SwiftCon China 2016

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How To Parse Float Number

The Different Way

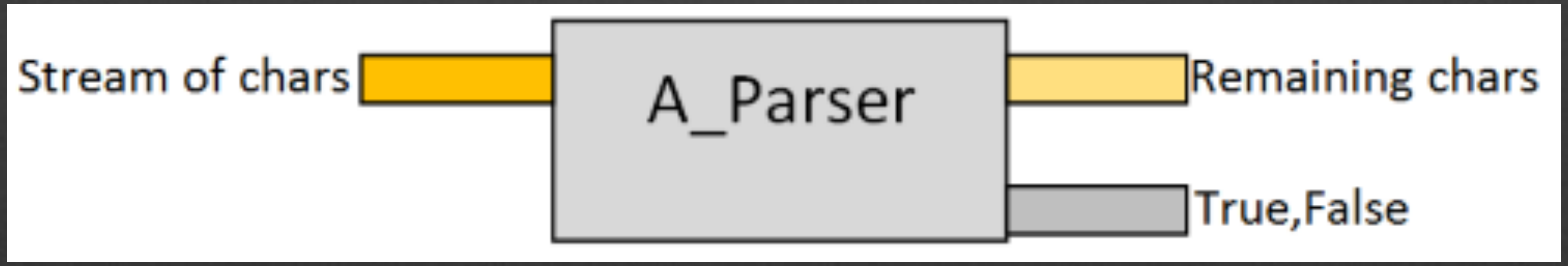
The Easy

傅若愚 @ThoughtWorks

Before All

- Let’s forget about Functor?
- Let’s forget about Monad?
- Let’s forget about Applicative?

Let’s Parse!



First Implementation

- Parsing a hard-coded character

Show me the code

Second Implementation

- Parsing a hard-coded character
- Parsing a specified character

Show me the code

Second Implementation

- Parsing a hard-coded character
- Parsing a specified character
- Wait…… You mean…… map?

Is Parser a Functor?

Combining parsers!!!!

- the “or” operator
- the “one of” operator
- Now we can build a “digits” parser

Show me the code

What did we do?

- We start our process in primitive small steps
- Then we Combine!

What’s Next?

- The “And Then” operator
- The “many” operator
- Oh, wait！！！

The Monad???

Introducing the MSH
Command Shell and Language
Monad
YES
O'REILLY
Andy Oakley
Foreword by Jeffrey Snover

Now, What’s Next?

