

PROGRAMMING FOUNDATION

A humble try to demystify important programming concepts.

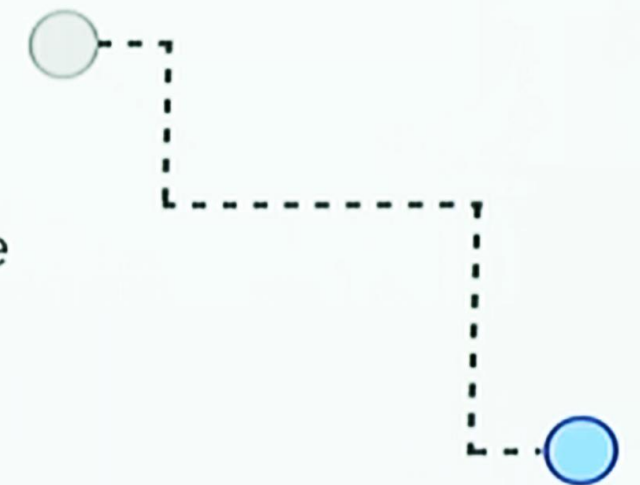
This presentation is heavily inspired by the course “Foundations of Programming. Fundamentals” by Simon Allardice.

WHAT IS PROGRAMMING ?

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Programming is the process of creating a set of instructions that tell a computer how to perform a task.

turn right
drive one mile
turn left on Acacia Avenue
take the second right
fourth house on the left



WHAT IS A PROGRAMMING LANGUAGE ?

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A *programming language* is a vocabulary and set of grammatical rules.

Coding is the process of using a programming language.

```
ALGOL 68 / Python 3 / Lua  
print("Hello, world")
```

