

Description

`while` executes *stmt* or *stmts* zero or more times. The loop continues as long as *exp* is not equal to zero.

Syntax

```
while (exp) stmt
```

```
while (exp) {  
    stmts  
}
```

where *exp* must evaluate to a real scalar.

Remarks and examples

To understand `while`, enter the following program

```
function example(n)  
{  
    i = 1  
    while (i<=n) {  
        printf("i=%g\n", i)  
        i++  
    }  
    printf("done\n")  
}
```

and run `example(3)`, `example(2)`, `example(1)`, `example(0)`, and `example(-1)`.

One common use of `while` is to loop until convergence:

```
while (mreldif(a, lasta)>1e-10) {  
    lasta = a  
    a = ...  
}
```

Also see

[M-2] **break** — Break out of for, while, or do loop

[M-2] **continue** — Continue with next iteration of for, while, or do loop

[M-2] **do** — do ... while (exp)

[M-2] **for** — for (exp1; exp2; exp3) stmt

[M-2] **Semicolons** — Use of semicolons

[M-2] **Intro** — Language definition

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