

[639] Structured Query Language (SQL)

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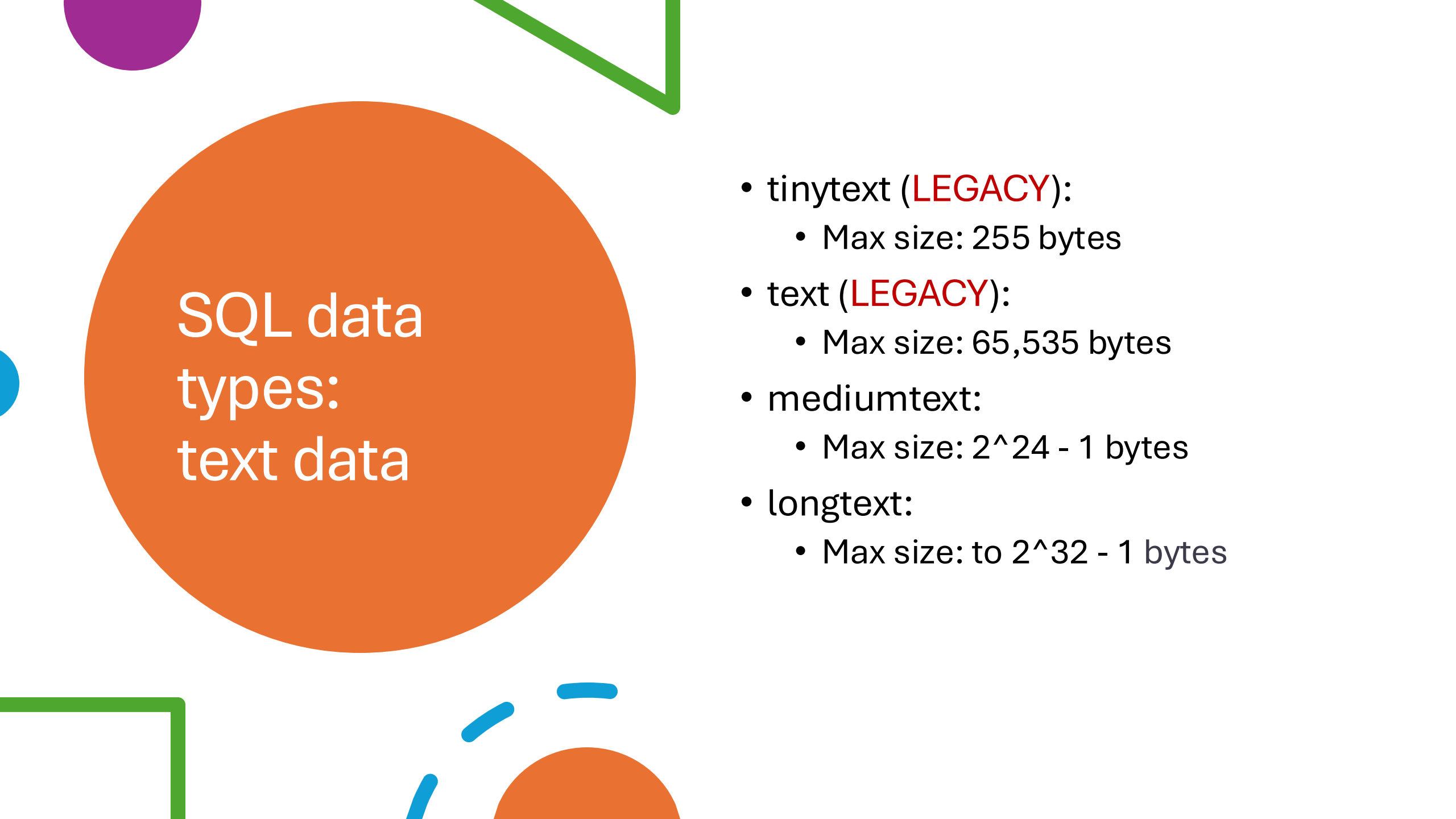
Learning Objectives

Create	tables to conform to a schema
Differentiate	various SQL data types
Insert	data into tables
Delete	data from tables
Drop	unwanted tables



SQL data types: character data

- `char(<size>)`:
 - Fixed length strings
 - Right-padded
 - Max length: 255 bytes
- `varchar(<size>)`:
 - Variable length strings
 - Max length: 65,535 bytes
- character set:
 - foreign language support



