
Introduction to Nim

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¹ General Programming Language

May 16, 2019

Nim is unique. It is multi-paradigm, general purpose programming language with syntax like Python. However, the language or the design of this programming language does not emphasize on Object Oriented Programming style/concept. The language follows its own programming styling, it is imperative that its syntax styling is kept as guided by Nim's reference manual. Nim focuses mainly on efficiency, expressiveness, and elegance. Nim is much like any other programming language with features such as concurrency, parallelism, user-defined types, the standard library, and more. Nim also has Nim's specific features such as asynchronous input/output, metaprogramming, and the foreign function interface.

1 What is Nim?



Impatience is my vice, I want to know I have the right tools for the job before I commit. So what does this mean?

How to install Nim

```
$bash: brew install nim
```

```
==> Pouring nim-0.19.4.mojave.bottle.tar.gz
/usr/local/Cellar/nim/0.19.4: 411 files, 12.8MB
```

Simple Script

Create file hello_world.nim

```
#simple comment line
echo "Hello world!"
```

Compile Script

Compile hello_world.nim

```
$bash: nim compile --run hello_world.nim
Hint: used config file
      '/usr/local/Cellar/nim/0.19.4/nim/config/nim.cfg'
      [Conf]
Hint: system [Processing]
Hint: hello_world [Processing]
CC: hello_world
CC: stdlib_system
Hint: [Link]
Hint: operation successful (12382 lines
      compiled; 0.660 sec total; 16.383MiB
      peakmem; Debug Build) [SuccessX]
Hint:
      /Volumes/pulse/100/Nim/ch01/code/hello_world
      [Exec]
Hello world!
```

Terminal output results

At this stage I try to understand what the terminal is showing and if I cannot make sense of it, I at least try to find out if my output results is as expected.

```
Hint: used config file
      '/usr/local/Cellar/nim/0.19.4/nim/config/nim.cfg'
      [Conf]
Hint: system [Processing]
Hint: hello_world [Processing]
CC: hello_world <--- looks like Nim is using
      clang
CC: stdlib_system <--- looks like Nim is using
      clang
```

```
Hint: [Link]
Hint: operation successful (12382 lines
      compiled; 0.660 sec total; 16.383MiB
      peakmem; Debug Build) [SuccessX] <---
      processed Nim packages
Hint:
      /Volumes/pulse/100/Nim/ch01/code/hello_world
      [Exec] <--- script location
Hello world! <--- Expected output
```

What is in the file/script

In the code repo Nim has created some sort of an object file `hello_world` (machine code) that Nim (JVM `if` it is running on it) uses to compile and read the script. Languages such as Java, C, C++ uses such approach (compiled languages). Python does not `do` such (interpreted language).

```
$bash: tree -L 1
      hello_world
      hello_world.nim
```

```
0 directories, 2 files
```

1.1 Beginning to learn Nim

Nim is still a relatively new programming language (first scribbled books — Nim in Action, Dominik Picheta).

What should you know going in:

- The language is not fully complete
- Nim is a general-purpose programming language
- efficiency, expressiveness and elegance are Nim's standardised priority markers and they rank according to the order mentioned
- Nim shares many of Python's characteristics
- Nim is a compiled language (translated to C first)
- Nim is well suited for systems programming (hardware, OSs, IoT, etc)
- type system, execution model
- Applications that perform I/O operations, such as reading files or sending data over a network, are also well supported by Nim.
- Performs well when dealing with foreign-interfacing (C/C++)
- Web applications (web frameworks like Jester)
- Nim can compile JavaScript
- [Nim's documentation](#)

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dum vel. Curabitur vehicula convallis felis, eget mattis justo rhoncus eget. Pellentesque et semper lectus.

First This is the first item

Last This is the last item

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1.2 Subsection

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1. First numbered item in a list
2. Second numbered item in a list
3. Third numbered item in a list

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Table 1: Example table

Name		
First Name	Last Name	Grade
John	Doe	7.5
Richard	Miles	5



Figure 1: A majestic grizzly bear

2 Section

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