Codemark and Keil microvision

Keil microvision is a useful IDE with source level debugging and breakpoints. Codemark uses the GNU Toolchain’s assembler and runs the program using a bare metal connex board emulated by Qemu.

There are some minor differences that may cause a program to work on one platform but not the other.

The commonest cause of problems is either using an uninitialised register or a conditional branch without first setting the flags. Such programs essentially behave randomly.

Keil syntax uses 2_ to indicate a binary number, Gnu assembler uses 0b, however codemark automatically handles the conversion.
The Gnu assembler treats numbers with leading zeros as octal, Keil syntax ignores leading zeros, so do not use leading zeros in constants.

The connex board simulates 64 MB of RAM from address 0xA0000000 to 0xA4000000. Do not try and access memory outside this range.

If you want to use a stack, you must do so in the available memory, R13/sp is not initialised when codemark runs.