

Data Definition Language (DDL)

Database Design and Development
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What to do with the structure of the database

- ▶ We are making or destroying things within the DBMS
 - ▶ Structures
 - ▶ Individuals/Groups
 - ▶ Actions
 - ▶ Tools

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CREATE

- ▶ Used to make DATABASE, TABLE, VIEW, INDEX, ROLE, USER, FUNCTION, PROCEDURE, and TRIGGER entities
- ▶ DATABASE, TABLE, and VIEW are structures
- ▶ INDEX is tool to increase retrieval speed
- ▶ ROLE and USER are groups and individuals with access
- ▶ FUNCTION and PROCEDURE are store methods within the database
- ▶ TRIGGER is an event fired upon some condition

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CREATE DATABASE syntax

```
CREATE DATABASE alternate_universes;
USE alternate_universes;
```

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CREATE TABLE syntax

```
CREATE TABLE table_name
(
  field_name TYPE MODIFIERS NOT NULL,
  other_field TYPE MODIFIERS NOT NULL,
  -- other fields as needed
  -- separate each line with commas
  -- remember to use tabs!
)
ENGINE = InnoDB -- The storage engine (default)
DEFAULT CHARSET = utf16 -- What symbols are allowed
COLLATE = utf16_bin -- This means characters get evaluated including case
COMMENT = 'Extra information that is not stored in name of table and fields';
```

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CREATE VIEW syntax

```
--Simple VIEW
CREATE VIEW
view_name
AS SELECT
fields,
separated,
by_commas
FROM
table_name;
```

```
-- Complex View
CREATE VIEW
view_name
AS SELECT
table_1.field,
table_2.field,
table_n.field
FROM
table_1
JOIN
table_2
ON
table_1.id = table_2.id
UNION
table_n;
```

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ALTER

- ▶ Change the physical structure of the TABLE
- ▶ Used after the creation
- ▶ Best Practice
 - ▶ Add Primary and Foreign Key
- ▶ Bad Practice
 - ▶ Add/remove columns

ALTER syntax

```
ALTER TABLE
  universe
ADD PRIMARY KEY
(id);

ALTER TABLE
  characters
ADD PRIMARY KEY
(id);
```

```
ALTER TABLE
  characters
ADD CONSTRAINT
  fk_universe_characters
FOREIGN KEY
  (universe)
REFERENCES
  universe (id)
ON DELETE CASCADE
ON UPDATE CASCADE;
```

DROP

- ▶ Destroys the specified structure and ANY and ALL data associated with it!!!
- ▶ There are no prompts or warnings
- ▶ One DATABASE can be specified
 - ▶ You can DROP even while USING another databas.!!!
- ▶ Multiple TABLE can be specified in same statement
 - ▶ In or out of other databases!!!
- ▶ Only get errors if the specified table is not found

DROP syntax

```
--DROP Syntax
DROP TABLE
  table_name;

DROP TABLE IF EXISTS
  table_name;

DROP DATABASE
  database_name;
```

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TRUNCATE

- ▶ Removes ALL data from a table
- ▶ Although it affects data it is usually seen as a DDL command because it effectively calls DROP TABLE / CREATE TABLE (...) as a single event

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