

Computer Language



Course overview



Intro

■ Tutor

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■ Class homepage

- E-class (<http://eclass.seoultech.ac.kr>)

■ Pre/Post-requisites

- Programming language
- Data structure, Mobile programming, Algorithm, etc.

Curriculum

■ Goal

- This module aims to provide a basic understanding of software solutions: their analysis, design, development and implementation including appropriate methodologies and skills in the use of an event driven language for open source development (Java)
- This module focuses on Object Oriented Programming using Java

■ Schedule

- Java basics (W2~W7)
 - Types, Basic operators, Conditions, Loop, OOD/P
- Java advances (W9~W14)
 - Exception, Collections, Generic, IO

Curriculum (cont'd)

■ Assignment

- Laboratory coursework / week (application programming)
- Submission: e-class

■ Evaluation

- Midterm: 30%
- Final: 40%
- Homework: 30%

Curriculum (cont'd)

■ Textbook

➤ Slide

➤ Reference

- 혼자공부하는 자바, 한빛미디어
- 이것이 자바다, 한빛미디어
- Java: An Introduction to Problem Solving & Programming, 7th Ed., Savitch & Mock, Pearson, 2015.
- OCA Java SE 8 Programmer I Exam Guide (Exams 1Z0-808) (Certification & Career - OMG) , Kathy Sierra, Bert Bates, McGraw-Hill Education (May 5, 2017)

■ Important Note

- No cheating, please!

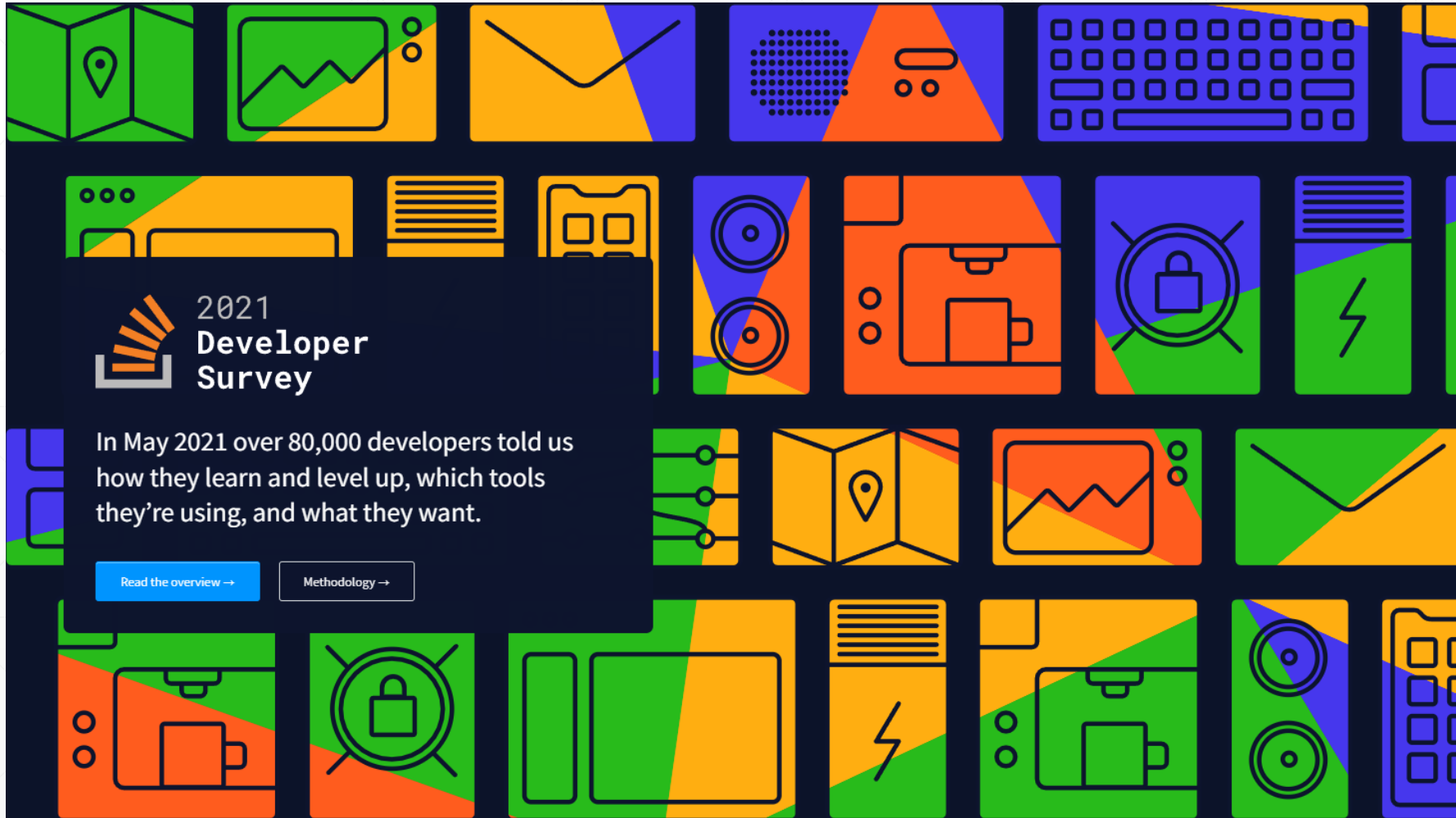
Curriculum (cont'd)

