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Hila Kantor (https://www.sisense.com/blog/author/hila/)
February 19, 2018

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dashboa(dashboa(dashbase sisense com/WBWalkthroughforyourfirstEC-Datamodelingfundamentals\_Website.html) might recall, a primary

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sна**кеу** is a unique identifier given to a record in our database, which we can use whe r querying the database or in order to The Beginners (Buide to MySQL)

Storage Engines Itiple sources. This article will discuss the concept of **surrogate keys** and show some examples of when and how the lambda apply them using simple SQL. guide-to-mysal-storage-engines/)

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### Sign up to get General Guidelines for Selecting Primary Keys

developments in business analytics, data Before we dive into natural vs surrogate keys, let's recall four important rules to follow when selecting a primary key for your data analysis and sisense. model:

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- 1. The primary key must be unique for each record. A primary key with duplicates will lead to inaccurate gueries with Relateichtenststs and totals. If two customers are assigned the primary key, their sales activity will be unintentionally blended together. If the customer is accidentally duplicated, their sales activity will also be duplicated. Database architects refer to this
- Hoasta loakcafateféreant alventégaity.
  - @r**owth**primary key must apply uniform rules for all records. Whether your key is strictly numeric, alphanumeric, or a random (httpyst/emwge.siscented.valueblear/baleolate/must be programmed in a consistent format. This format must exist despite whatever yearone plegitiest there are in the business requirements. An inconsistent format can lead to difficult data analysis, especially in
- parent/child data relationships. SQL Cheat Sheet: Retrieving
  - The primary key must stand the test of time. A key based off of contextual data lumn bescription in SQL (https://www.sisense.com/glossary/contextual-data/) at the present time, may not have the same contextual meaning later. For example, if a customer ID key is based on customer name, what happens when a customer is acquired or reorganized? Lps://www.sisense.com/blog/sql-Changing key formats should be avoided at all costs. Changing keys will require changing all stored procedures referencing the cheat-sheet-retrieving-column-new key in any JOINs or WHERE clauses, as well as UPDATEs to all existing references to the old key in all of your database description-sql-server/)
- 4.3 The offinary key must be read-only. In order to stand the test of time, primary keys should never be edited. Edited primary Practises an 4 left Ribbs 1993 123 vs 132123), varying formats based on the user's preference (1 vs 000001), and allow for (htt: Watch: an Paralle of primary keys. design-principles-creating-better-

# electing & Primary Key: Surrogate vs Natural Keys The Beginne Per Wide to MySQL

First prage Engines difference between these two forms of primary keys:

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A natural key is a key that has contextual or business meaning (for example, in a table containing STORE, SALES and DATE we Subscribe to four Blogal key when joining with another table detailing inventory).

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developments in business analytics, data. A natural key can be system-generated, but natural keys are at least partially determined by a manual process. Some natural keys analysis and Sisense. The sisense of a natural key is a stock ticker symbol – i.e. MSFT, APPL, are totally manually generated. One of the most widely recognized uses of a natural key is a stock ticker symbol – i.e. MSFT, APPL, and GOOGL. Natural keys serve as a great primary key when contextual meaning is important.

Representation which does not have any contextual or business meaning. It is manufactured "artificially" and only for the purposes of data analysis. The most frequently used version of a surrogate key is an increasing sequential integer or "counter" 

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# Vhen should you stick to natural keys in your data model?

The main advantage of natural keys is in their simplicity and in the fact that the data maintains its original context. They will often be (relatively) easy to recognize to people viewing the data, and relying on natural keys reduces the need to enrich the data using customes on Additional ving-better-

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Storage Engines are great for multiple data types in the database. Natural keys allow the user to easily identify the data type https://www.sisensa.com) From the key, even when multiple data types use similar key formats. Financial databases frequently format their keys using a guide-to-mysgl-storage-angines/) ratural and sequential key together.

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Even though all three records contain a sequential ID of 123, the natural key prefix allows the user to immediately identify

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Grayuth ral keys work well when connecting two systems with two different primary key formats. Thus for example, we can (https://www.sisense.com/blog/calculate-

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001D0000001Rt53

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Practices – 4 Key Principles Natural key Customer ID: (htth Watchiar Demolog/4-

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Then Breging be will welly to the Stock ticker symbol is for Googe ... Easier recognition also allows for easier search.