SQL data types: text data

- tinytext (**LEGACY**):
 - Max size: 255 bytes
- text (**LEGACY**):
 - Max size: 65,535 bytes
- mediumtext:
 - Max size: $2^{24} - 1$ bytes
- longtext:
 - Max size: to $2^{32} - 1$ bytes



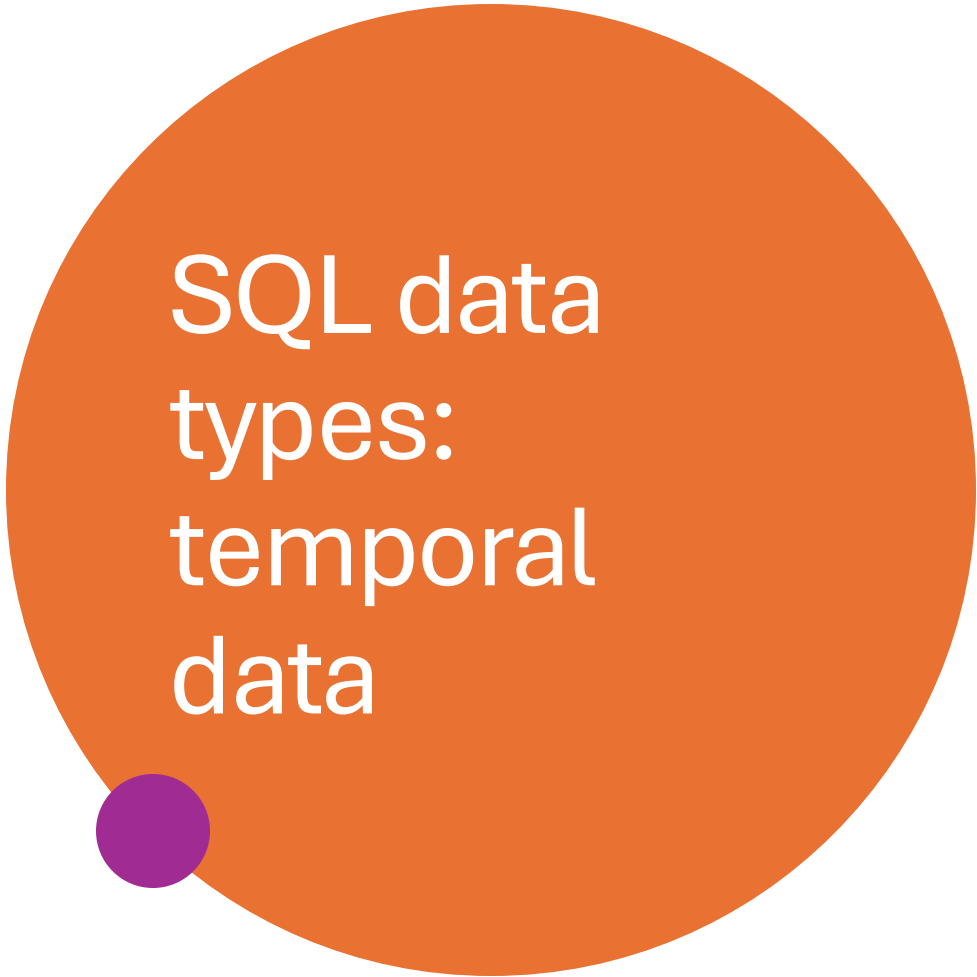
SQL data types: numeric data

- tinyint:
 - Signed range: -128 to 127
 - Unsigned range: 0 to 255
- smallint:
 - Signed range: -32,768 to 32,767
 - Unsigned range: 0 to 65,535
- mediumint:
 - Unsigned range: 0 to $2^{24} - 1$
- int:
 - Unsigned range: 0 to $2^{32} - 1$
- bigint:
 - Unsigned range: 0 to $2^{64} - 1$
- float & double: 4 and 8 bytes



SQL data types: numeric data

- precision:
 - total number of allowable digits both to the left and to the right of the decimal point
- scale:
 - number of allowable digits to the right of the decimal point
- float(p, s): typically 4 bytes
- double(p, s): typically 8 bytes



SQL data types: temporal data

- date:
 - Format: YYYY-MM-DD
- datetime:
 - Format: YYYY-MM-DD HH:MI:SS
- timestamp:
 - Format: YYYY-MM-DD HH:MI:SS
- year:
 - Format: YYYY
- time:
 - Format: HHH:MI:SS