UNIVERSIDADE da MADEIRA

CTeSP CURSOS TÉCNICOS SUPERIORES PROFISSIONAIS

Tecnologias e Programação de Sistemas de Informação

Introdução

Desenvolvimento Web - Back-End | David Jardim

Cofinanciado por:

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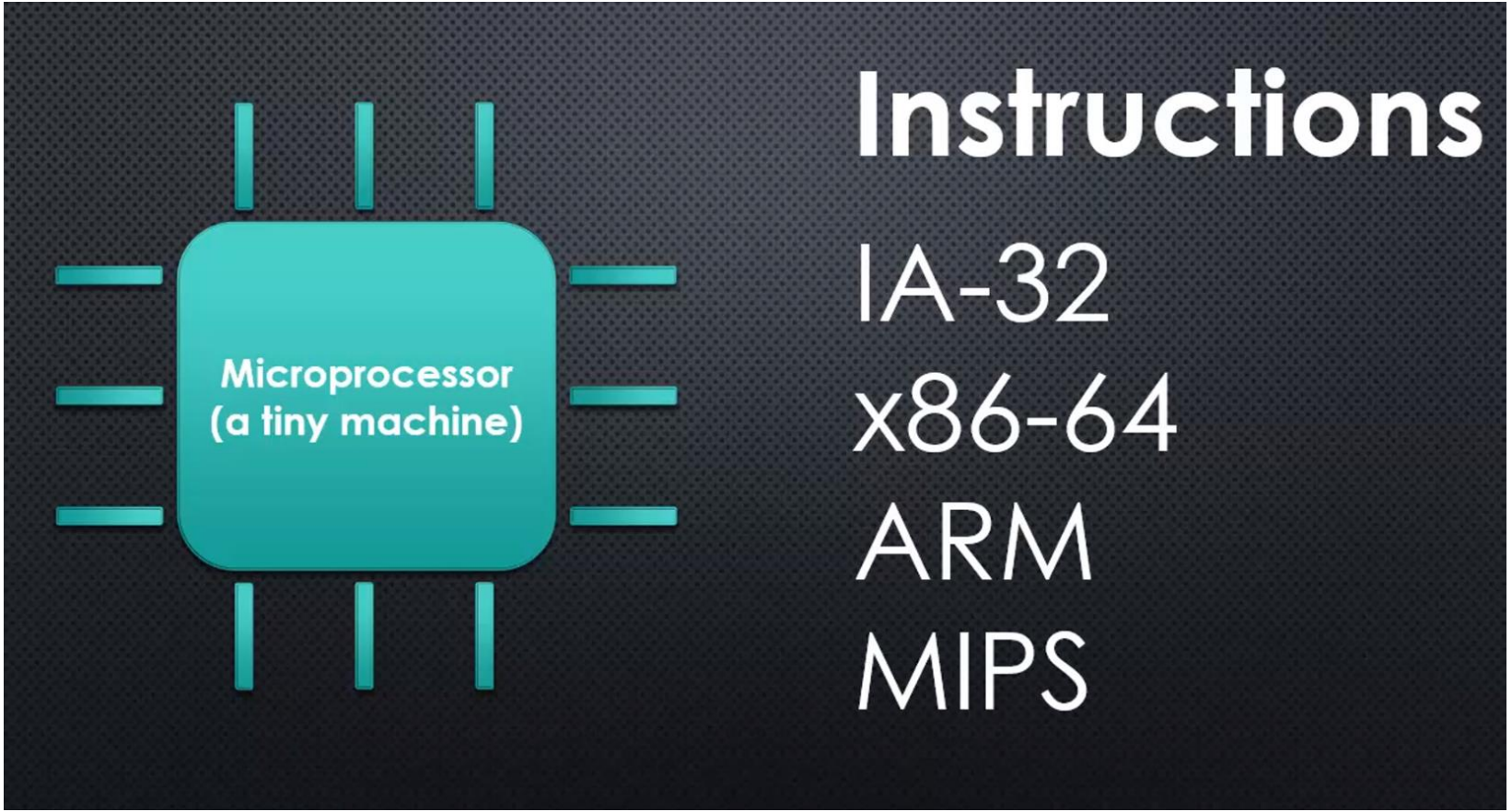
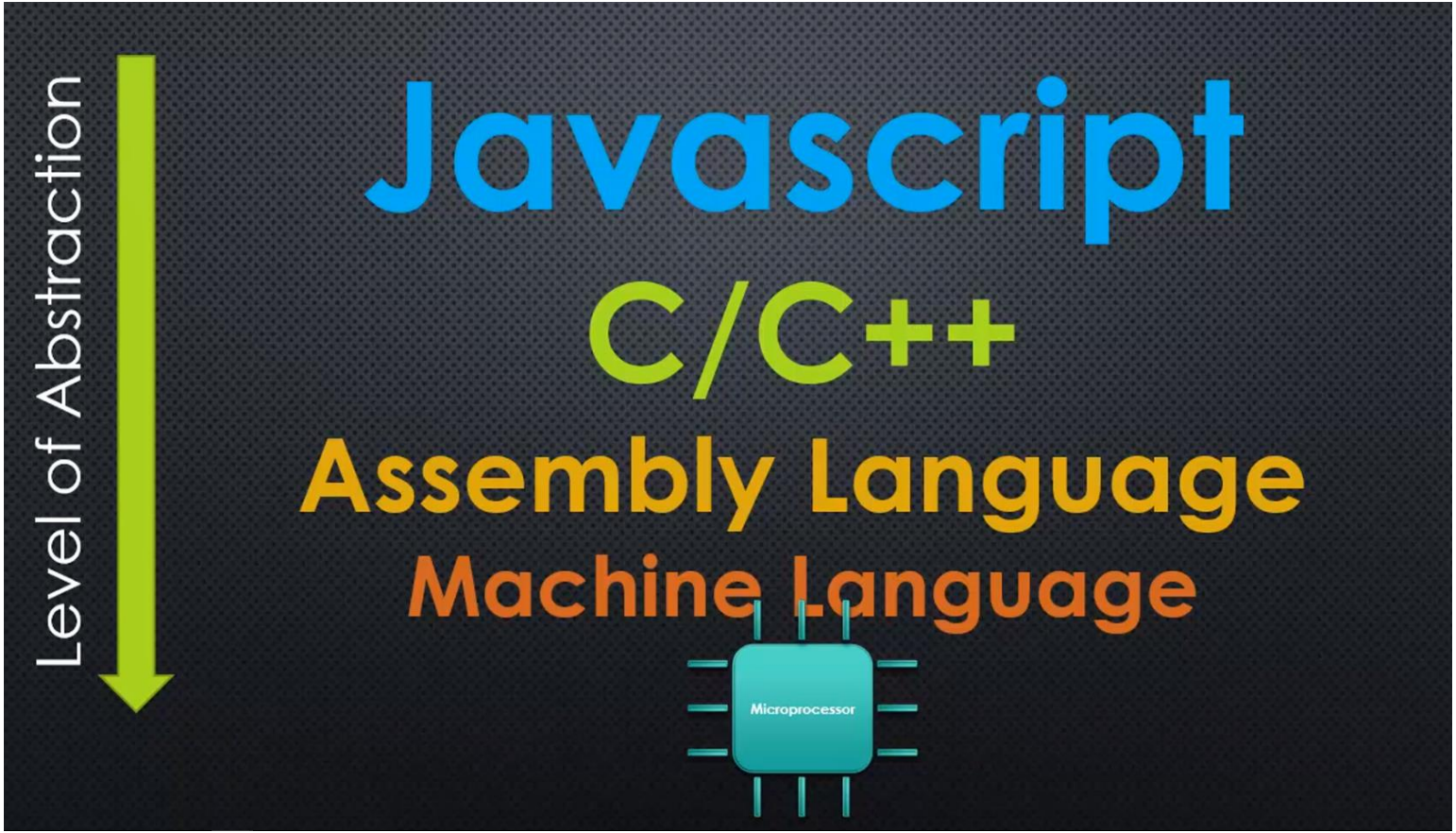
Fundo Social Europeu


