Nim on everything

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What is Nim?

- Compiled
- Statically typed
- Garbage collected
- Speed of C,
  ease of Python,
  flexibility of Perl

```
# Compute average line length
# From nim-lang.org
var
  sum = 0
  count = 0

for line in stdin.lines:
  sum += line.len
  count += 1

echo("Average line length: ",
     if count > 0: sum / count else: 0)
```

Nims killer feature - Macros

```
template withLock(lock: Lock, body: untyped) =
  acquire lock
  try:
    body
  finally:
    release lock

var ourLock: Lock
initLock ourLock

withLock ourLock:
  echo "Do something that requires locking"
  echo "This might throw an exception"
```

Nims killer feature - Macros

```
import macros, strutils

macro toLookupTable(data: static[string]): untyped =
  result = newTree(nnkBracket)
  for w in data.split(';'):
    result.add newLit(w)

const
  data = "mov;btc;cli;xor"
  opcodes = toLookupTable(data)

for o in opcodes:
  echo o
```

Compilation targets

- Compiles to other languages C/C++/JS
- Can target any platform
- Can use native libraries
- Standing on the shoulders of giants
- Creates fast code, not human code
- Why not LLVM/WebAssembly?

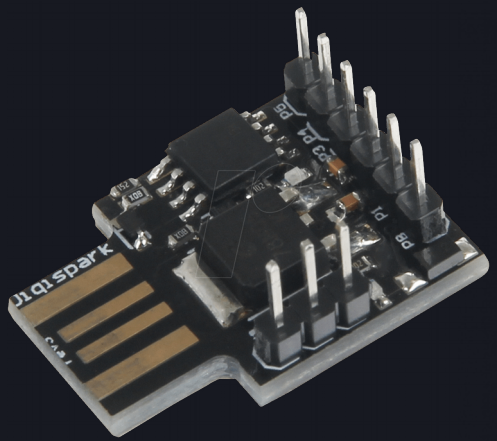
Javascript vs. C/C++

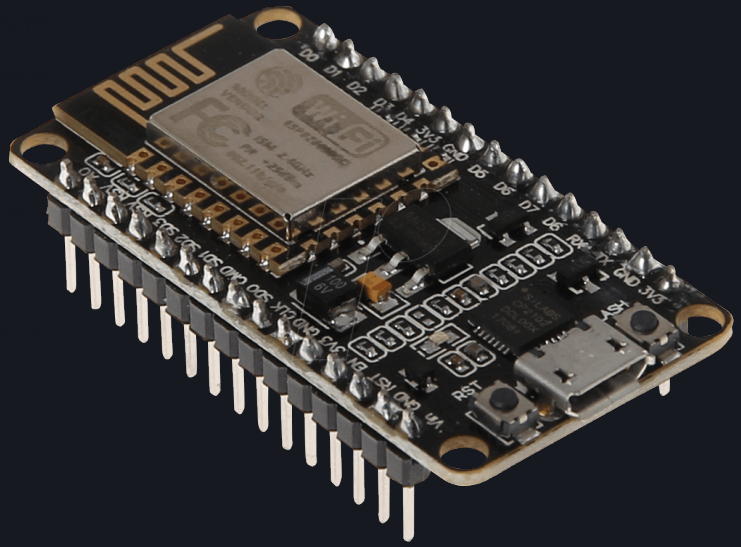
- No lowest common denominator
- Builds on a common syntax and capabilities
- Not all code can run on all targets

```
let sockPointer = case sock_addr.ss_family:
  of AF_INET.TSa_Family:
    cast[pointer](cast[int](sock_addr.addr)
      + offsetOf(Sockaddr_in, sin_addr))
  of AF_INET6.TSa_Family:
    cast[pointer](cast[int](sock_addr.addr)
      + offsetOf(Sockaddr_in6, sin6_addr))
  else:
    cast[pointer](cast[int](sock_addr.addr)
      + sizeof(TSa_Family))
  if inet_ntop(sock_addr.ss_family.cint,
    sockPointer, result[0].addr, size) == nil:
    result = ""
  result.setLen(result.find('\0'))
```

```
proc onLoad(event: Event) =
  let p = document.createElement("p")
  p.innerHTML = "Click me!"
  p.style.fontFamily = "Helvetica"
  p.style.color = "red"

  p.addEventListener("click",
    proc (event: Event) =
      window.alert("Hello World!")
  )

  document.body.appendChild(p)

window.onload = onLoad
```

