

TIPE DATA DAN SKEMA

SQL Data Definition and Data Types



TYPE-TYPE DATA DLM SQL

- Numeric
- Character-string
- Bit-string (image)
- DateTime



TIPE DATA NUMERIC

■ Bilangan- Bilangan integer :

Tipe Data	Ukuran Tempat	Rentang Nilai
Byte	1 byte	0 s/d +255
Shortint	1 byte	-28 s/d +127
Integer	2 bytes	-32768 s/d 32767
Word	2 bytes	0 s/d 65535
Longint	4 bytes	2147483648 s/d 2147483647

■ Bilangan- Bilangan real

Tipe Data	Ukuran Tempat	Rentang Nilai
real	6 bytes	2.9×10^{-39} s/d 1.7×10^{38}
single	4 bytes	1.5×10^{45} s/d 3.4×10^{38}
double	8 bytes	5.0×10^{-324} s/d 1.7×10^{308}
extended	10 bytes	3.4×10^{-4932} s/d 1.1×10^{4932}
comp	8 bytes	-9.2×10^{18} s/d 9.2×10^{18}

Format number di deklarasi :

DECIMAL(i,j) atau DEC(i,j)

atau

NUMERIC(i,j)

i → presisi (jml. Decimal digit)

j → scale (jml. Digit pecahan)



TIPE DATA CHARACTER-STRING :

- Fixed Length : CHAR(n) atau CHARACTER(n)
- Varying Length : VARCHAR(n) atau CHAR VARYING(n) Atau CHARACTER VARYING(n)
- n → jml. Maksimum dari CHARACTER
- (default n = 1)
- Nilai-nilai yang termasuk karakter adalah:
 - a) Karakter huruf : 'a'..'z', 'A'..'Z'
 - b) Karakter angka : '0'..'9'
 - c) Karakter tanda baca : titik, koma, titik koma, titik dua dan sebagainya
 - d) Karakter khusus : \$, %, #, @ dan sebagainya.



TIPE DATA BIT-STRING :

- Fixed Length : BIT(n) , n = jml bit
- Varying Length : BIT VARYING(n) , n = jml bit maksimum
- (default n = 1)
- Disebut juga BLOB (Binary Large Object)



TIPE DATA DATE & TIME :

- DATE mempunyai 10 posisi dengan format untuk komponen YEAR-MONT-DAY : YYYY-MM-DD
- TIME paling sedikit mempunyai 8 posisi untuk komponen HOUR-MINUTE-SECOND dengan format : HH-MM-SS
- Detail mengenai manipulasi dari tipe data DATE & TIME dapat mengacu pada Reference Manual SQL yang di pakai.
- Format oracle : DD-MON-YYYY HH:MI:SS



Schema and Catalog Concepts in SQL



SCHEMA

- An **SQL schema** is identified by a **schema name**, and includes an **authorization identifier** to indicate the user or account who owns the schema, as well as **descriptors** for *each element* in the schema.
- Schema **elements** include tables, constraints, views, domains, and other constructs (such as authorization grants) that describe the schema.



SCHEMA

The syntax for the **CREATE SCHEMA** statement is:

```
CREATE SCHEMA AUTHORIZATION schema_name  
[create_table_statement]  
[create_view_statement]  
[grant_statement];
```

Parameters or Arguments

schema_name

The name of the schema (which is the same as your Oracle username that you are logged in as).

create_table_statement

Optional. It is a valid CREATE TABLE statement.

create_view_statement

Optional. It is a valid CREATE VIEW statement.

grant_statement

Optional. It is a valid GRANT statement.



