

nag_restore_random_state (g05cgc)

1. Purpose

nag_restore_random_state (g05cgc) restores the value of the seed used by the basic generator in the g05 Chapter after a previous call to **nag_save_random_state (g05cfc)**.

2. Specification

```
#include <nag.h>
#include <nagg05.h>
```

```
void nag_restore_random_state(Integer ystate[], double xstate[], NagError *fail)
```

3. Description

This function restores the state of the basic generator, using information saved by a previous call to **nag_save_random_state (g05cfc)**.

4. Parameters

ystate[9]

xstate[4]

Input: information about the generator, which must be unchanged from the previous call of **nag_save_random_state (g05cfc)**.

fail

The NAG error parameter, see the Essential Introduction to the NAG C Library.

5. Error Indications and Warnings

NE_STATE_CORRUPT

ystate or **xstate** has been corrupted since the previous call to **nag_save_random_state (g05cfc)**.

6. Further Comments

None.

7. See Also

nag_random_continuous_uniform (g05cac)

nag_save_random_state (g05cfc)

8. Example

The program prints 10 pseudo-random numbers generated by **nag_random_continuous_uniform (g05cac)**; it saves the generator state after the 2nd, and restores it after the 7th, so that the 8th, 9th and 10th numbers are the same as the 3rd, 4th and 5th.

8.1. Program Text

```
/* nag_restore_random_state(g05cgc) Example Program
 *
 * Copyright 1990 Numerical Algorithms Group.
 *
 * Mark 1, 1990.
 */

#include <nag.h>
#include <stdio.h>
#include <nag_stdlib.h>
#include <nagg05.h>
```

```
main()
{
  Integer seed = 0;
  Integer i, ystate[9];
  double x[5], xstate[4];

  Vprintf("g05cgc Example Program Results\n");
  g05cbc(seed);
  for (i= 0; i<5; ++i)
  {
    x[i] = g05cac();
    if (i == 1)
      g05cfc(ystate, xstate);
  }
  for (i=0; i<5; ++i)
    Vprintf("%9.4f%s", x[i], (i%5==4 || i==4) ? "\n": " ");
  for (i=0; i<5; ++i)
  {
    x[i] = g05cac();
    if (i == 1)
      g05cgc(ystate, xstate, NAGERR_DEFAULT);
  }
  for (i=0; i<5; ++i)
    Vprintf("%9.4f%s", x[i], (i%5==4 || i==4) ? "\n": " ");
  exit(EXIT_SUCCESS);
}
```

8.2. Program Data

None.

8.3. Program Results

```
g05cgc Example Program Results
 0.7951  0.2257  0.3713  0.2250  0.8787
 0.0475  0.1806  0.3713  0.2250  0.8787
```