Nim on the smallest

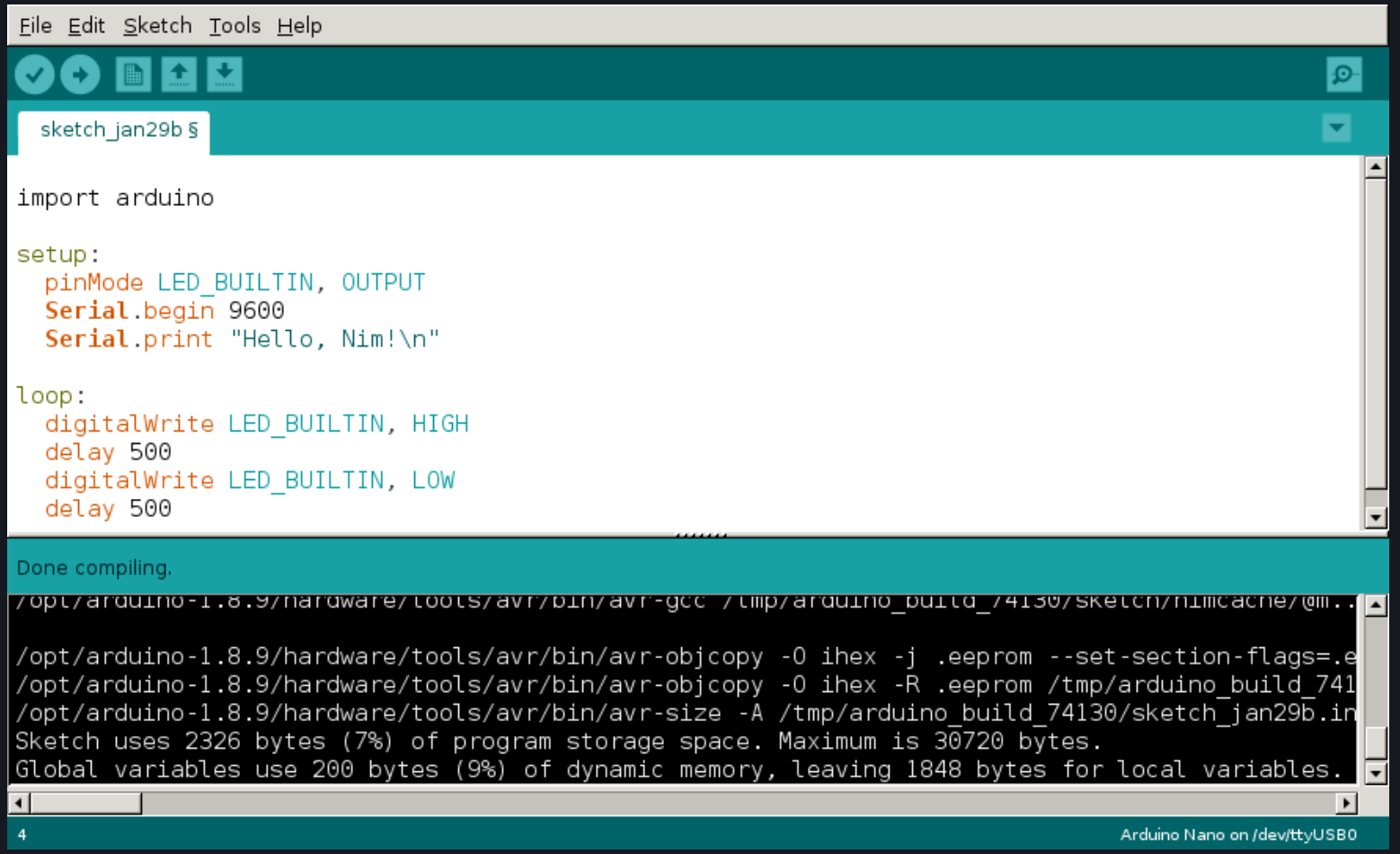




Nim on the smallest

```
loadSprite(logo, "arduboy_logo_border.bmp", addSize = false)
loadSprite(logoMask, "arduboy_logo_border_mask.bmp", addSize = false)

proc setup*() {.exportc.} =
  NimMain()
  drawBitmap(20, 10, logo, logoMask, 90, 18, 55, 18 div 2, SpriteMasked)
  boot()
  display()

proc loop*() {.exportc.} =
  display()
  let buttons = buttonsState()
  RedLed.off()
  GreenLed.off()
  if buttons.pressed(AButton):
    RedLed.on()
  if buttons.pressed(BButton):
    GreenLed.on()
```