Microprocessor
(a tiny machine)
Instructions
IA-32
x86-64
ARM
MIPS

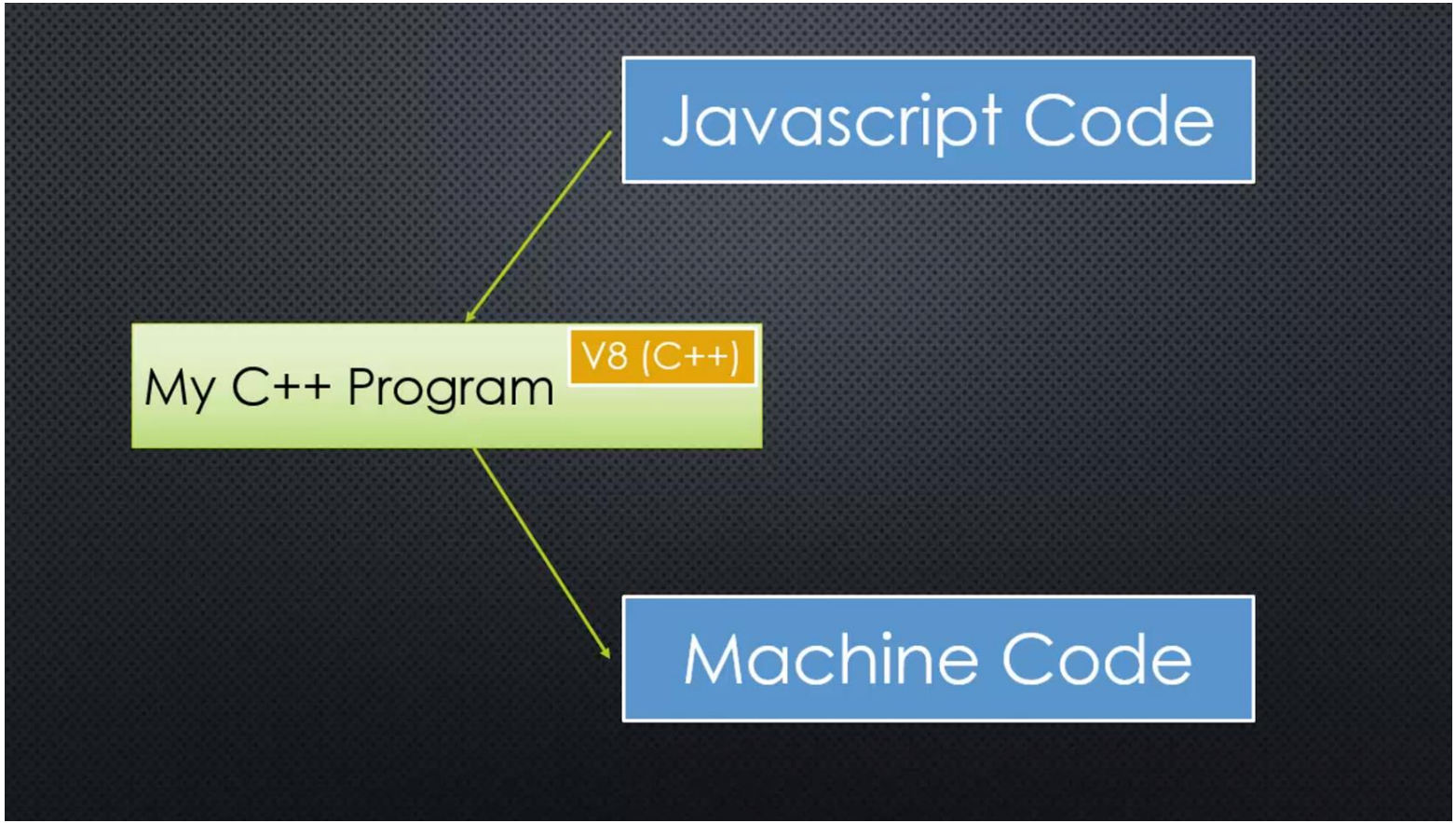
```
000018A45438100      0  55                push rbp
0000018A45438101     1  4889e5            REX.W movq rbp,rsp
0000018A45438104     4  56                push rsi
0000018A45438105     5  57                push rdi
0000018A45438106     6  41ff75a8          push [r13-0x58]
0000018A4543810A    10  56                push rsi
0000018A4543810B    11  49baf9552c7e8f010000 REX.W movq r10,
0000018F7E2C55F9    ;;  object: 0000018F7E2C55F9
0000018A45438115    21  4152              push r10
0000018A45438117    23  6a00              push 0x0
0000018A45438119    25  b803000000        movl rax,000000000000
```


Level of Abstraction
Javascript
C/C++
Assembly Language
Machine Language
Microprocessor

“Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient. Node.js' package ecosystem, npm, is the largest ecosystem of open source libraries in the world.”