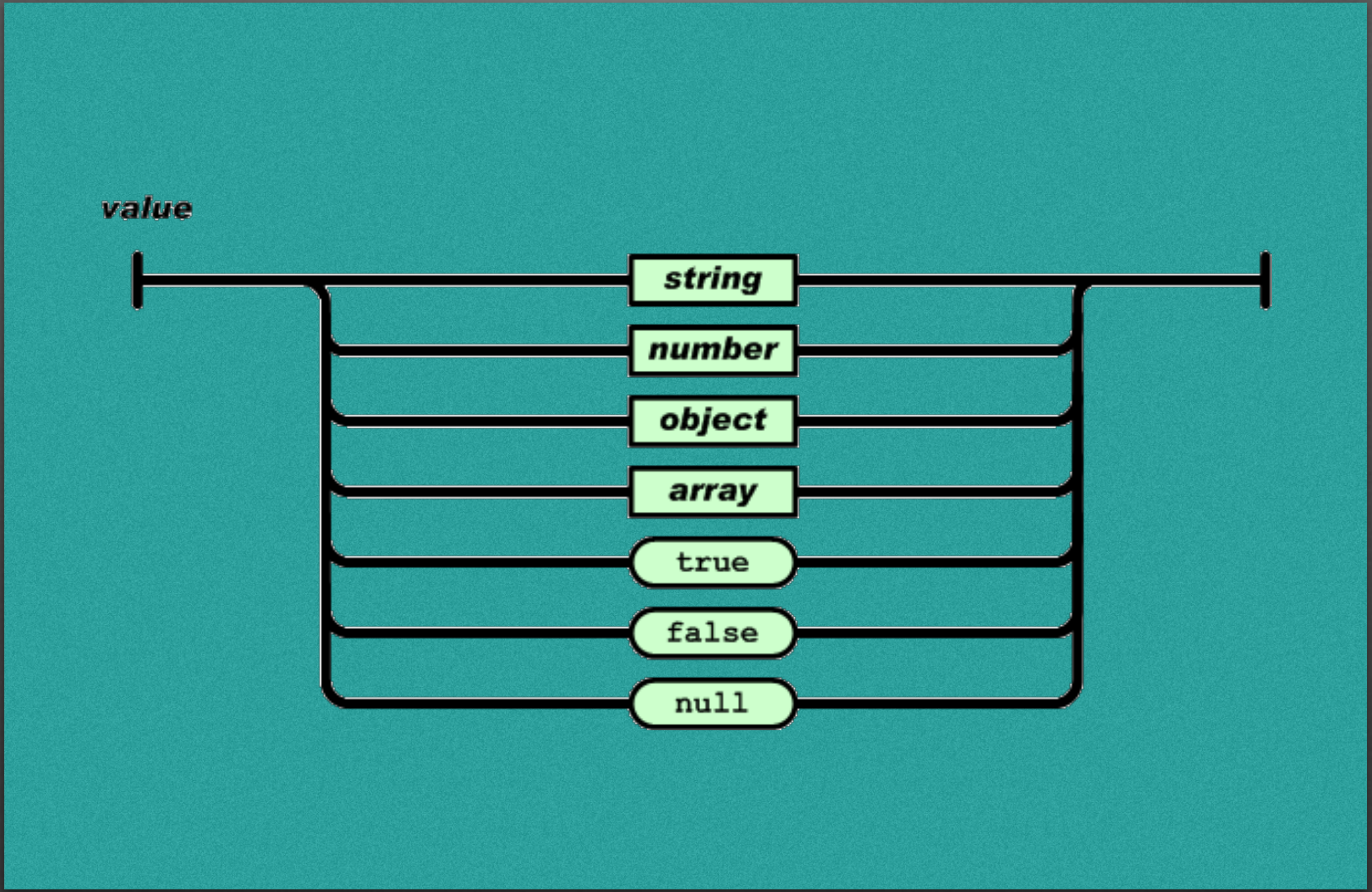
- The “A Followed by B and combine them with……” operator
- Seems complicated……But, What if we consider a Applicative?