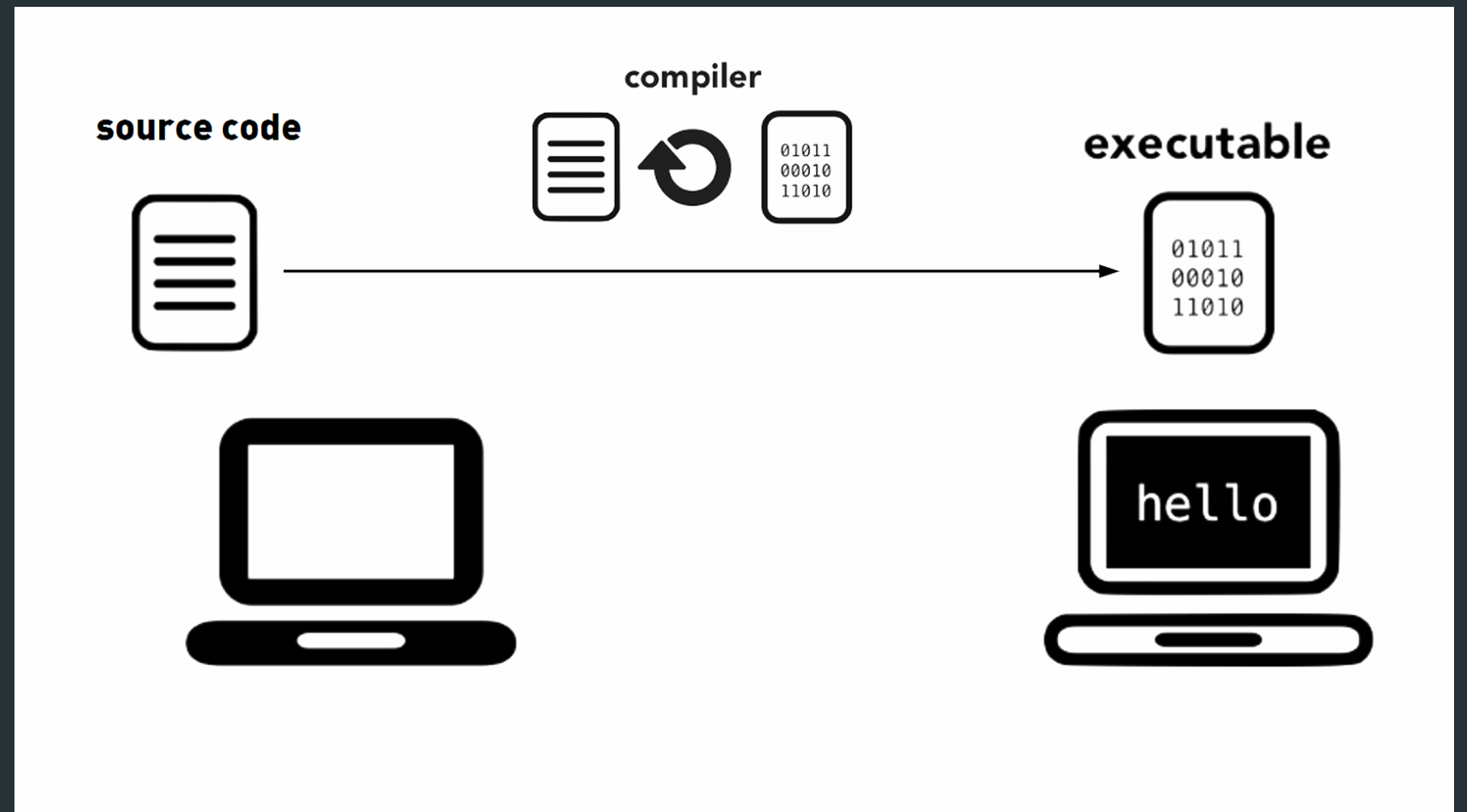
STATEMENTS

BASIC	LET Balance = 500
AppleScript	set balance to 500
Java	balance = 500;
COBOL	MOVE 500 TO BALANCE

COMPILED LANGUAGES

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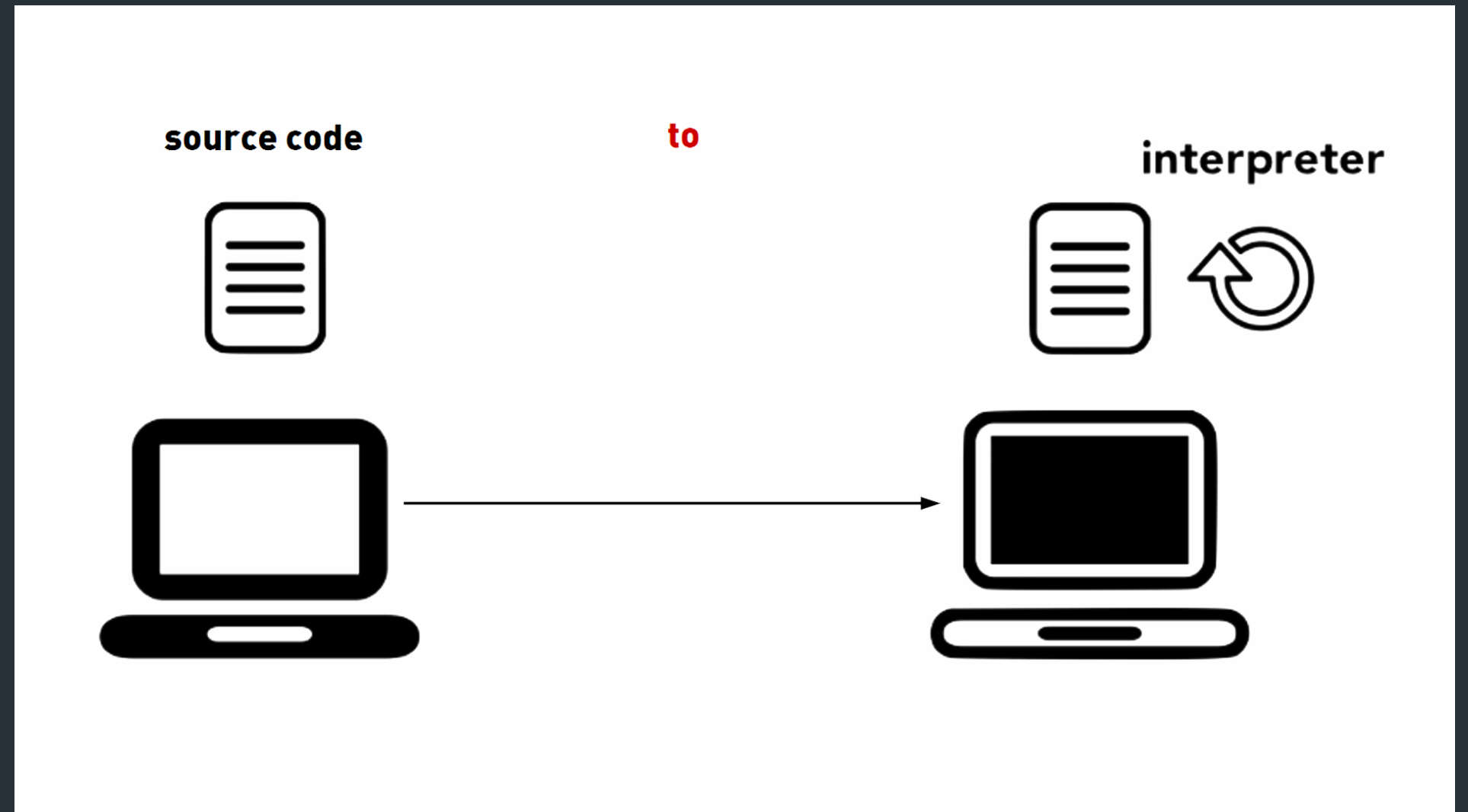
C, C++, Objective C



