An algorithm is the name given to a way of solving a problem.

One of the most convenient methods of checking the correctness of an algorithm or a section of code is to use a trace table. This may be incorporated into the debugging portion of a compiler or it may be performed manually.

In the manual version, all of the variables are displayed as column headings in a table. As you work through the algorithm (line by line) you will display any changes to the variables in the table.

A simple example to get started.

**number = 1**

**x = 0**

**y = 0**

**REPEAT**

**x = number \* number**

**IF x = 16 THEN y = 5**

**number = number + 1**

**UNTIL number = 5**

There are three variables; **number**, **x** and **y**, so these will be a part of our column headings.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Line No.** | **number** | **x** | **y** | **Output** |
|  | 1 | 0 | 0 |  |
|  |  | 1 | 0 |  |
|  | 2 | 4 | 0 |  |
|  | 3 | 9 | 0 |  |
|  | 4 | 16 | 5 |  |
|  | 5 |  |  |  |