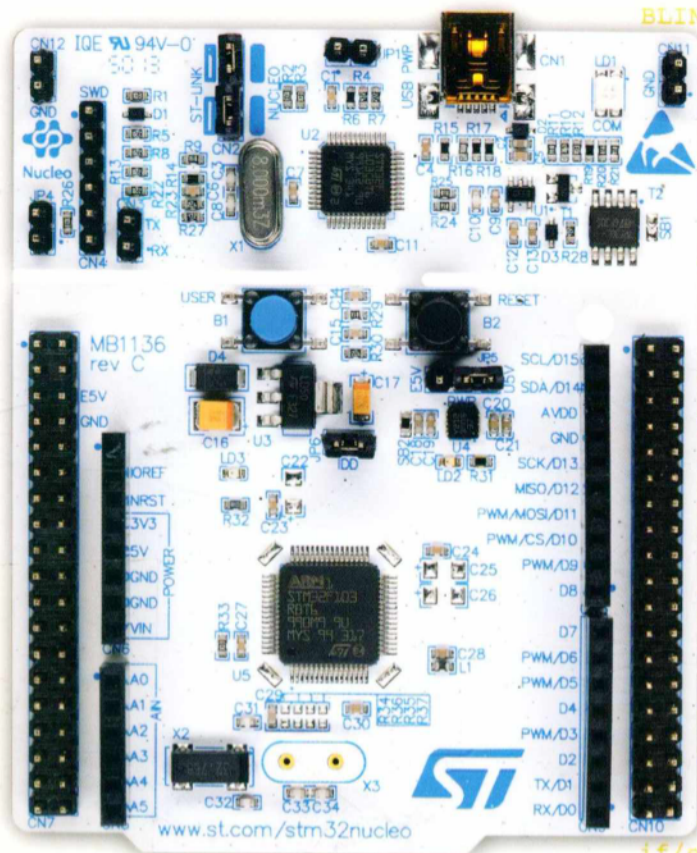


Programming with STM32

Getting Started with the Nucleo Board and C/C++



```
trace_printf("system clock\n");
timer_start();

while(1)
{
    blink_led_init();

    int32_t seconds = 0;

    // Infinite loop
    while (1)
    {
        if(sw){
            blink_led_on();
            timer_sleep(seconds ==
                BLINK_ON_TICKS1);

            blink_led_off();
            timer_sleep(BLINK_OFF_T
                ++seconds;
            sw = false;
        }
        else{
            blink_led_on();
            timer_sleep(seconds ==
                BLINK_ON_TICKS2);

            blink_led_off();
            timer_sleep(BLINK_OFF_T
                ++seconds;
            sw = true;
        } // Closing brace for t
        // if/else statement
    } // Closing brace for t
    // Count seconds on the
    trace_printf("Second %u\n");
} // Closing brace for the m
#pragma GCC diagnostic pop
```



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About the Author



Donald J. Norris has a degree in electrical engineering and an MBA specializing in production management. He is currently an adjunct professor teaching an Embedded Systems course in the College of Engineering, Technology and Aeronautics, part of the Southern New Hampshire University (SNHU). He has also taught many different undergrad and grad courses mainly in the computer science and technology areas at SNHU and other regional schools

for the past 33 years. Don created and taught the initial robotics courses at SNHU both on-campus and online.

Don retired from civilian government service with the U.S. Navy, where he specialized in underwater acoustics related to nuclear submarines and associated advanced digital signal processing systems. Since then, he has spent more than 23 years as a professional software developer using the C, C#, C++, Python, Micro Python, Node.JS, JavaScript, PHP, and Java languages in varied development projects. He also has been a certified IT security consultant for the last six years.

He has written and had published seven books including three involving the Raspberry Pi, one on how to build and fly your own drone, a book on the Intel Edison, one on the Internet of Things, and one on Micro Python.

Don started a consultancy, Norris Embedded Software Solutions (dba NESS LLC), which specializes in developing application solutions using microcontrollers, sensors, and actuators. The business has also recently completed several robotics projects for clients.

Don likes to think of himself as a perpetual hobbyist and geek and is constantly trying out new technologies and out-of-box experiments. He is a licensed private pilot, photography buff, amateur extra class operator, avid runner, and most importantly, a proud grandfather of three great kids, Evangeline, Hudson, and Holton.

This book is dedicated to Dr. Peter Kachavos, my son-in-law, who is a remarkably intelligent man with an equally remarkable long medical career in service to his patients and the community. Until recently, Peter was a practicing internist with an office in Manchester, NH. He recently retired after 25 years from that practice and soon will be pursuing other interesting opportunities in the medical field.

Peter enjoys cooking, fine wine, traveling, and spending quality time with his family. His wife is my daughter, Shauna, and their child is my two-year-old granddaughter, Evangeline.

Peter and I have spent many hours discussing many topics ranging from ancient Greek artifacts to the latest technologies impacting modern society. I always look forward to those interesting and challenging discussions.

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