■ Development environment

- Java 11 (LTS)
- IDE: IntelliJ
- Windows 10+

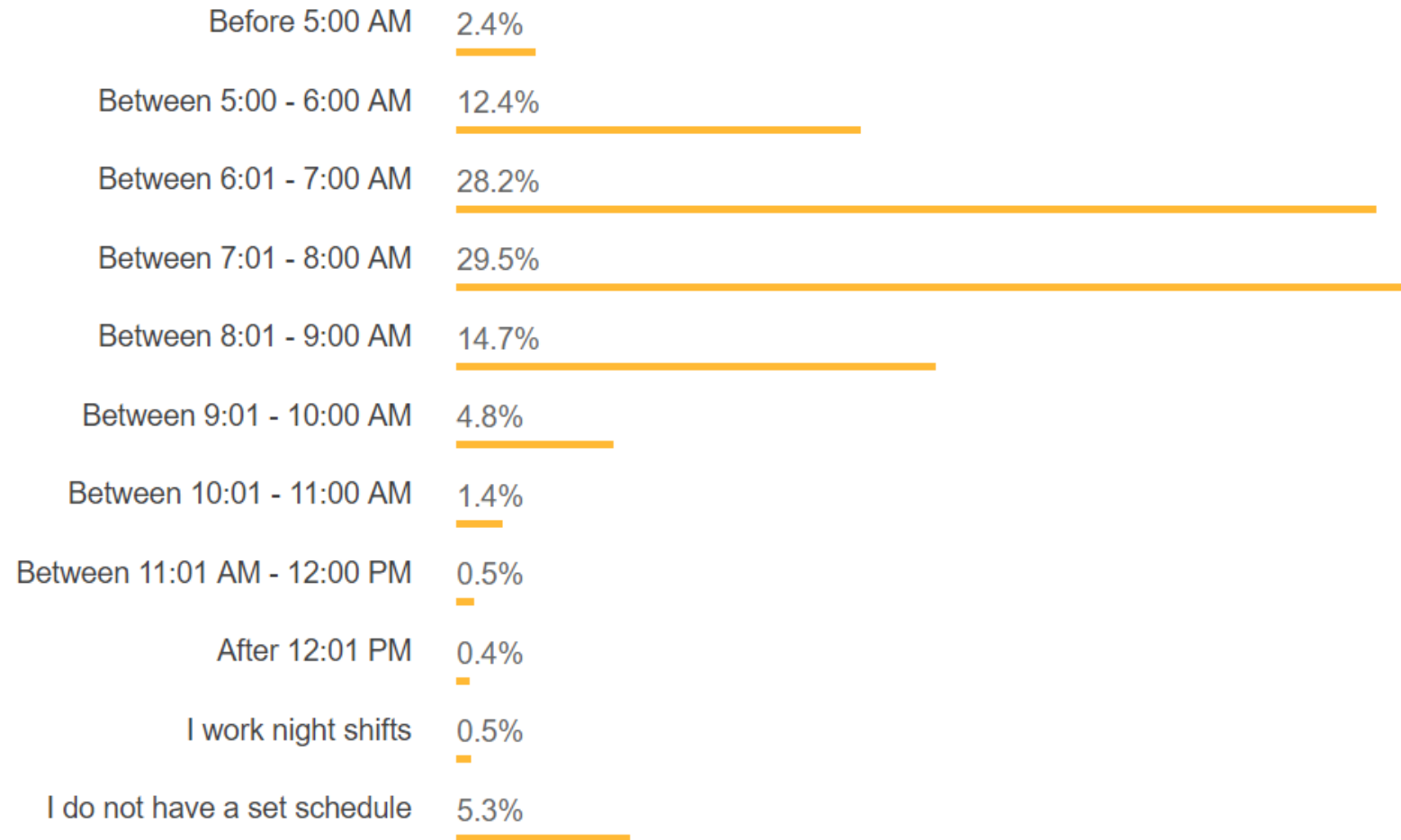
Stack Overflow Developer Survey 2020

■ <https://insights.stackoverflow.com/survey/2021>



Developer Survey - Developer Profile

What Time Do Developers Wake Up? 2018



Developer Survey - Developer Profile (cont'd)

