
Native Ruby Extensions

<https://github.com/KarlParkinson/yegrb-native-extensions>

How Does Ruby Work?

- What is a programming language?
 - Syntax, semantics, types, etc
 - Way to instruct a computer to perform a task
 - How are programs executed?
 - As instructions executed by a CPU
 - CPU cannot read ruby
 - Ruby must become CPU executable machine code
 - Compiled vs interpreted
 - Generate machine code up front vs on the fly
 - C and Java are compile, Ruby is interpreted
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How Does Ruby Execute?

- Separate program which parses and executes ruby code
 - MRI - C
 - YARV - <https://github.com/ruby/ruby>
 - JRuby - Java implementation of Ruby for JVM
 - Ruby executed via virtual machine
 - Interpreter defines virtual machine
 - CPU executes VM which executes Ruby
 - Portability
 - Convert Ruby code into C code
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What is a Native Extension?

- Skip interpretation step
 - Write C code which is directly executed by VM via exposed api
 - Performance benefits
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Coding Example

- Define a module
 - Define class within module
 - Define methods within class
 - Performance comparison
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