INTERPRETED LANGUAGES

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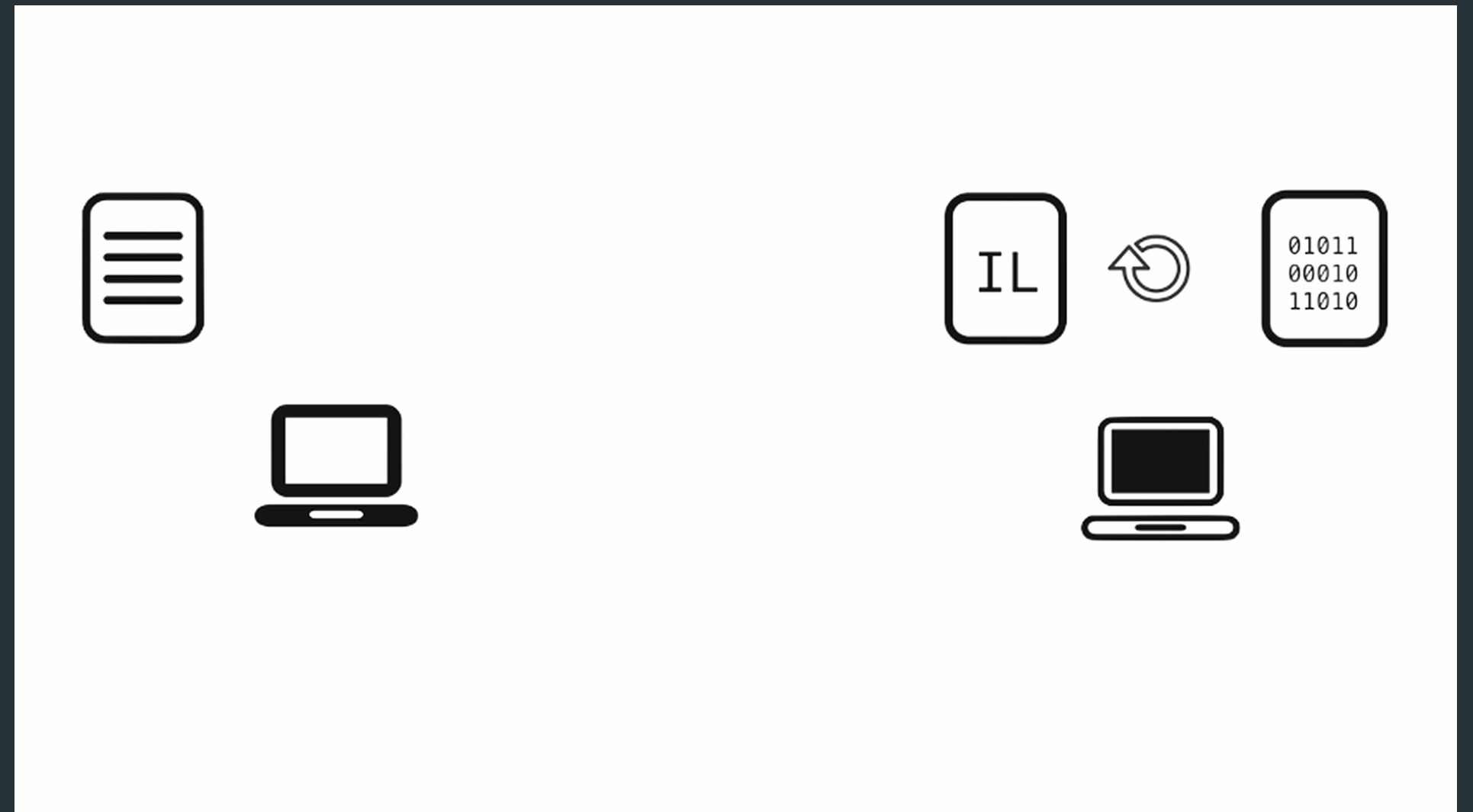
PHP, JavaScript