SCHEMA

Example :

```
CREATE SCHEMA AUTHORIZATION smithj
  CREATE TABLE products
    ( product_id number(10) not null,
      product_name varchar2(50) not null,
      category varchar2(50),
      CONSTRAINT products_pk PRIMARY KEY (product_id)
    );
```



USER

- Membuat User baru :

- Sintax :

CREATE USER UserName IDENTIFIED BY UserPassword ;

- Membuka/Menutup Lock User :

- Sintax :

ALTER USER UserName ACCOUNT LOCK ;

ALTER USER UserName ACCOUNT UNLOCK ;

- Mengubah Password User :

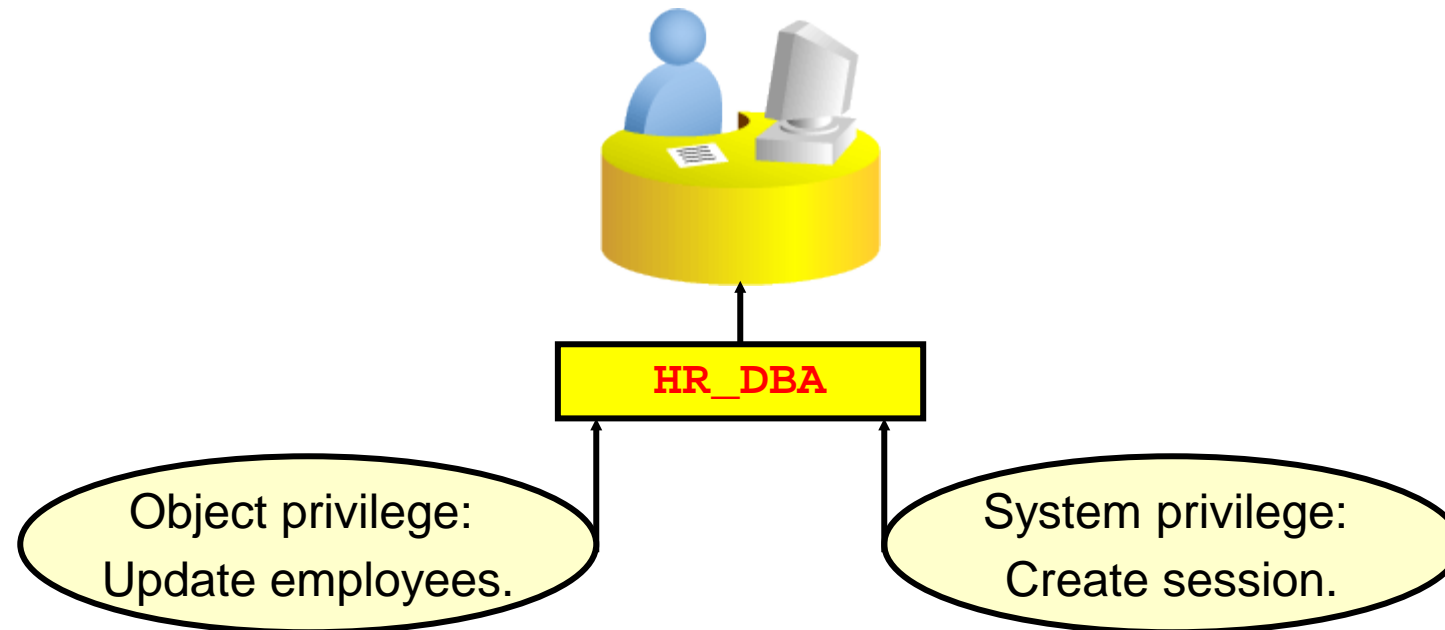
- Sintax :

ALTER USER UserName IDENTIFIED BY NewUserPassword ;