#### Storage Engines Natural Keys

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While it might be tempting and initially easier to rely on existing natural keys, this could prove problematic when scaling the data **Subscribe to Our Blog** model (https://www.sisense.com/slog/10-techniques-to-boost-your-data-modeling/), or in a more complex environment, which we will derrose strategies and make the complex of stock tickers:

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• Natural keys do not apply uniform rules for each record. Designators or variables in the natural key make the key difficult to query and understand after the fact. For example, stock ticker symbols of preferred shares have a multitude of designators, including P, PR, and /PR. Trying to query for the designator P (SELECT \* FROM stock\_quotes WHERE stock\_ticker\_symbol like

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- Natural keys do not stand the test of time. Symbols which might have been business meaning could become meaningless,

- How the area different meaning in the future. Thus, for example, the symbols GOOG and GOOGL do not accurately represent the Group ganization of the company from Google to Alphabet.
  - (nttps://www.ssense.com/biog/calculated with each other. Sticking with the previous example when Twitter was ready to year-year-growth?) under the ticker TWTR, many investors bought from a defunct electronics company named Tweeter, trading under the ticker TWTRQ. Because TWTR and TWTRQ contain the same first four letters, many investors unintentionally invested
- SQL Cheat Sheet: Retrieving to the wrong stock. Weeter later changed their ticker symbol to THEGQ, which could also be misconstrued with GQ Magazine Column Description in SQL Server

## Achten Surrogate Keys

description-sql-server/) As mentioned, a surrogate key sacrifice some of the original context of the data. However, it can be extremely useful for analytical purposterord মিহু রাজ্ঞান্ত দের reasons:

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- (htt. A at chian sepholog/4-• Surrogate keys are unique. Because surrogate keys are system-generated, it is impossible for the system to create and store design-principles-creating-bettera duplicate value.
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  estirrogate/keys apply/aniform rules to all records. The surrogate key value is the result of a program, which creates the shares
- They Beginning Per Builded violuly Stoly key created as a result of a program will apply uniform rules for each record.

Storage Engines Surrogate keys stand the test of time. Because surrogate keys lack any context or business meaning, there will be no need In the change the key in the future.

surrogate keys allow for unlimited values. Sequential, timestamp, and random keys have no practical limits to unique Subscribe to Our Blog

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### Combining Natural and Surrogate Keys

analysis and Sisense.

Certain business scenarios might require keeping the natural key intact as a means for users to interact with the database. In these cases...

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While users may interact with the natural key, the database can still have surrogate keys outside of the users' view, with no

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# And Example of Adding a Surrogate Key Using Custom SQL

In the following example we will look at a table containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startiful for the containing historical data about product prices. By using a custom SQL expression in the fisher following startific for the containing historical data about product prices. By using a custom SQL expression in the fisher for the containing historical data about product prices. By using a custom SQL expression in the containing historical data about product prices. By using a custom SQL expression in the containing historical data about product prices. By using a custom SQL expression in the containing historical data about product prices. By using a custom SQL expression in the containing historical data about product prices. By using a custom SQL expression in the containing historical data about prices. By using a custom SQL expression in the con

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```
tostring(ProductID)+'-'+tostring(Getday(Date)) AS guide-to-mysal-storage-engines/)
Prod_Date_Key, Date,

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```

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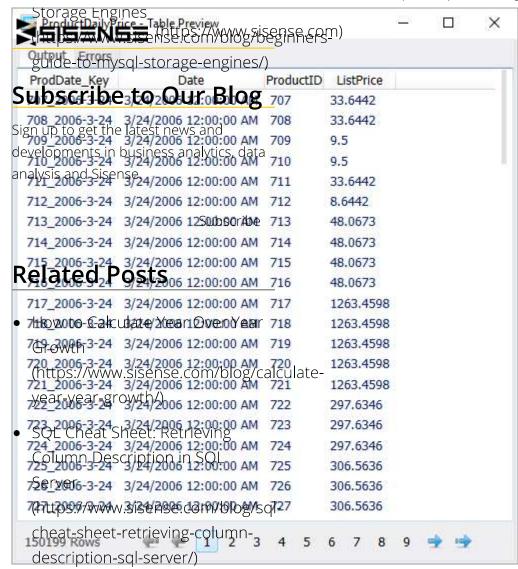
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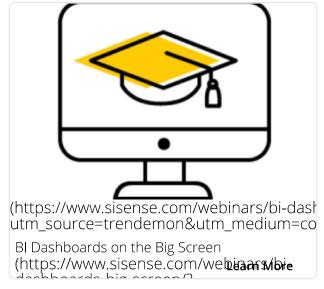
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