



WIKIPEDIA
The Free Encyclopedia

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store

Interaction

Help
About Wikipedia
Community portal
Recent changes
Contact page

Tools


What links here
Related changes
Upload file
Special pages
Permanent link
Page information
Wikidata item
Cite this page

Print/export

Create a book
Download as PDF
Printable version

Languages

Italiano
Русский

 Edit links

Create account Log in

Article [Talk](#)

[Read](#) [Edit](#)

[More](#) ▾

Nested loop join

From Wikipedia, the free encyclopedia



This article **does not cite any references or sources**. Please help [improve this article](#) by adding citations to reliable sources. Unsourced material may be challenged and [removed](#). *(January 2010)*



This article **needs attention from an expert in mathematics**. Please add a *reason* or a *talk* parameter to this template to explain the issue with the article. [WikiProject Mathematics](#) (or its [Portal](#)) may be able to help recruit an expert. *(March 2011)*

A **nested loop join** is a naive [algorithm](#) that joins two sets by using two nested [loops](#). Join operations are important to [database](#) management.

Algorithm [\[edit\]](#)

Two relations *R* and *S* are joined as follows:

```
For each tuple r in R do
  For each tuple s in S do
    If r and s satisfy the join condition
      Then output the tuple <r,s>
```

This algorithm will involve $n_r \cdot b_s + b_r$ block transfers and $n_r + b_r$ seeks, where b_r and b_s are number of blocks in relations *R* and *S* respectively, and n_r is the number of tuples in relation *R*.

The algorithm runs in $O(|R||S|)$ I/Os, where $|R|$ and $|S|$ is the number of tuples contained in *R* and *S* respectively. Can easily be generalized to join any number of relations.

The [block nested loop](#) join algorithm is a generalization of the simple nested loops algorithm that takes advantage of additional [memory](#) to reduce the number of times that the *S* relation is scanned.

Improved version [\[edit\]](#)

The algorithm can be improved without requesting additional memory blocks to involve only $b_r \cdot b_s + b_r$ block transfers. For each read block from *R*, the relation *S* can be read only once.

```
For each block block_r in R do
  For each tuple s in S do
    For each tuple r in block_r do
      If r and s satisfy the join condition
        Then output the tuple <r,s>
```

Variable block_r is stored in memory, thus it is not needed to read it from disk for each tuple *s*.



This [computer science](#) article is a *stub*. You can help Wikipedia by [expanding it](#).

Categories: [Join algorithms](#) | [Computer science stubs](#)

This page was last modified on 2 March 2015, at 11:02.

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. By using this site, you agree to the [Terms of Use](#) and [Privacy Policy](#). Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.

[Privacy policy](#) [About Wikipedia](#) [Disclaimers](#) [Contact Wikipedia](#) [Developers](#) [Mobile view](#)