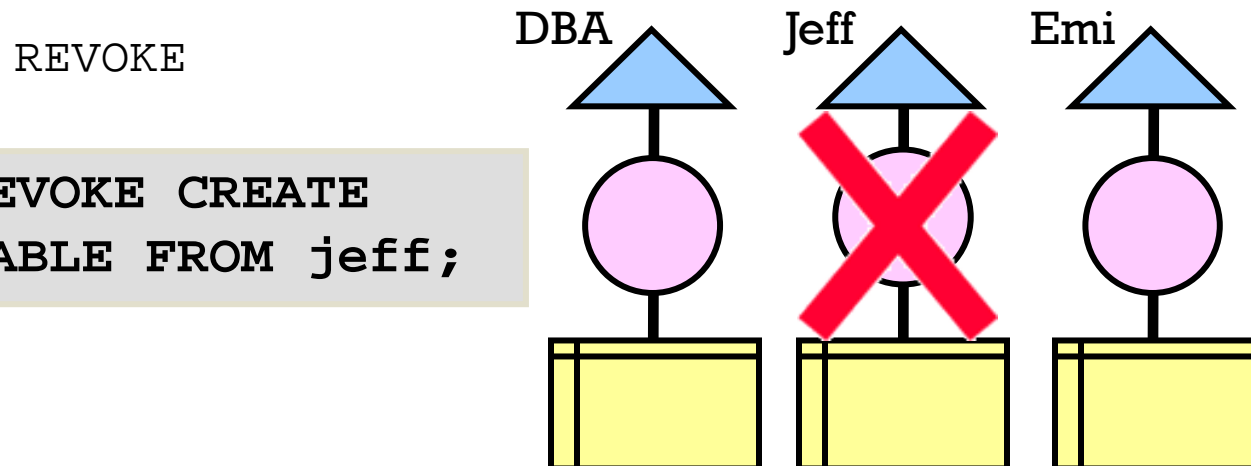
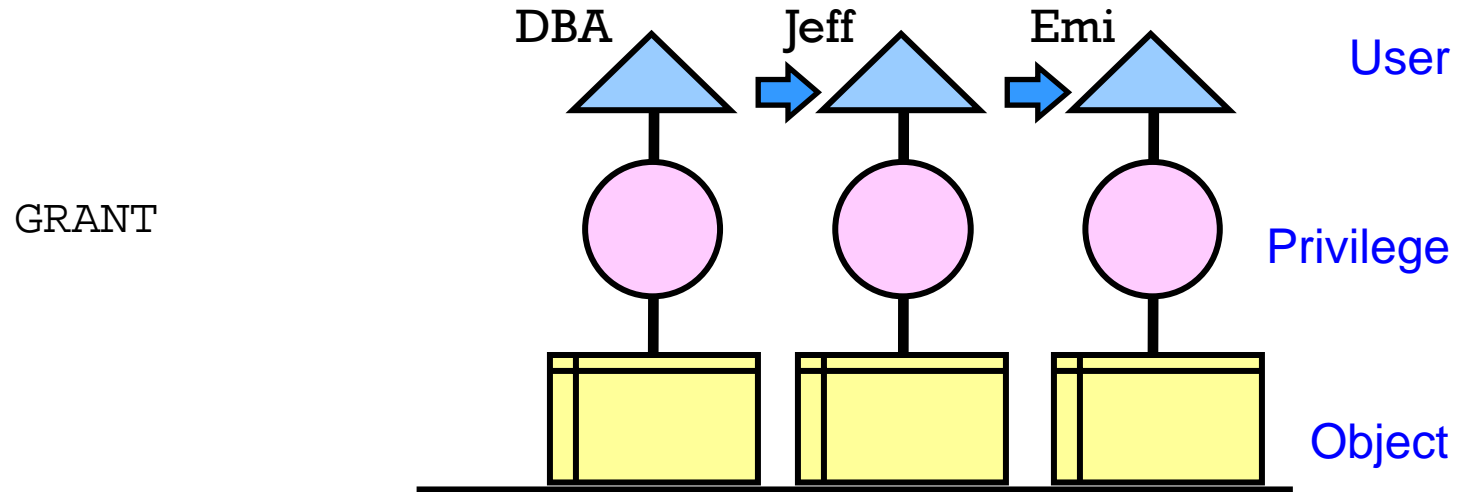


PRIVILEGES (HAK AKSES)

- There are two types of user **privileges**:
 - System: Enables users to perform particular actions in the database
 - Object: Enables users to access and manipulate a specific object