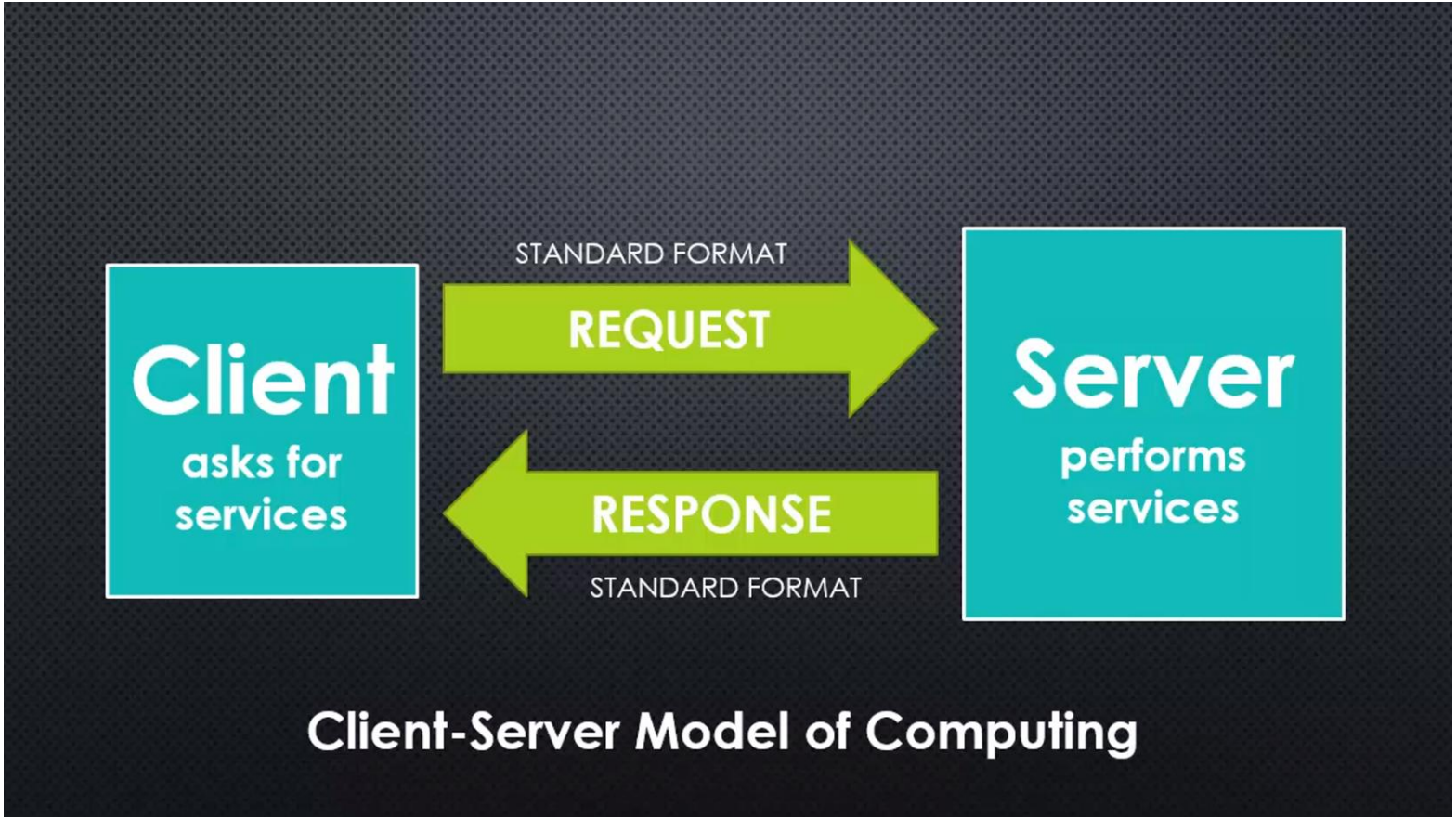
Qual a linguagem de programação na qual o Node foi desenvolvido? E porquê?