Finished Code

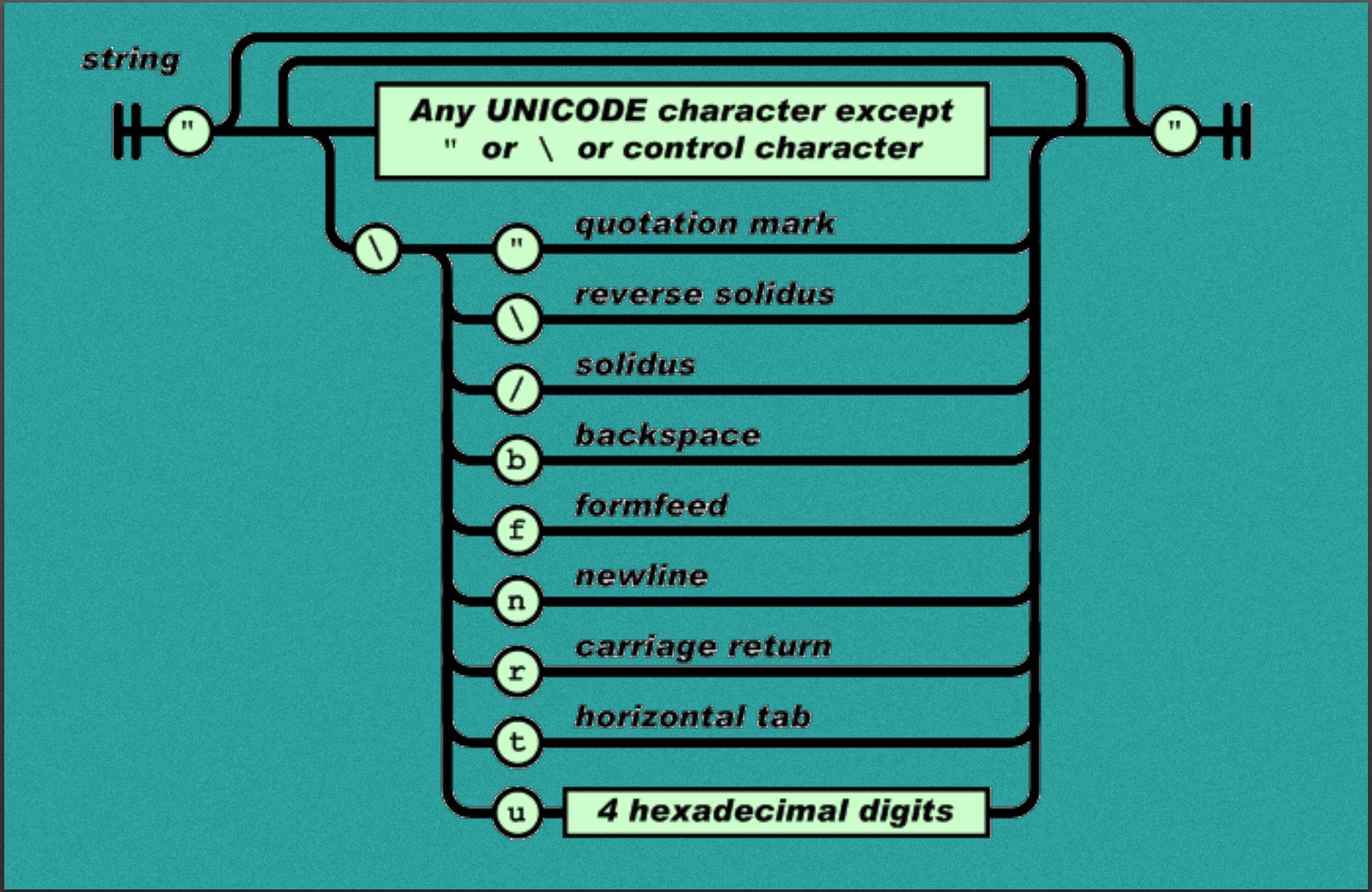
Believe me or not, It’s all

- Let’s try build a JSON parser?

