

Porting NanoVM to the ZNEO

Real-Time Embedded Systems
George Washington University

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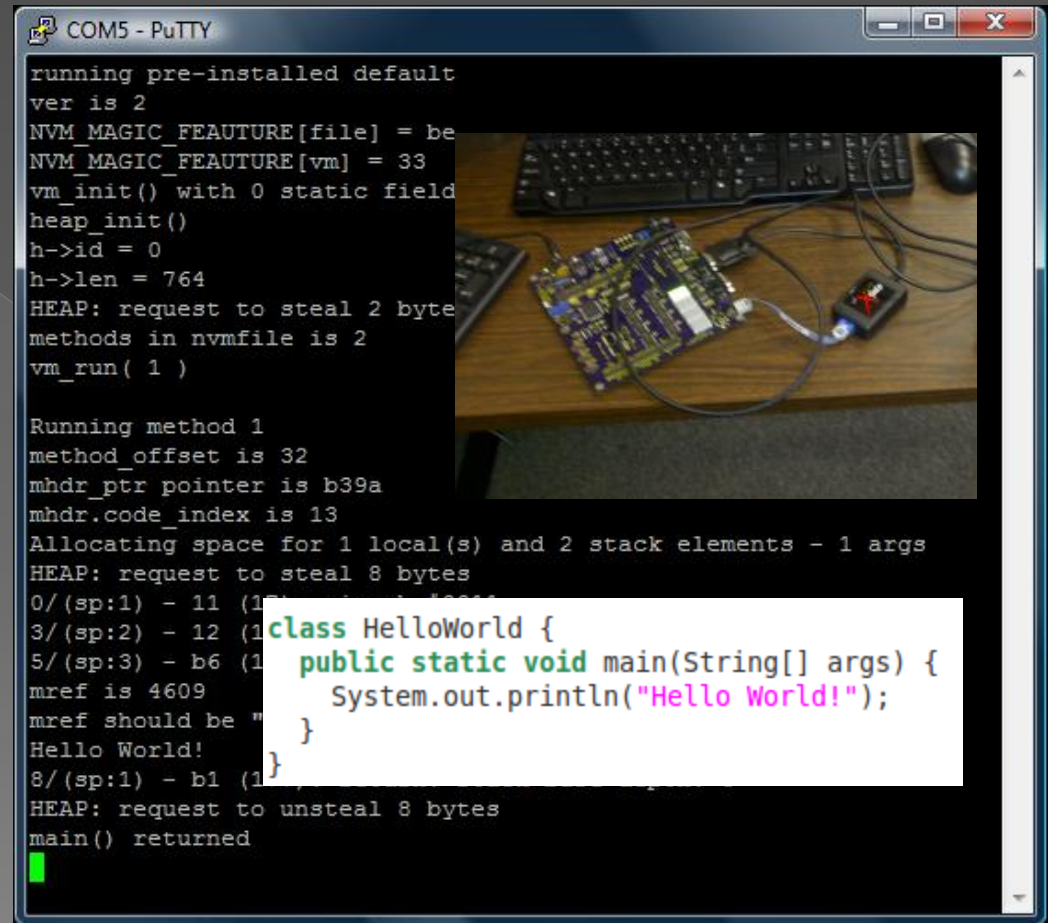
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**Want to program your ZNEO in Java instead of C?
Miss Linux? Then this is the project for you!**

For my final project, I chose to port NanoVM to the ZNEO. NanoVM is an open-source, stripped-down Java Virtual Machine (JVM) written by Dr. Till Harbaum for the Atmel AVR ATmega8 CPU, which is used in the DLR Asuro robot. With NanoVM the Asuro robot can be programmed in Java (instead of C). By porting NanoVM to your ZNEO, you can program it in Java, too!

Lessons Learned

- ◉ JVM
- ◉ The Debugger
- ◉ Stepping through code
- ◉ Endian issues
- ◉ Dealing with little documentation



```
COM5 - PuTTY
running pre-installed default
ver is 2
NVM_MAGIC_FEATURE[file] = be
NVM_MAGIC_FEATURE[vm] = 33
vm_init() with 0 static field
heap_init()
h->id = 0
h->len = 764
HEAP: request to steal 2 byte
methods in nvmfile is 2
vm_run( 1 )

Running method 1
method_offset is 32
mhdr_ptr pointer is b39a
mhdr.code_index is 13
Allocating space for 1 local(s) and 2 stack elements - 1 args
HEAP: request to steal 8 bytes
0/(sp:1) - 11 (1)
3/(sp:2) - 12 (1)
5/(sp:3) - b6 (1)
mref is 4609
mref should be "
Hello World!
8/(sp:1) - b1 (1)
HEAP: request to unsteal 8 bytes
main() returned
```

```
class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello World!");
    }
}
```