesome Pine Restaurant	Fran Wilson	Sales Manager	USA	OR	Portland
4	88	WANDK	Die Wandemde Kuh	Rita Müller	Sales Representative	Germany	N/A	Stuttgart
5	60	PERIC	Pericles Comidas clásicas	Guillermo Fernández	Sales Representative	Mexico	N/A	México
6	16	CHOPS	Chop-suey Chinese	Yang Wang	Owner	Switzerland	N/A	Bern
7	64	QUEEN	Queen Cozinha	Lúcia Carvalho	Marketing Assistant	Brazil	SP	Sao Paulo
8	43	LAMAI	La maison d'Asie	Annette Roulet	Sales Manager	France	N/A	Toulouse
9	62	PRINI	Princesa Isabel Vinhos	Isabel de Castro	Sales Representative	Portugal	N/A	Lisboa
10	46	LEHMS	Lehmanns Marktstand	Renate Messner	Sales Representative	Germany	N/A	Frankfurt

	ProductKey	OrderID	CustomerKey	EmployeeKey	OrderDateKey	ShippedDateKey	Quantity	ExtendedPriceAmount	DiscountAmount	SoldAmount
1	1	10285	65	1	19960820	19960826	45	648.0000	129.6000	518.4000
2	1	10294	67	3	19960830	19960905	18	259.2000	0.0000	259.2000
3	1	10317	50	5	19960930	19961010	20	288.0000	0.0000	288.0000
4	1	10348	88	3	19961107	19961115	15	216.0000	32.4000	183.6000
5	1	10354	60	7	19961114	19961120	12	172.8000	0.0000	172.8000
6	1	10370	16	5	19961203	19961227	15	216.0000	32.4000	183.6000
7	1	10406	64	6	19970107	19970113	10	144.0000	0.0000	144.0000
8	1	10413	43	2	19970114	19970116	24	345.6000	0.0000	345.6000
9	1	10477	62	4	19970317	19970325	15	216.0000	0.0000	216.0000
10	1	10522	46	3	19970430	19970506	40	720.0000	144.0000	576.0000