

NAG Toolbox

nag_time_cpu (x05ba)

1 Purpose

nag_time_cpu (x05ba) returns the amount of processor time used since an unspecified previous time.

2 Syntax

```
[result] = nag_time_cpu  
[result] = x05ba
```

3 Description

nag_time_cpu (x05ba) returns the number of seconds of processor time used since some previous time. The previous time is system dependent, but may be, for example, the time the current job or the current program started running.

If the system clock of the host machine is inaccessible for any reason, nag_time_cpu (x05ba) returns the value zero.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

None.

5.2 Optional Input Parameters

None.

5.3 Output Parameters

1: **result**

The result of the function.

6 Error Indicators and Warnings

None.

7 Accuracy

The accuracy of the value returned depends on the accuracy of the system clock on the host machine.

8 Further Comments

Since the value returned by nag_time_cpu (x05ba) is the amount of processor time since some unspecified earlier time, no significance should be placed on the value other than as a marker to be compared with some later figure returned by nag_time_cpu (x05ba). The amount of processor time that

has elapsed between two calls of `nag_time_cpu` (x05ba) can be simply calculated as the earlier value subtracted from the later value.

9 Example

This example makes a call to `nag_time_cpu` (x05ba), performs some computations, makes another call to `nag_time_cpu` (x05ba), and gives the time used by the computations as the difference between the two returned values.

9.1 Program Text

```
function x05ba_example

fprintf('x05ba example results\n\n');

[s1] = x05ba;

% compute approximation to Euler's constant
nterms = 10^7;
h = 0;
for n = nterms:-1:1
    h = h + 1/n;
end
h = h-log(nterms+0.5);

[s2] = x05ba;

ctime = s2 - s1;

fprintf('It took %10.2e seconds\n', ctime);
fprintf(' to compute %8d terms of the harmonic series.\n', nterms);
fprintf('Approximation to Euler constant = %20.13f.\n', h);
```

9.2 Program Results

```
x05ba example results

It took  1.02e-01 seconds
 to compute 10000000 terms of the harmonic series.
Approximation to Euler constant =      0.5772156649016.
```