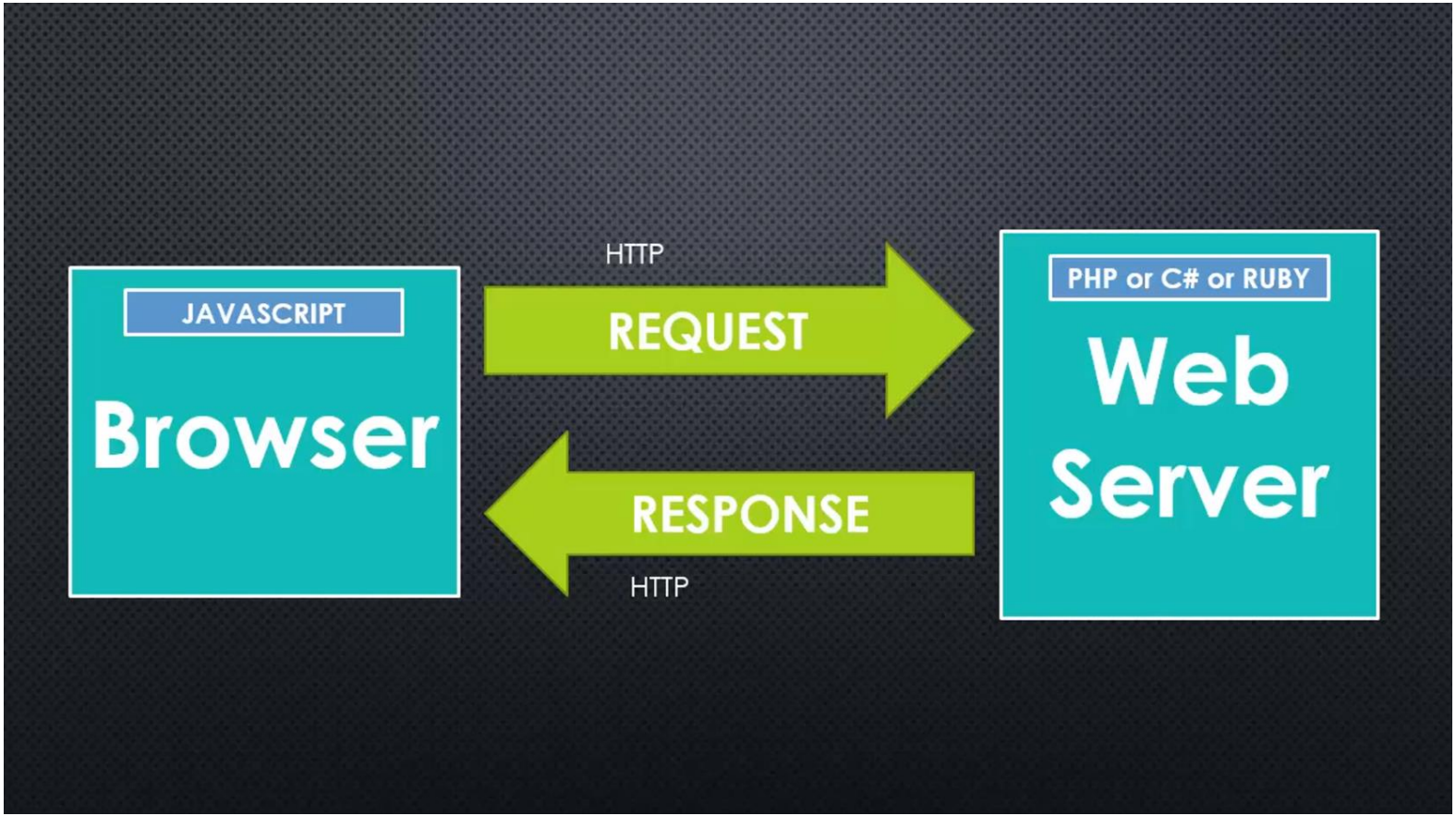
“V8 is Google’s open source high-performance JavaScript engine, **written in C++.** It is used in Google Chrome, the open source browser from Google, and in Node.js, among others. It implements **ECMAScript** as specified in ECMA-262, and runs on Windows 7 or later, macOS 10.12+, and Linux systems that use IA-32, ARM, or MIPS processors. V8 can run standalone, or can be embedded into any C++ application.”