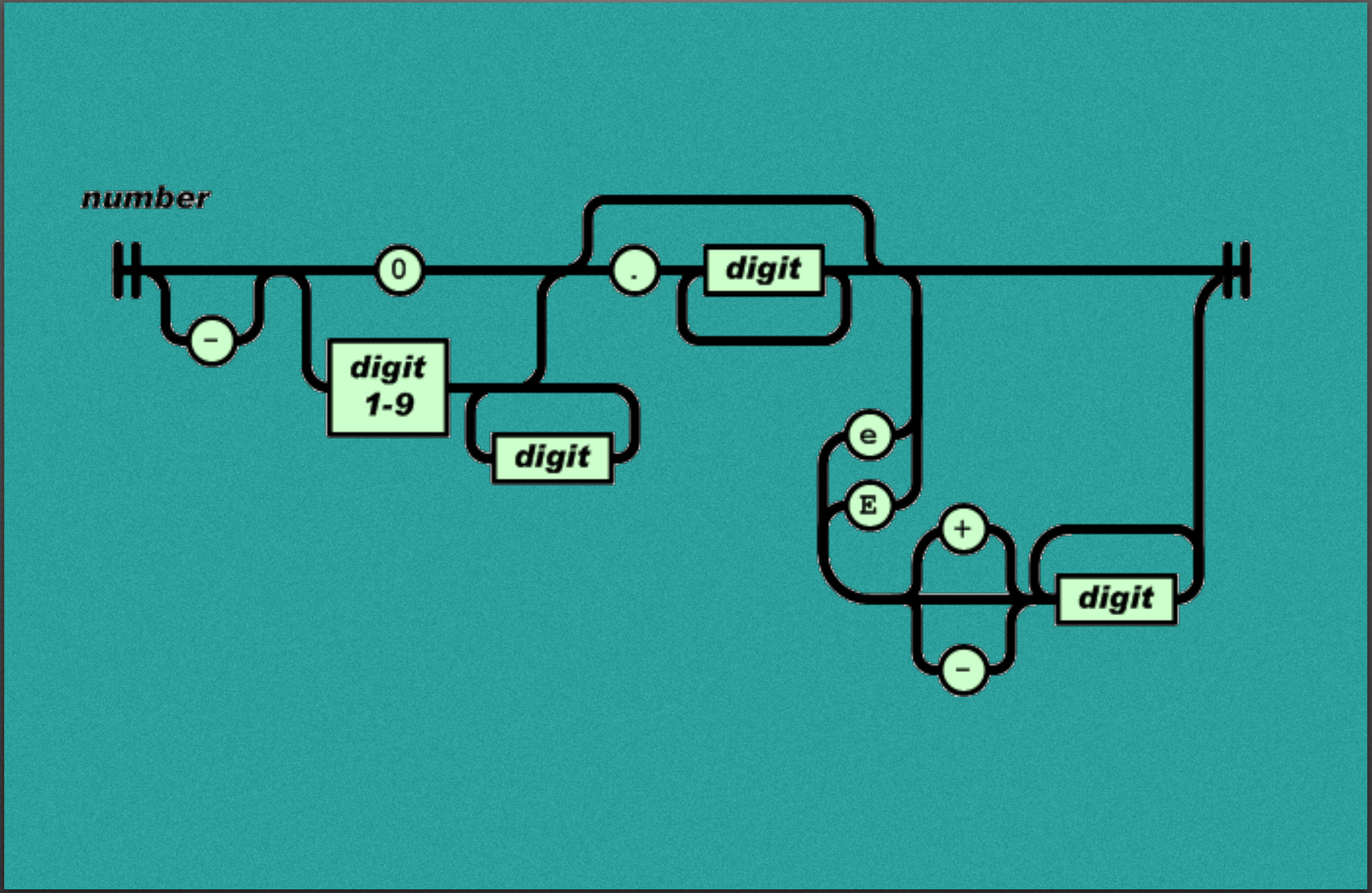
JSON



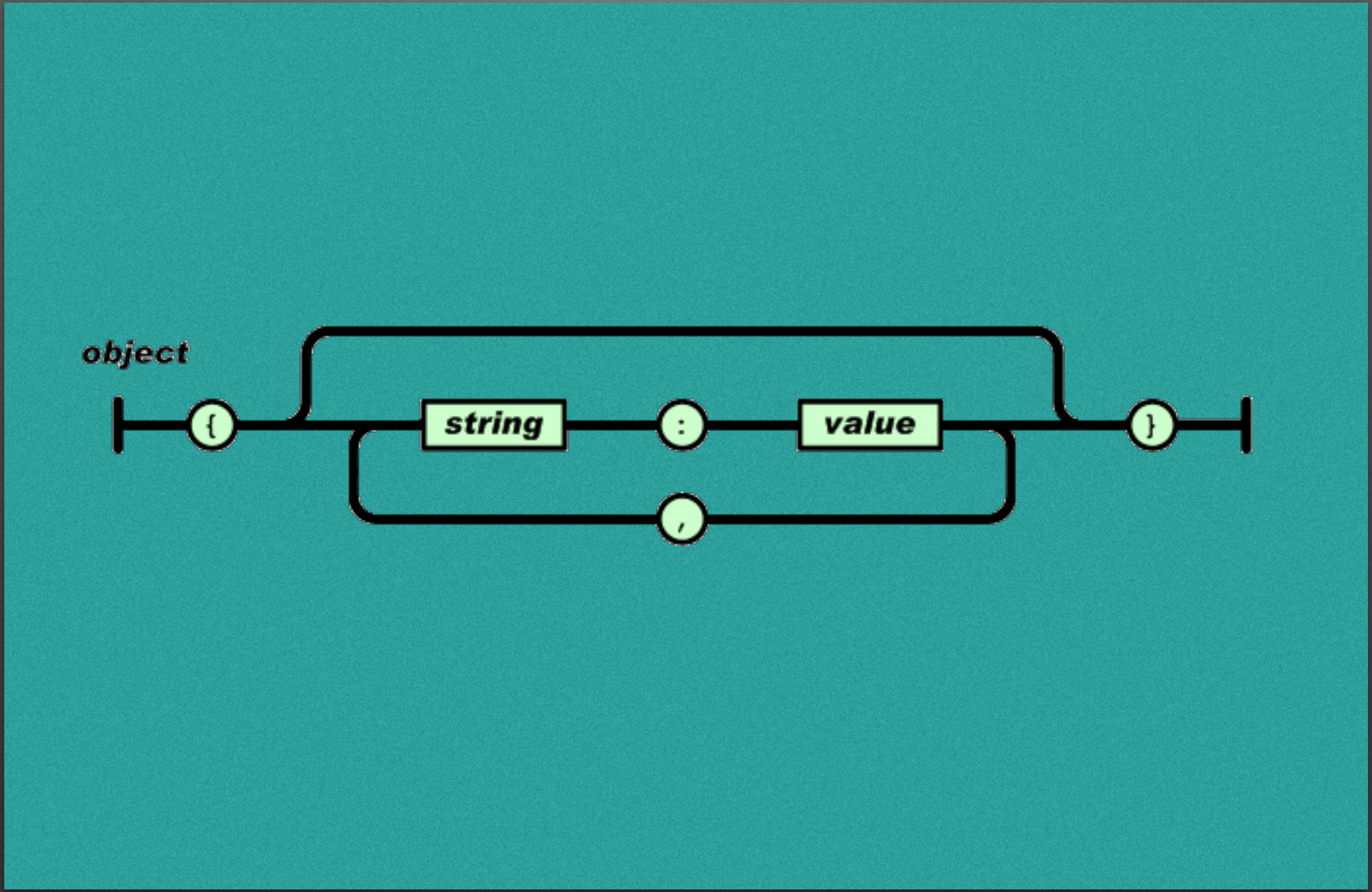
JSON


string
"
Any UNICODE character except
" or \ or control character
\
"
quotation mark
\
reverse solidus
/
solidus
b
backspace
f
formfeed
n
newline
r
carriage return
t
horizontal tab
u
4 hexadecimal digits
"