How Much Time Do Developers Spend on a Computer? 2018

How Much Time Do Developers Spend Outside? 2018

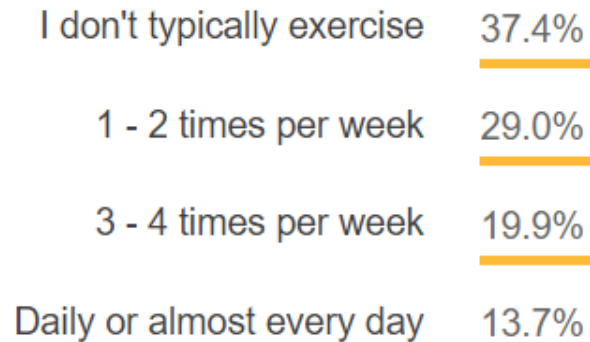


Developer Survey - Developer Profile (cont'd)

Healthy Habits 2018

How Often Do Developers Skip Meals To Be Productive?

How Often Do Developers Exercise?



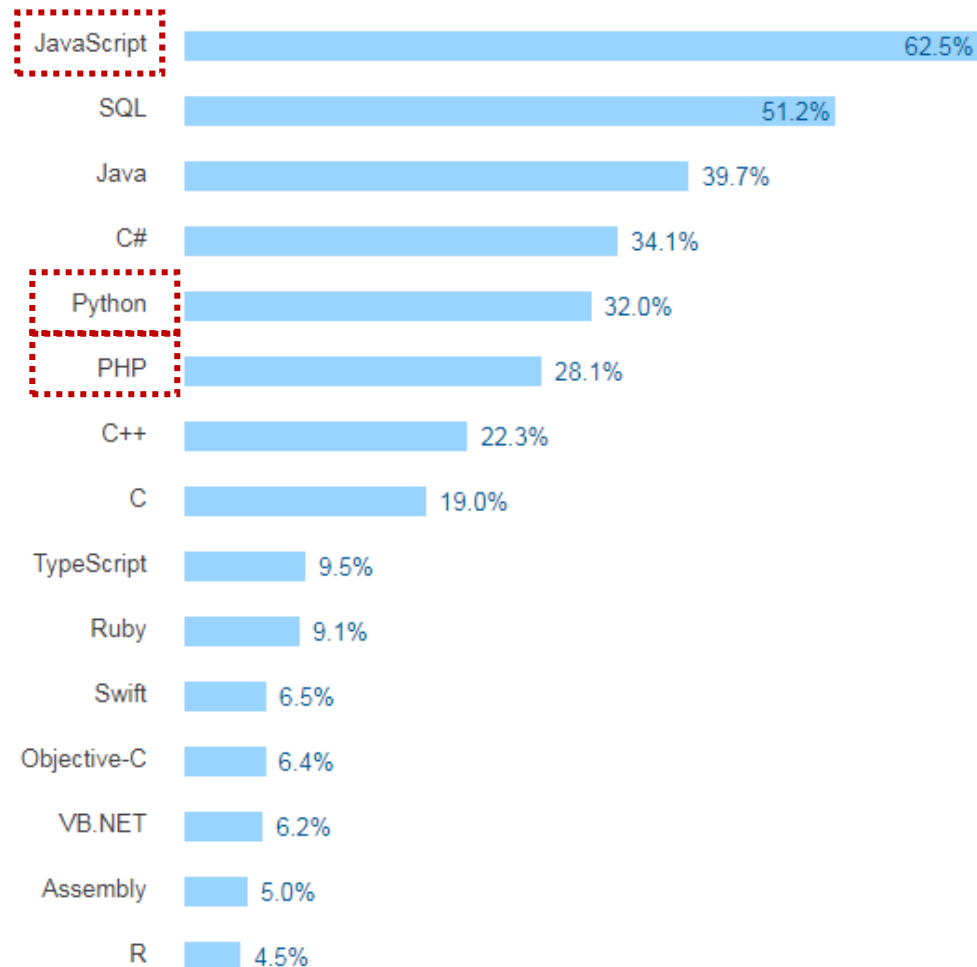
Developer Survey - Technologies

Programming Languages 2017

% of This Category

% of All Respondents

% of Professional Developers

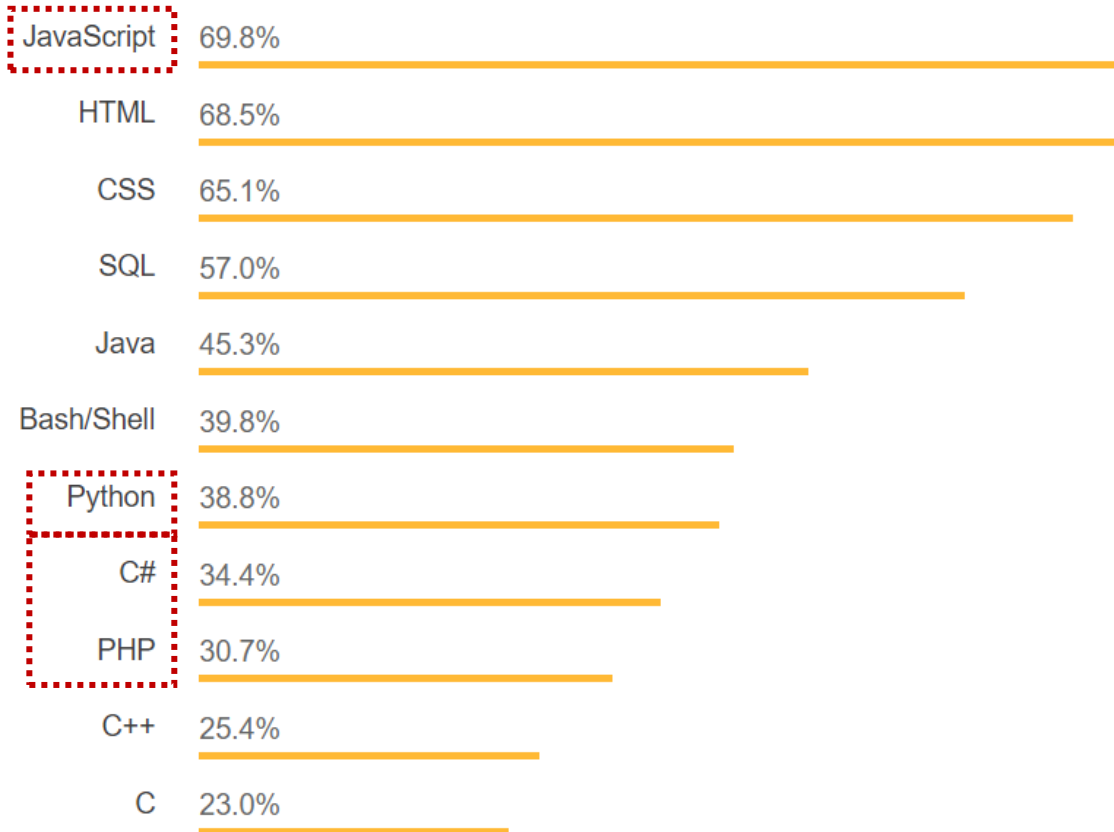


Developer Survey - Technologies (cont'd)

