*--*

*-- An SQL Join is needed when you require columns from multiple tables*

*--*

*-- Two Join formats:*

*--*

*-- Traditional: Opportunity for error - forget join predicates - Cartesian Product (A lot more rows that you want)*

*--*

*-- 1. Select - the columns you want in the result using qualifiers if duplicate names you need*

*-- 2. From - code table names separated by columns with optional correlation names (nicknames, aliases)*

*-- 3. Where - columns that match between the tables (Join condition)*

*-- 4. Additional Where predicates, GROUP BY, ORDER BY LIMIT are also allowed*

*--*

*-- if you forgot the join condition - no error was generated*

*-- what was returned is Catersian Product*

*-- each from from one table is returned with each row from the other*

*-- if one table had 100 rows and the other table had 1000 rows the result would have 100,000 rows*

*--*

*-- Modern: Safer - no way to forget the join predicate*

*--*

*-- 1. Select - the columns you want in the result using qualifiers if duplicate names you need*

*-- 2. From - code one table name with optional correlation name (nickname, alias)*

*-- 3. INNER JOIN - the type of Join - INNER JOIN is the matching Join*

*-- 4. other-table - with optional correlation name (nickname, alias)*

*-- 5. ON join-condition - any WHERE predicate you know*

*--*

*--*

*-- List city name, country, continent*

*-- in the world*

*--*

*-- city name - City table*

*-- country name and continent is in the country table*

*--*

*-- We need a Join due to having columns in multiple tables*

*--*

*--*

*-- Traditional Syntax - 2 table join*

*--*

**Select** ct.**name** **as** City\_Name *-- City name - City table*

, cy.**name** **as** Country\_Name *-- Country Name - Country table*

, continent *-- Continent - Country table*

**from** city ct *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

,country cy *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

**where** cy.code **=** countrycode *-- Only rows where the country code in country = country code in city*

**and** cy.population **>** 1000000 *-- Only show cities with more than one million people*

**order** **by** cy.population

;

*--*

*-- Modern Syntax - 2 table join*

*--*

**Select** ct.**name** **as** City\_Name *-- City name - City table*

, cy.**name** **as** Country\_Name *-- Country Name - Country table*

, continent *-- Continent - Country table*

**from** city ct *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

**inner** **join** *-- type of join - inner join - match rows between tables*

,country cy *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

**on** cy.code **=** countrycode *-- join condition - how to match rows between the tables*

**where** cy.code **=** countrycode *-- Only rows where the country code in country = country code in city*

**and** cy.population **>** 1000000 *-- Only show cities with more than one million people*

**order** **by** cy.population

;

*--*

*-- Traditional Syntax - 3 table join*

*--*

**Select** ct.**name** **as** City\_Name *-- City name - City table*

, cy.**name** **as** Country\_Name *-- Country Name - Country table*

, continent *-- Continent - Country table*

, **language** *-- Language spoken - countrylanguage table*

**from** city ct *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

,country cy *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

,countrylanguage cl

**where** cy.code **=** ct.countrycode *-- Only rows where the country code in country = country code in city*

**and** cy.code **=** cl.countrycode

;

*--*

*-- Modern Syntax - 3 table join*

*--*

**Select** ct.**name** **as** City\_Name *-- City name - City table*

, cy.**name** **as** Country\_Name *-- Country Name - Country table*

, continent *-- Continent - Country table*

, **language** *-- Language spoken - country-language table*

**from** city ct *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

**inner** **join** *-- type of join - inner join - match rows between tables*

country cy *-- Correlation name (nickname or alias) may be assigned to table to ease coding*

**on** cy.code **=** countrycode *-- join condition - how to match rows between the tables*

**inner** **join**

countrylanguage cl

**on** cy.code **=** cl.countrycode

;