INTERMEDIATE (HYBRID) LANGUAGES

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Java, C#, Python

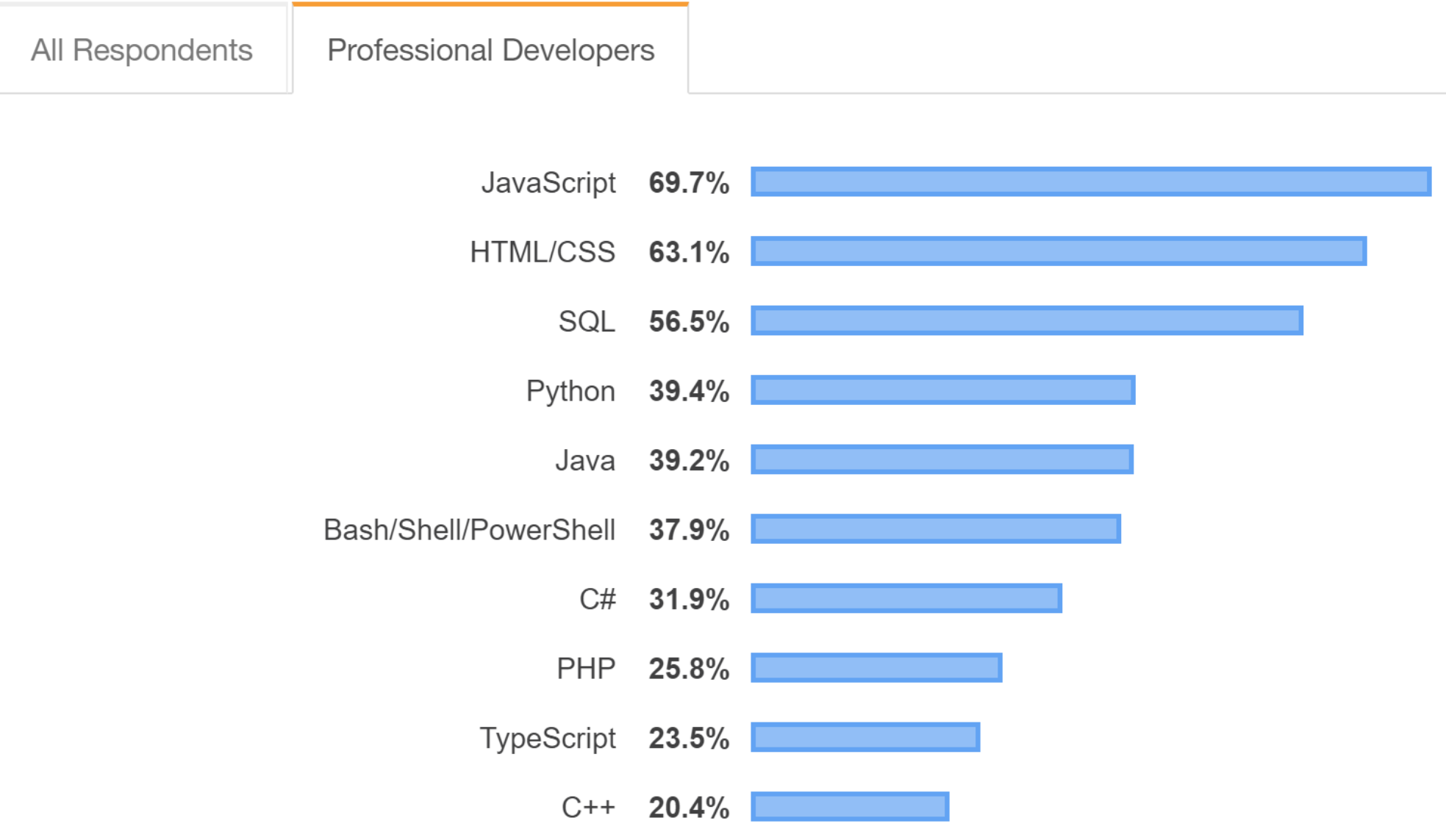


COMPILED vs INTERPRETED

PROS AND CONS

COMPILED		INTERPRETED	
ready to run	not cross-platform	cross-platform	interpreter required
often faster	inflexible	simpler to test	often slower
source code is private	extra step	easier to debug	source code is public

Programming, Scripting, and Markup Languages



- Comments
- Variables
- Data Types (*String, Number, Boolean, Null, Object*)
- Operators
- Arrays
- Conditions
- Loops
- Functions / Methods
- Classes