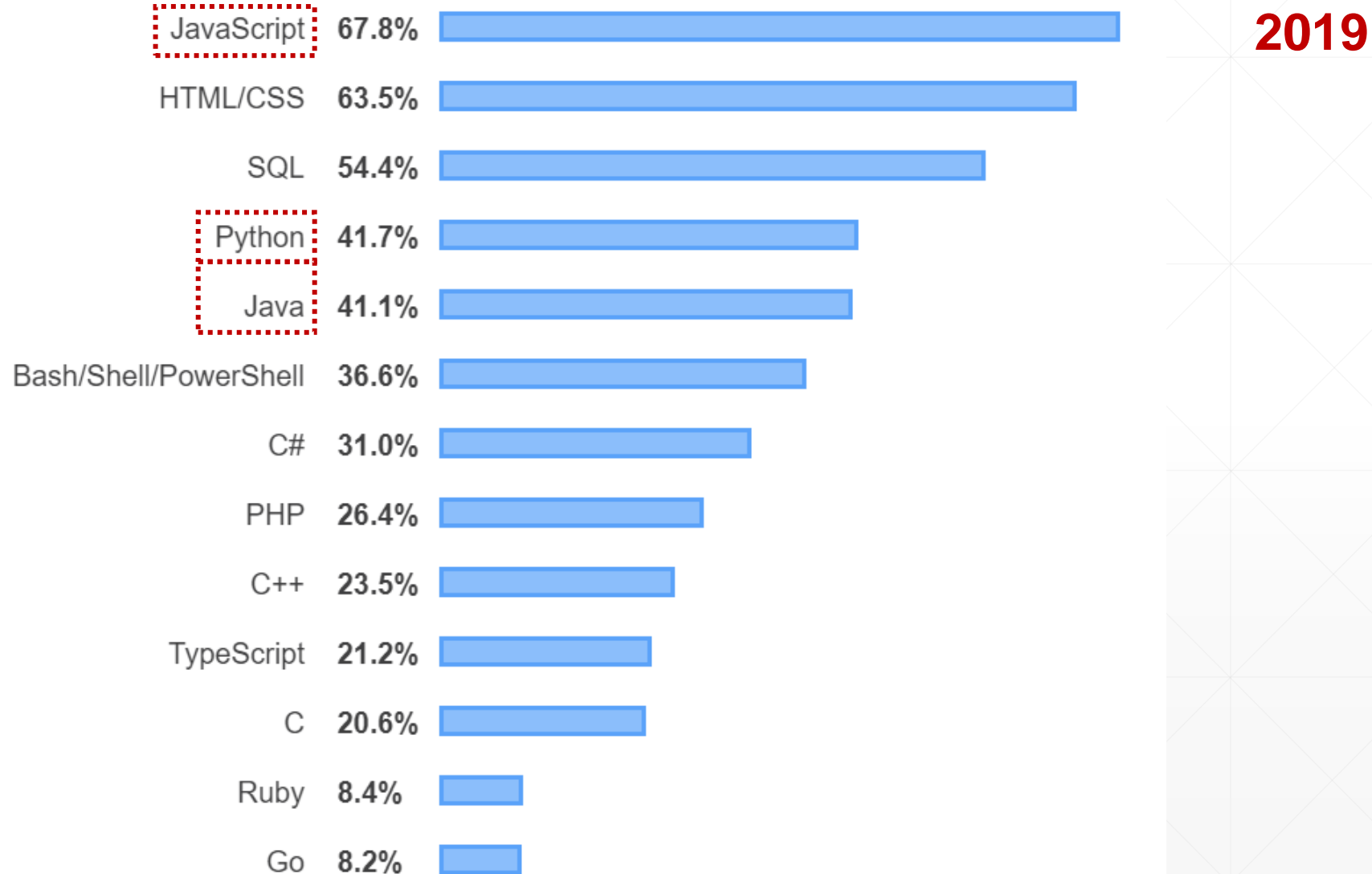
Programming, Scripting, and Markup Languages 2018