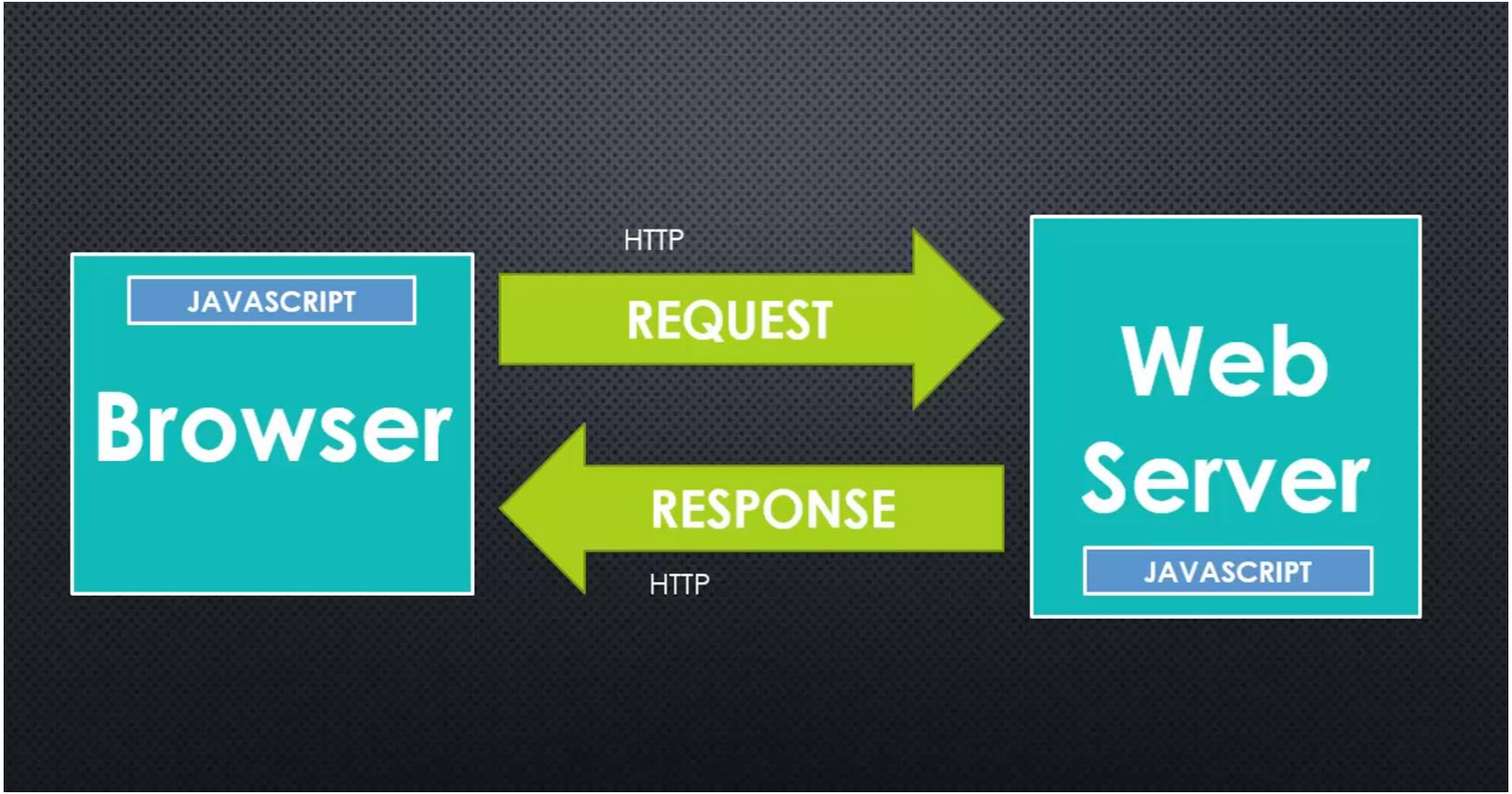

Javascript Code
My C++ Program
V8 (C++)
Machine Code

FRONT-END


BACK-END


STANDARD FORMAT
REQUEST
Client
asks for services
Server
performs services
RESPONSE
STANDARD FORMAT
Client-Server Model of Computing


JAVASCRIPT
Browser
HTTP
REQUEST
RESPONSE
HTTP
PHP or C# or RUBY
Web Server


JAVASCRIPT
Browser
HTTP
REQUEST
RESPONSE
HTTP
Web
Server
JAVASCRIPT

O JS base não suporta as seguintes operações, o Node.js veio facilitar as seguintes funcionalidades:

- Organizar o código de forma modular/pacotes
- Melhores formas de lidar com ficheiros
- Melhores formas de lidar com bases de dados
- A capacidade de comunicar na Internet
- A capacidade de aceitar pedidos e enviar respostas

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