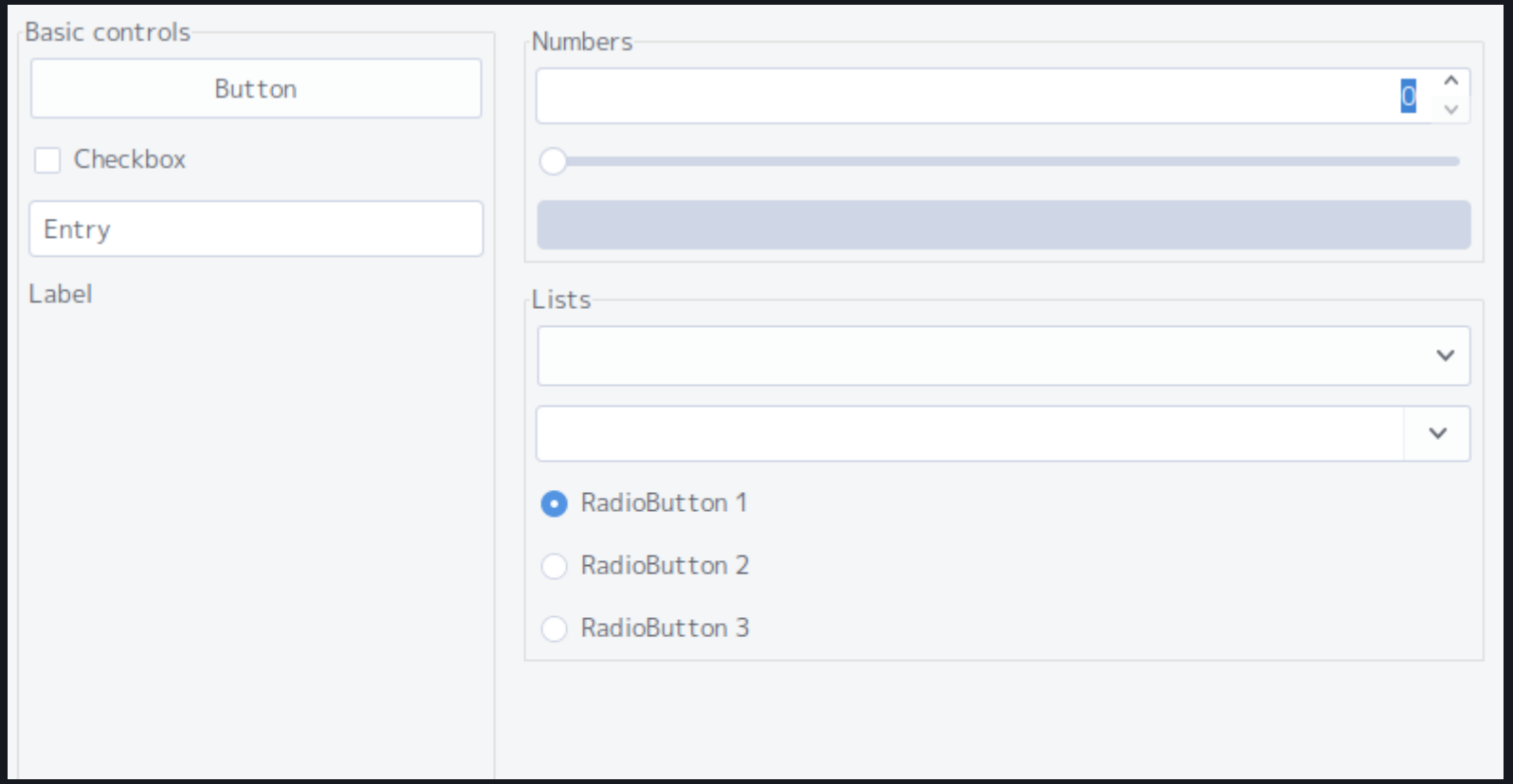
Nim on the smallest



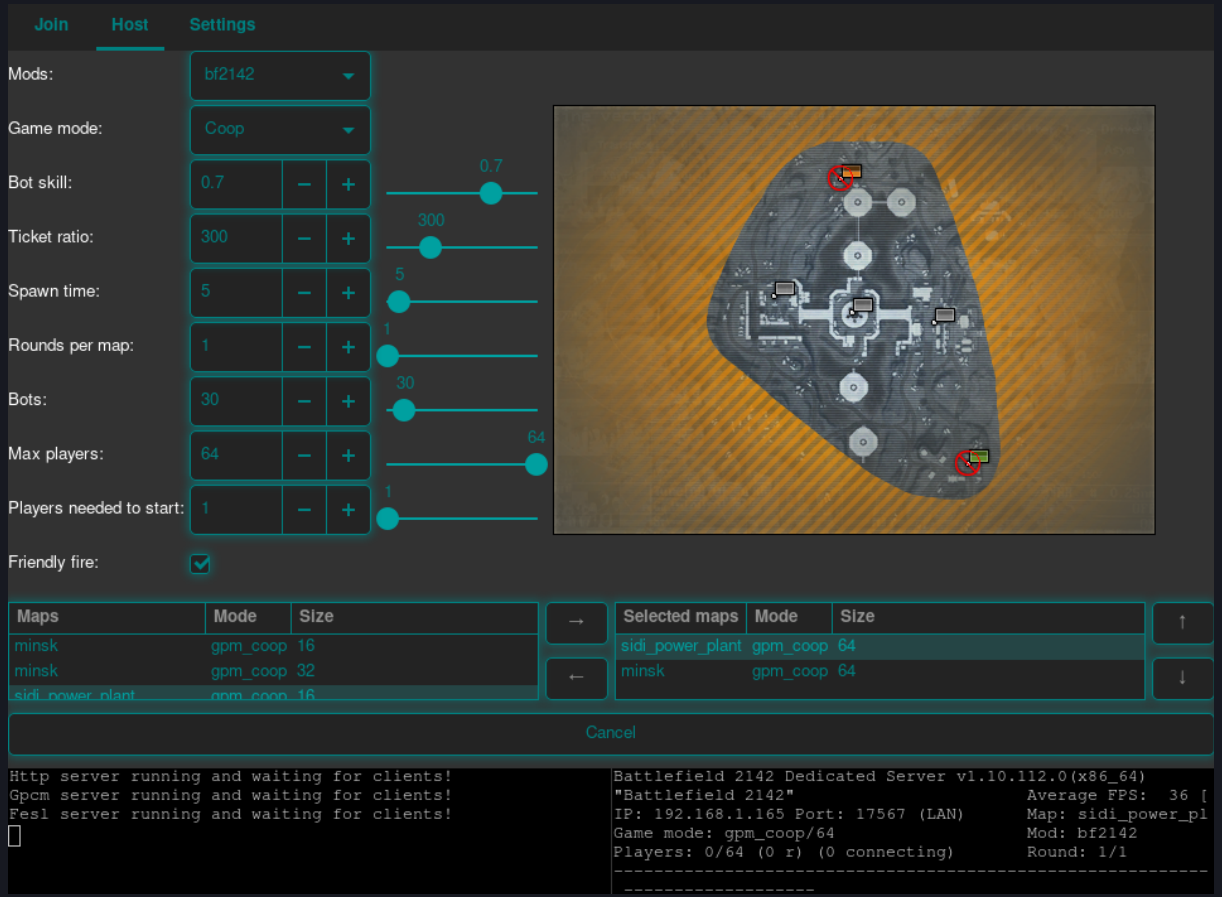
Nim on the server/desktop

- Can again use all libraries
- Runs super fast
- Forum, playground, and games servers
- Many terminal tools, some GUI apps
- Games

Nim on the server/desktop



Nim on the server/desktop



Nim on the web

- Compilation with JS
- Has JS specific modules
- Can use JS libraries
- Uses the JS garbage collector

Nim on the web

Nim on the web

+ New Thread

Topic	Users	Replies	Views	Activity
Hot code reloading		0	48	10h
Help: Zip (Creating / Opening)		1	108	11h
Introducing Norm: a Nim ORM		35	2.9k	15h
Equivalent of VBA With <x> structure		5	131	15h
Jester: How to serve static files in production (Heroku)?		4	239	17h
Unicode support for Windows 10 console		0	86	20h
Nim calling Lemon parser and SIGSEGV		5	425	22h
how to use Nimpretty ??		4	308	1d
Dash docsets now available		9	926	1d

Nim on everything

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