All Respondents

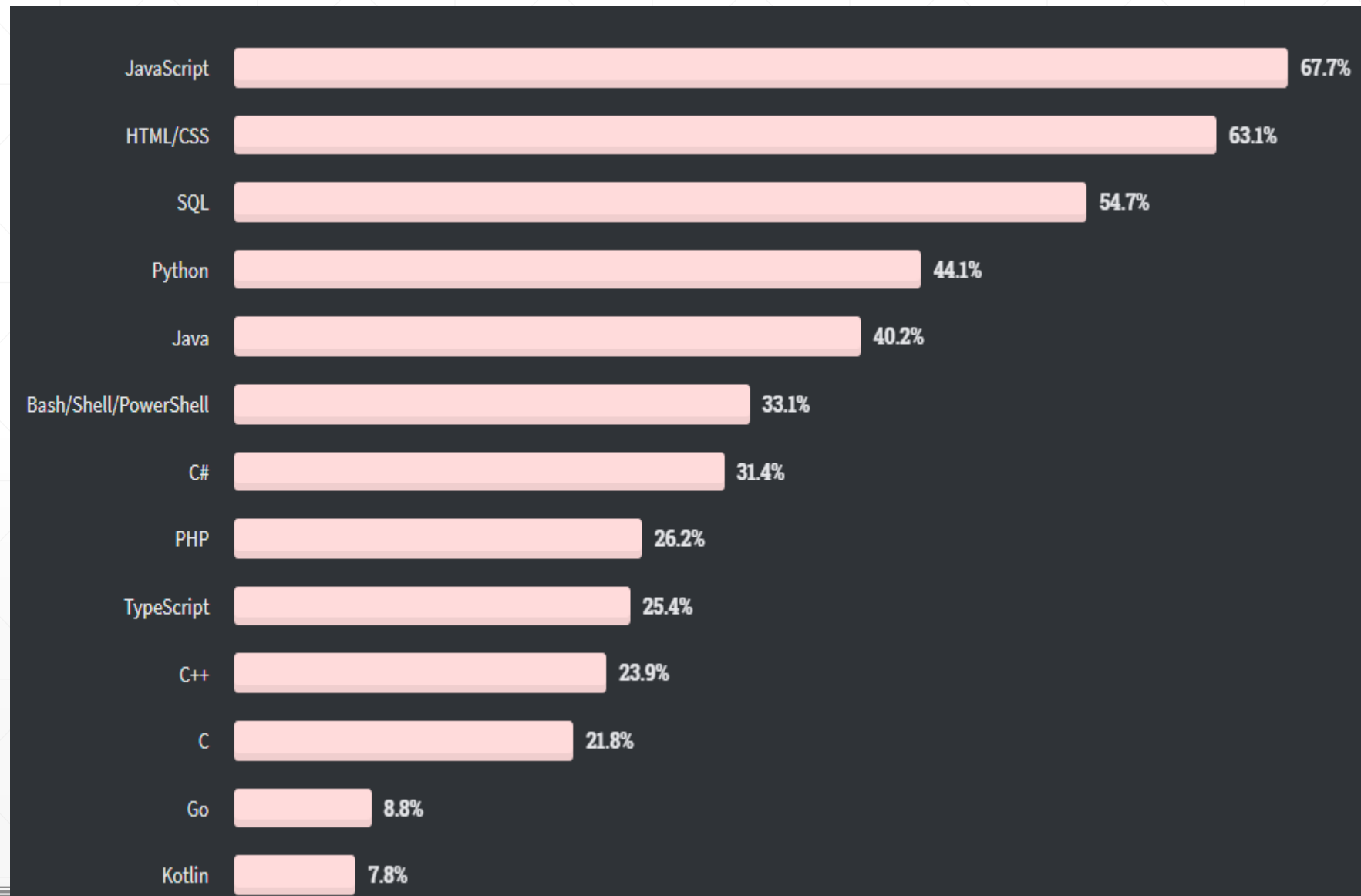
Professional Developers



Developer Survey - Technologies (cont'd)



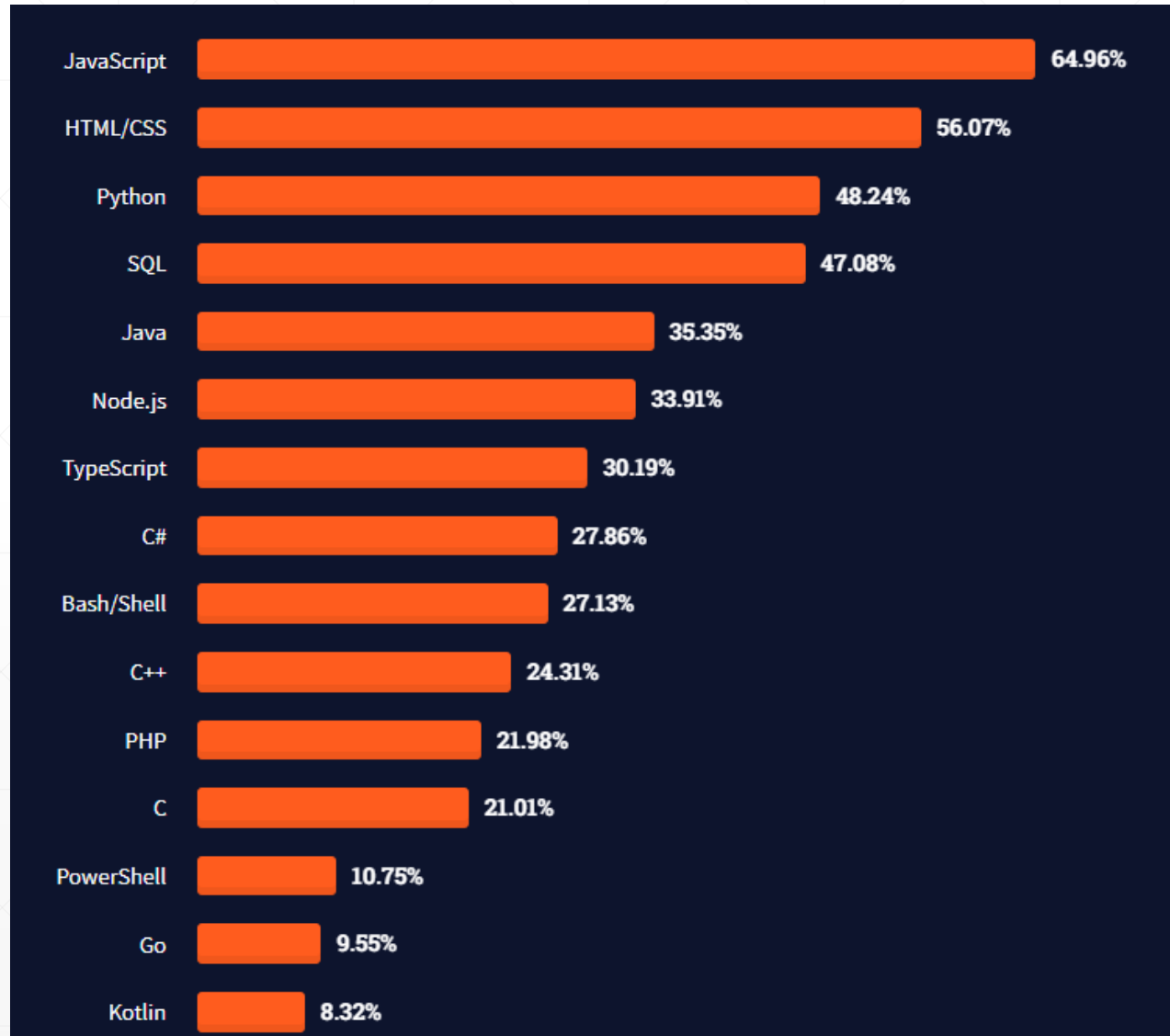
Developer Survey - Technologies (cont'd)



