

NESTED LOOPS pseudo-code *(high-level, simplified perspective)*

NESTED LOOPS

CHILD_ROW_SOURCE_1 \leftarrow driving row source (or “outer” row source) alias: r_1 columns: (c_1, c_2, \dots, c_n)
CHILD_ROW_SOURCE_2 \leftarrow inner row source (or “probe” row source) alias: r_2 columns: (c_1, c_2, \dots, c_m)

with join conditions defined on columns $(c_{h_1}, c_{h_2}, \dots, c_{h_p})$ of r_1 , and $(c_{j_1}, c_{j_2}, \dots, c_{j_q})$ of r_2

Start CHILD_ROW_SOURCE_1

For each row $r_1 = (c_1, c_2, \dots, c_n)$ from CHILD_ROW_SOURCE_1 **Loop** -- outer loop

Start CHILD_ROW_SOURCE_2, given $(r_1.c_{h_1}, r_1.c_{h_2}, \dots, r_1.c_{h_p})$

/*
CHILD_ROW_SOURCE_2 uses the values of columns from the
current row r_1 in join access/filter conditions in order
to find all rows r_2 matching r_1
*/

For each row $r_2 = (c_1, c_2, \dots, c_m)$ from CHILD_ROW_SOURCE_2 **Loop** -- inner loop

/*
Rows from CHILD_ROW_SOURCE_2 are joined to the
current row from CHILD_ROW_SOURCE_1
*/

Yield the combined row $r_j = (r_1.c_1, \dots, r_1.c_n, r_2.c_1, \dots, r_2.c_m)$ to the parent operation (*)

End Loop

End loop

(*) Actually, only projected columns
are passed to the parent operation

Key points:

- CHILD_ROW_SOURCE_1 is started once per start of its parent
- CHILD_ROW_SOURCE_2 is started as many times as CHILD_ROW_SOURCE_1 supplies a row to be joined with
- CHILD_ROW_SOURCE_2 uses join columns from the “outer row” as input
- Join access/filter conditions are processed by CHILD_ROW_SOURCE_2