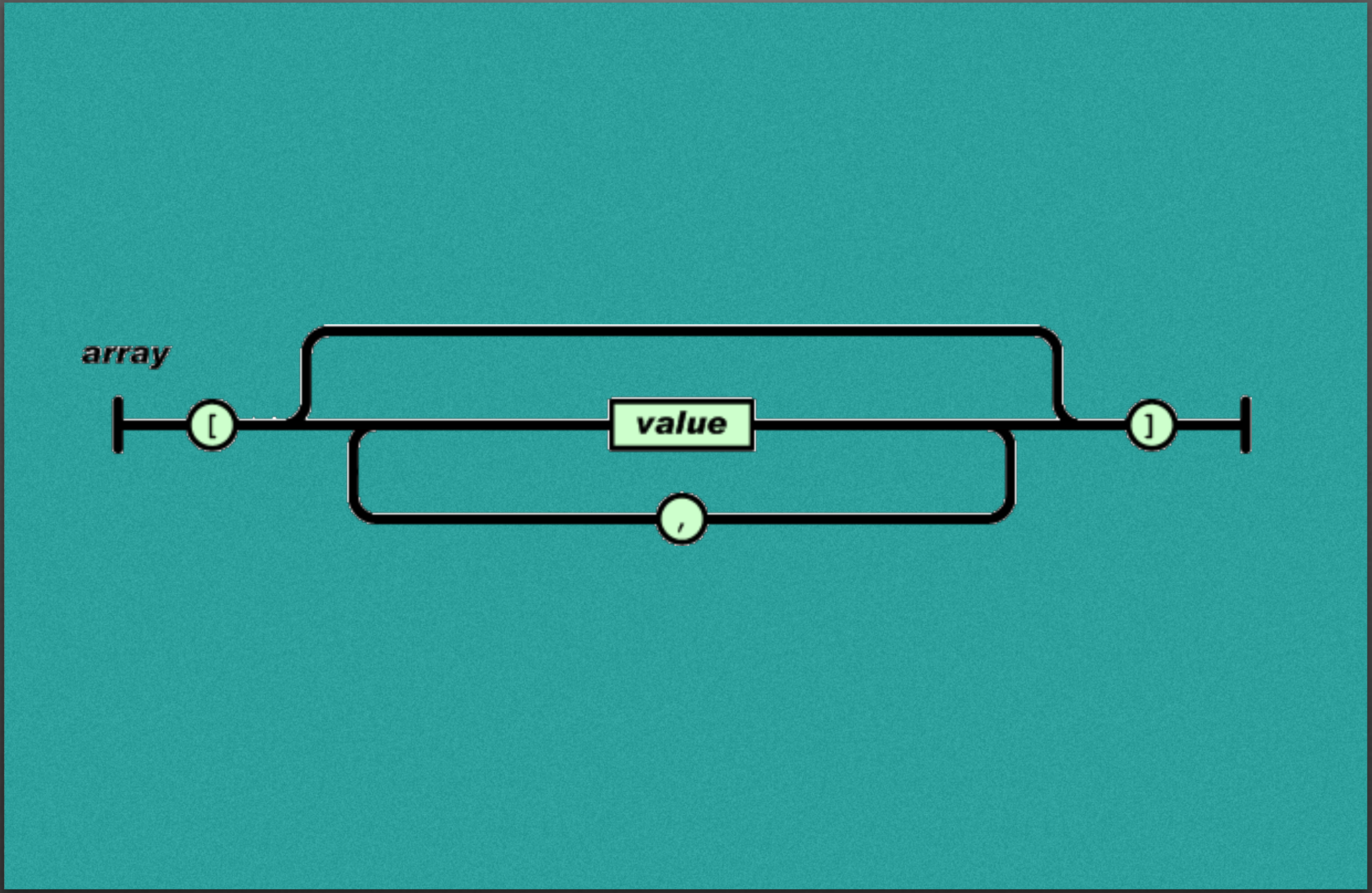
JSON



JSON



JSON



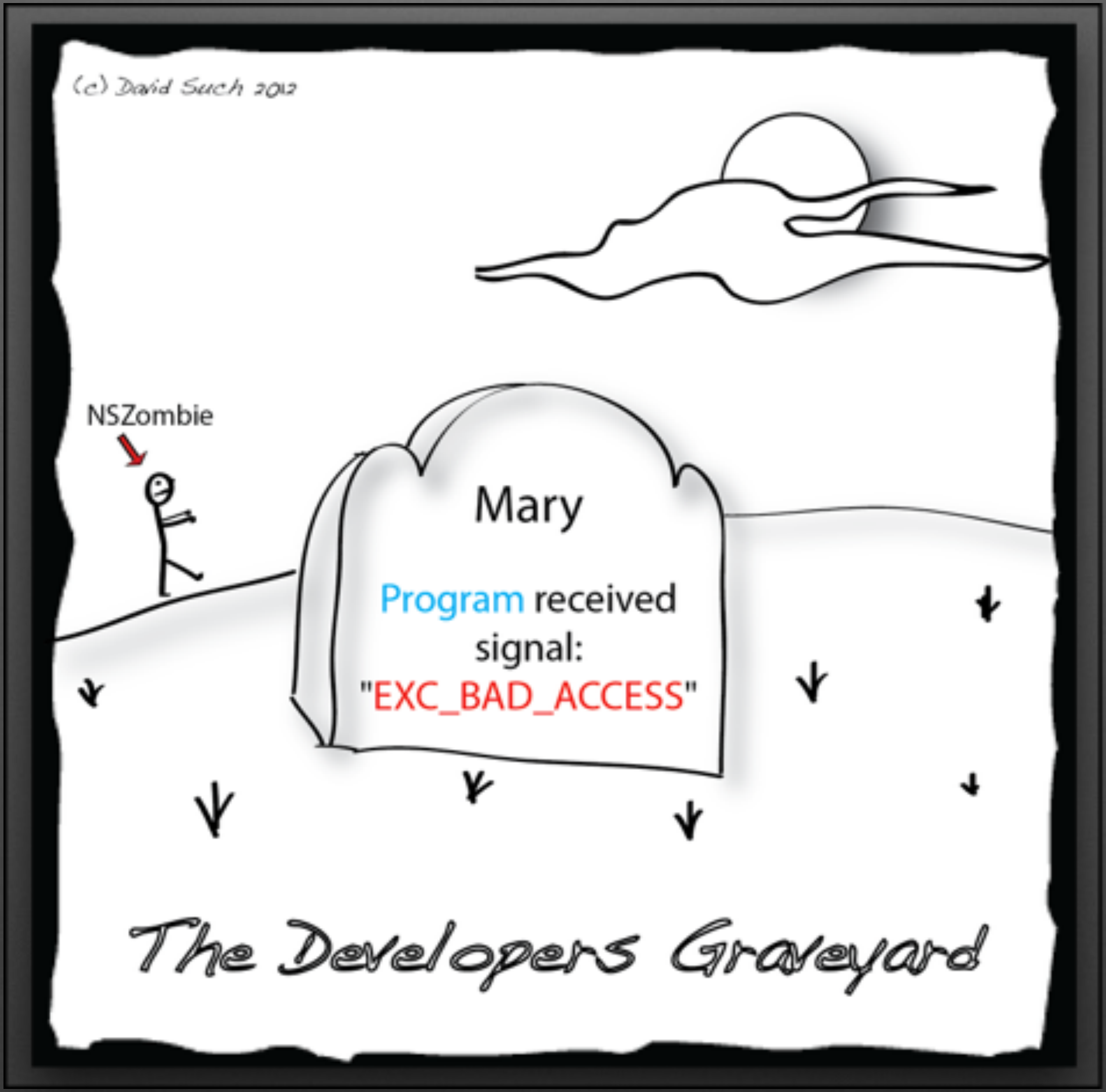
Code of JSON Parser

What did we learn

- Functor, Monad, Applicative are patterns in functional code
- We can use combinator pattern to structure our code
- Can these pattern be used in other places?

Resources

- https://github.com/lingoer/SwiftyCharms
- http://www.quanttec.com/fparsec/tutorial.html
- https://wiki.haskell.org/Parsec


(c) David Such 2012
NSZombie
Mary
Program received signal: "EXC_BAD_ACCESS"
The Developers Graveyard

Thanks