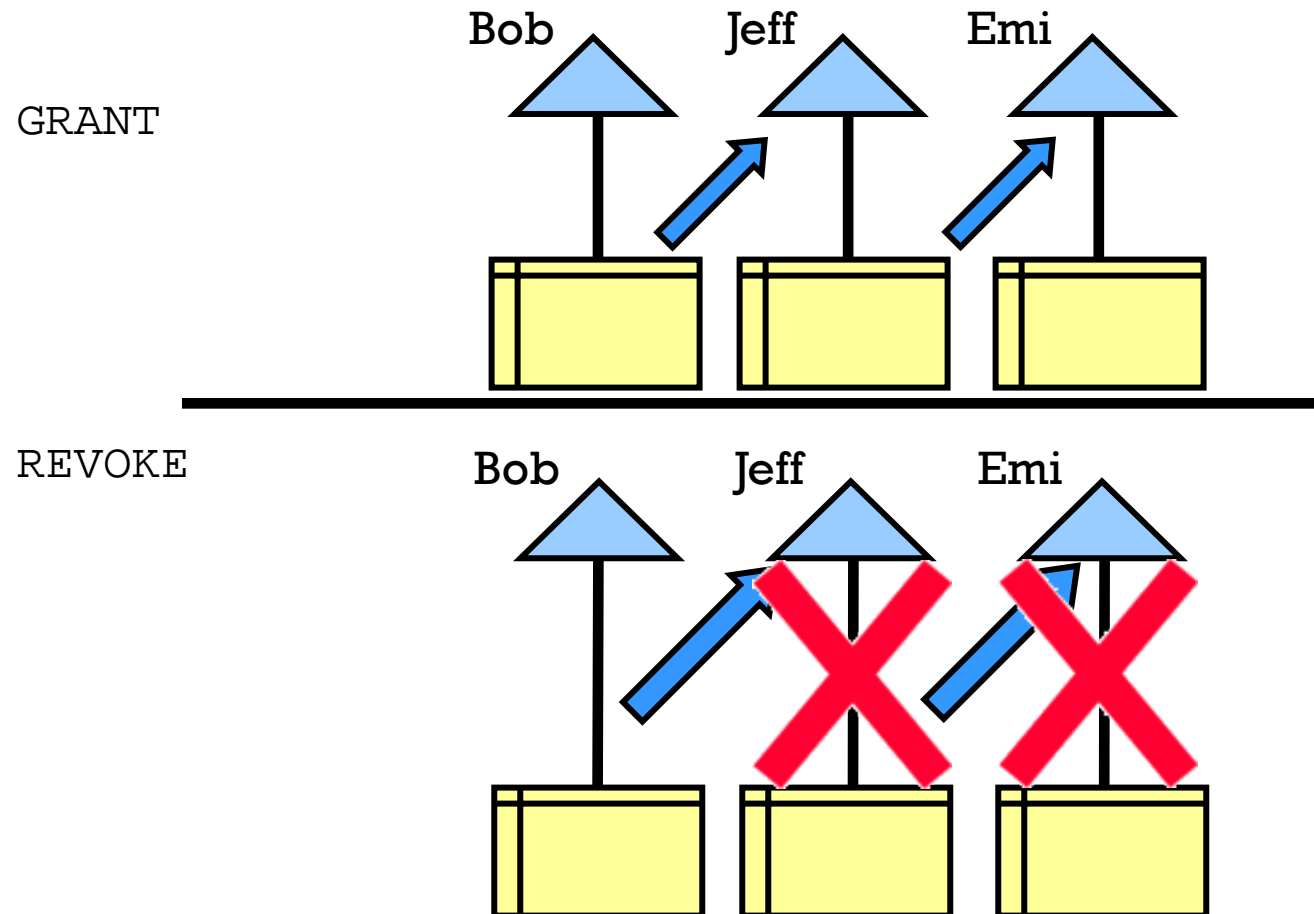
REVOKING SYSTEM PRIVILEGES WITH ADMIN OPTION



