lib_random: Random number generation

XMOS

1   Introduction

This library provides both hardware and software random number generation.

Hardware based generation uses an asynchronous oscillator in the *xcore* device.

2   Usage

To use the module you need to use `lib_random` in your application *CMakeLists.txt*, for example:

```
set(APP_DEPENDENT_MODULES "lib_random")
```

An application should then the `random.h` header file:

```
#include "random.h"
```

3   Example

An example demonstrating how to generate random values using the `lib_random` library is provided in *examples/app_random*

It shows the two different methods for initialising a random number generator (software or hardware seed), and then also shows how to generate either a single random value or populate an array with random values.

To build and run the example, run the following from an XTC tools terminal:

```
cd examples/app_random
cmake -G "Unix Makefiles" -B build
```

The application binaries can be built using `xmake`:

```
xmake -C build
```

To run the application using the simulator, run the following command:

```
xsim bin/app_random.xe
```

The random data values will be printed in the terminal.

4 Further Reading

▶ *XMOS* XTC Tools Installation Guide

https://xmos.com/xtc-install-guide

▶ *XMOS* XTC Tools User Guide

https://www.xmos.com/view/Tools-15-Documentation

▶ *XMOS* application build and dependency management system; *xcommon-cmake*

https://www.xmos.com/file/xcommon-cmake-documentation/?version=latest

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