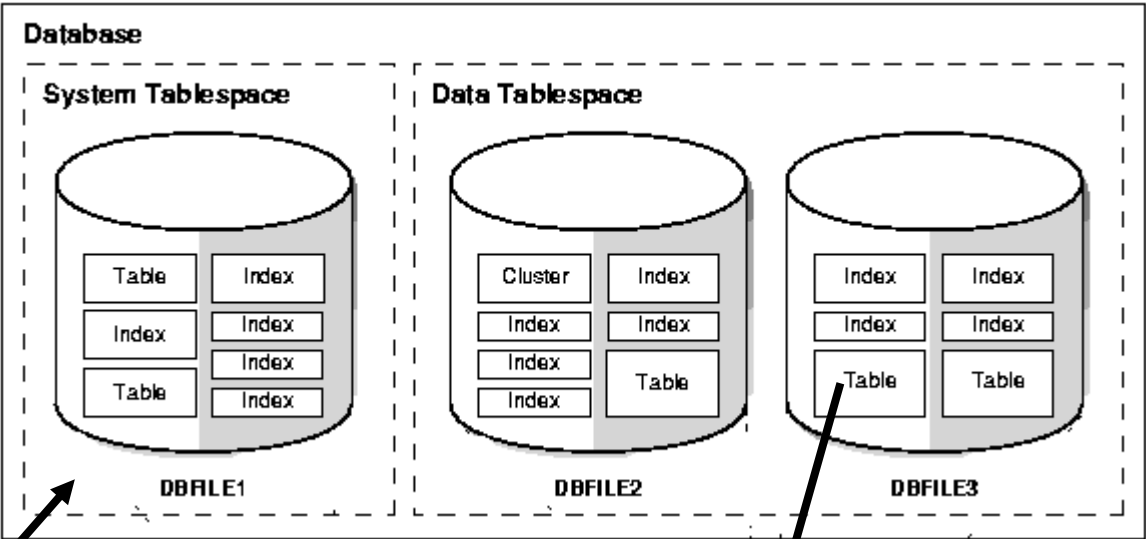
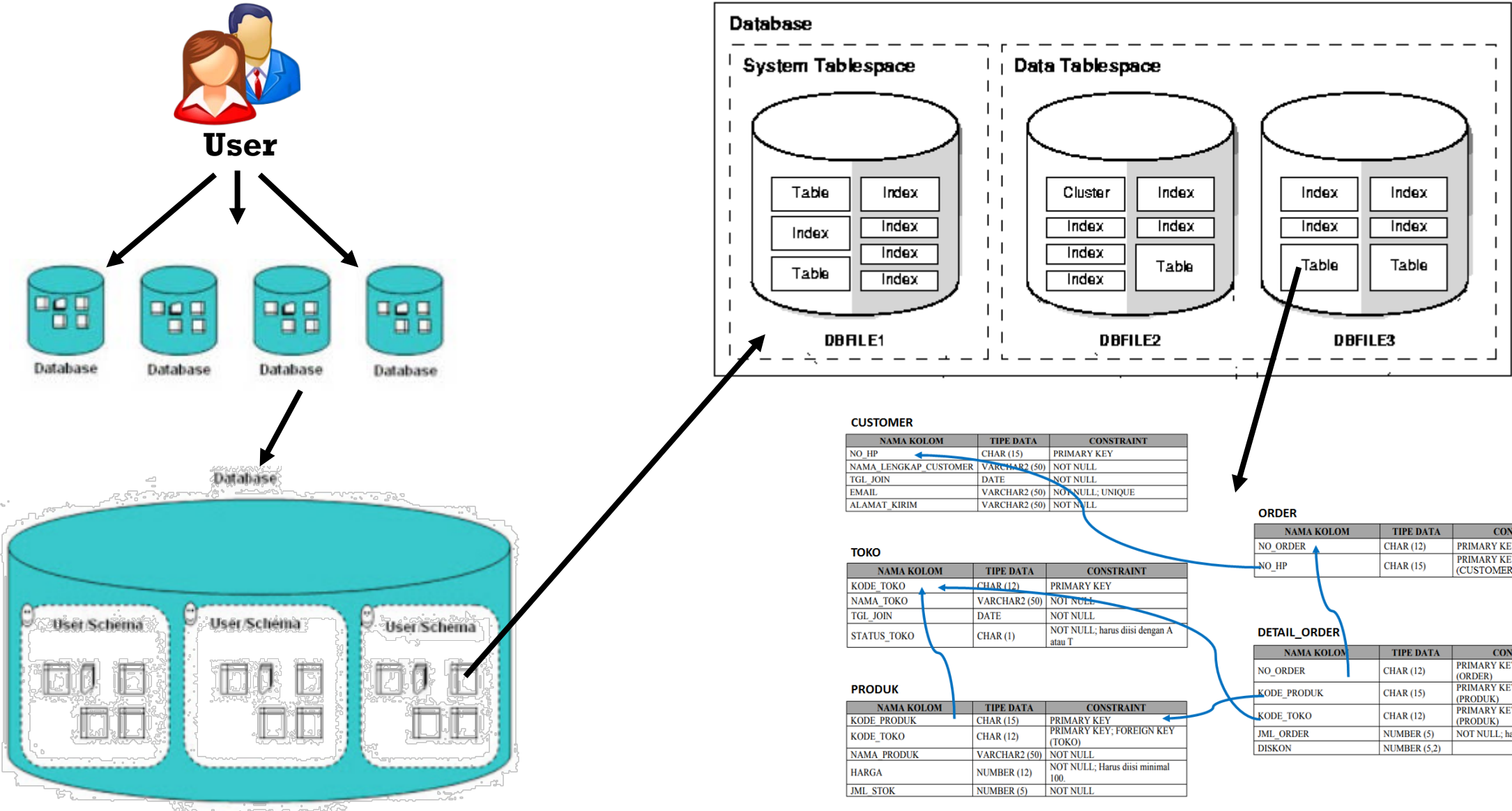
```
REVOKE CREATE  
TABLE FROM jeff;
```



REVOKING OBJECT PRIVILEGES WITH GRANT OPTION



USER SCHEMA DATABASE



CUSTOMER

NAMA KOLOM	TIPE DATA	CONSTRAINT
NO_HP	CHAR (15)	PRIMARY KEY
NAMA LENGKAP_CUSTOMER	VARCHAR2 (50)	NOT NULL
TGL_JOIN	DATE	NOT NULL
EMAIL	VARCHAR2 (50)	NOT NULL; UNIQUE
ALAMAT_KIRIM	VARCHAR2 (50)	NOT NULL

TOKO

NAMA KOLOM	TIPE DATA	CONSTRAINT
KODE_TOKO	CHAR (12)	PRIMARY KEY
NAMA_TOKO	VARCHAR2 (50)	NOT NULL
TGL_JOIN	DATE	NOT NULL
STATUS_TOKO	CHAR (1)	NOT NULL; harus diisi dengan A atau T

PRODUK

NAMA KOLOM	TIPE DATA	CONSTRAINT
KODE_PRODUK	CHAR (15)	PRIMARY KEY
KODE_TOKO	CHAR (12)	PRIMARY KEY; FOREIGN KEY (TOKO)
NAMA_PRODUK	VARCHAR2 (50)	NOT NULL
HARGA	NUMBER (12)	NOT NULL; Harus diisi minimal 100.
JML_STOK	NUMBER (5)	NOT NULL

ORDER

NAMA KOLOM	TIPE DATA	CONSTRAINT
NO_ORDER	CHAR (12)	PRIMARY KEY
NO_HP	CHAR (15)	PRIMARY KEY; FOREIGN KEY (CUSTOMER)

DETAIL_ORDER

NAMA KOLOM	TIPE DATA	CONSTRAINT
NO_ORDER	CHAR (12)	PRIMARY KEY; FOREIGN KEY (ORDER)
KODE_PRODUK	CHAR (15)	PRIMARY KEY; FOREIGN KEY (PRODUK)
KODE_TOKO	CHAR (12)	PRIMARY KEY; FOREIGN KEY (PRODUK)
JML_ORDER	NUMBER (5)	NOT NULL; harus diisi minimal 1
DISKON	NUMBER (5,2)	