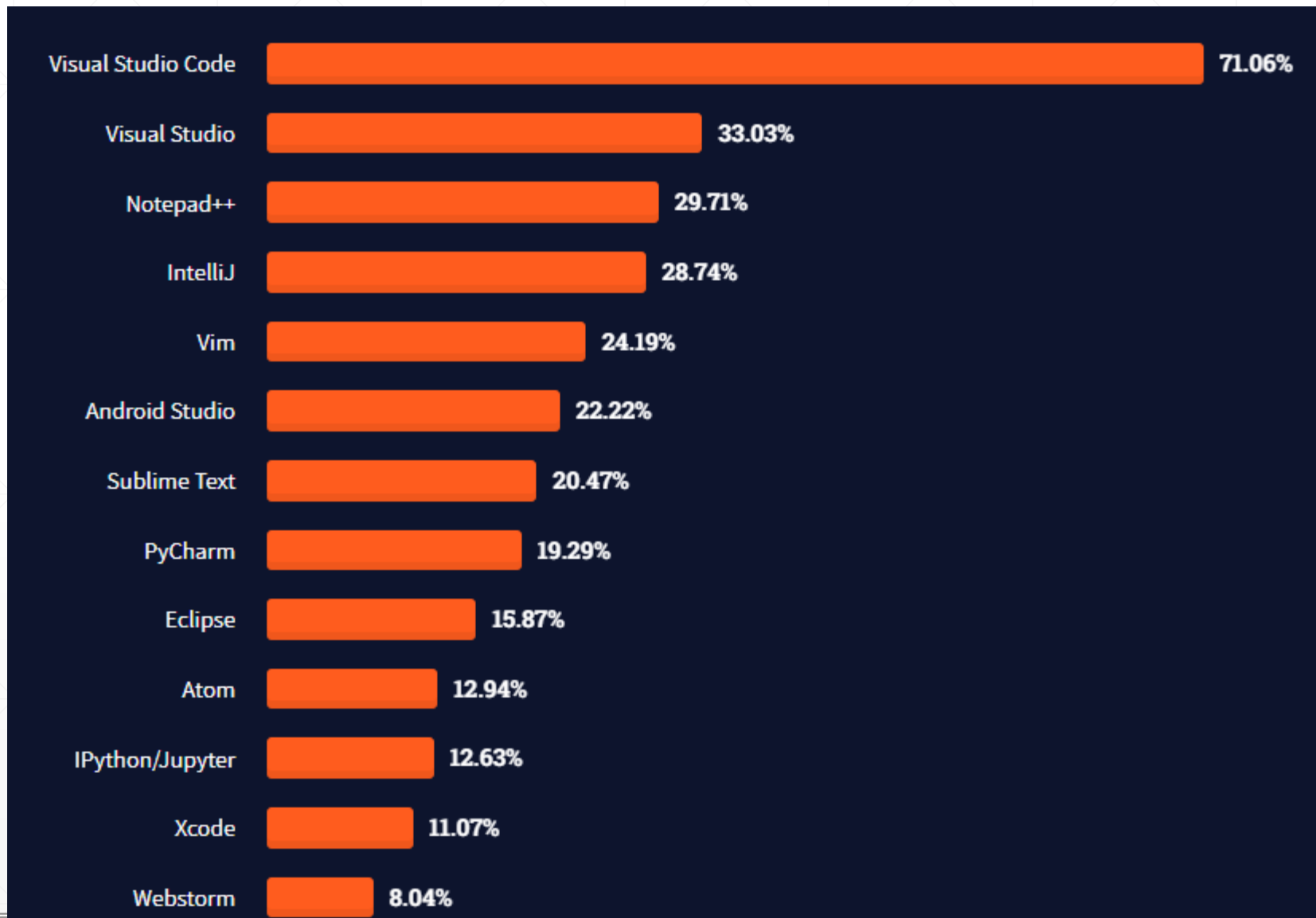
2020

Developer Survey - Technologies (cont'd)

2021

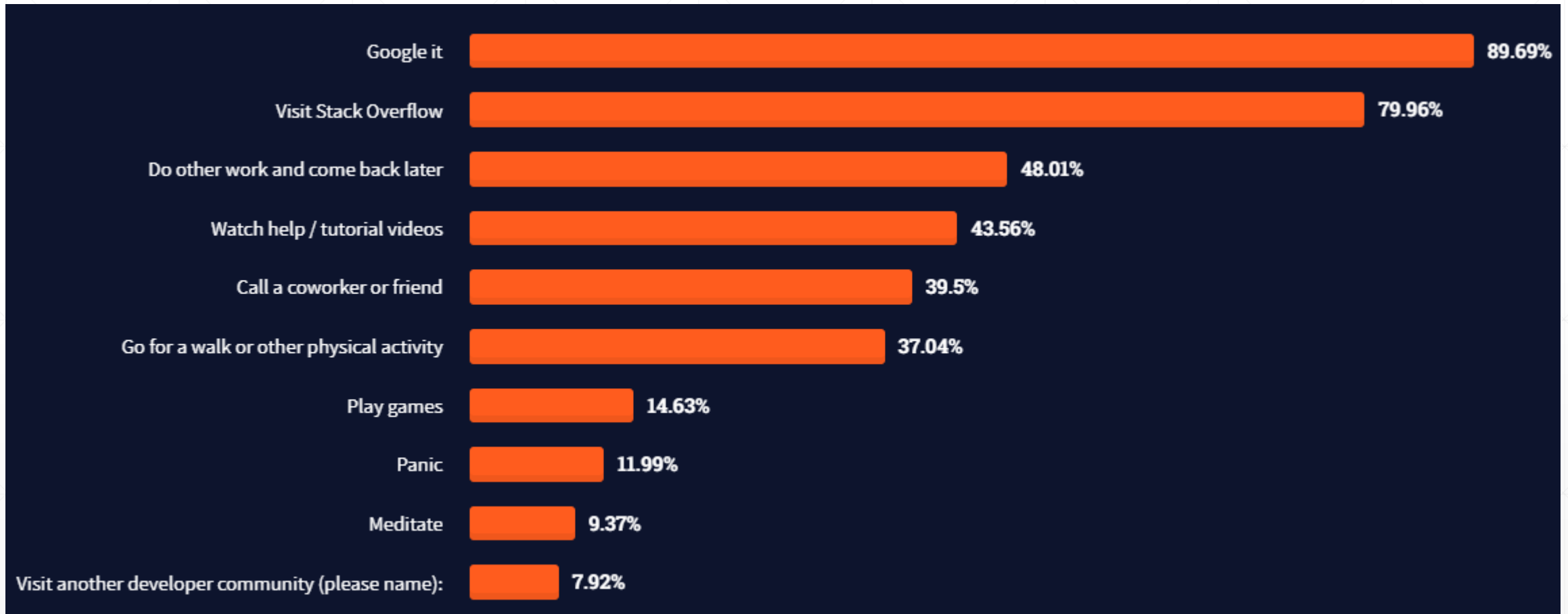


Developer Survey - IDE

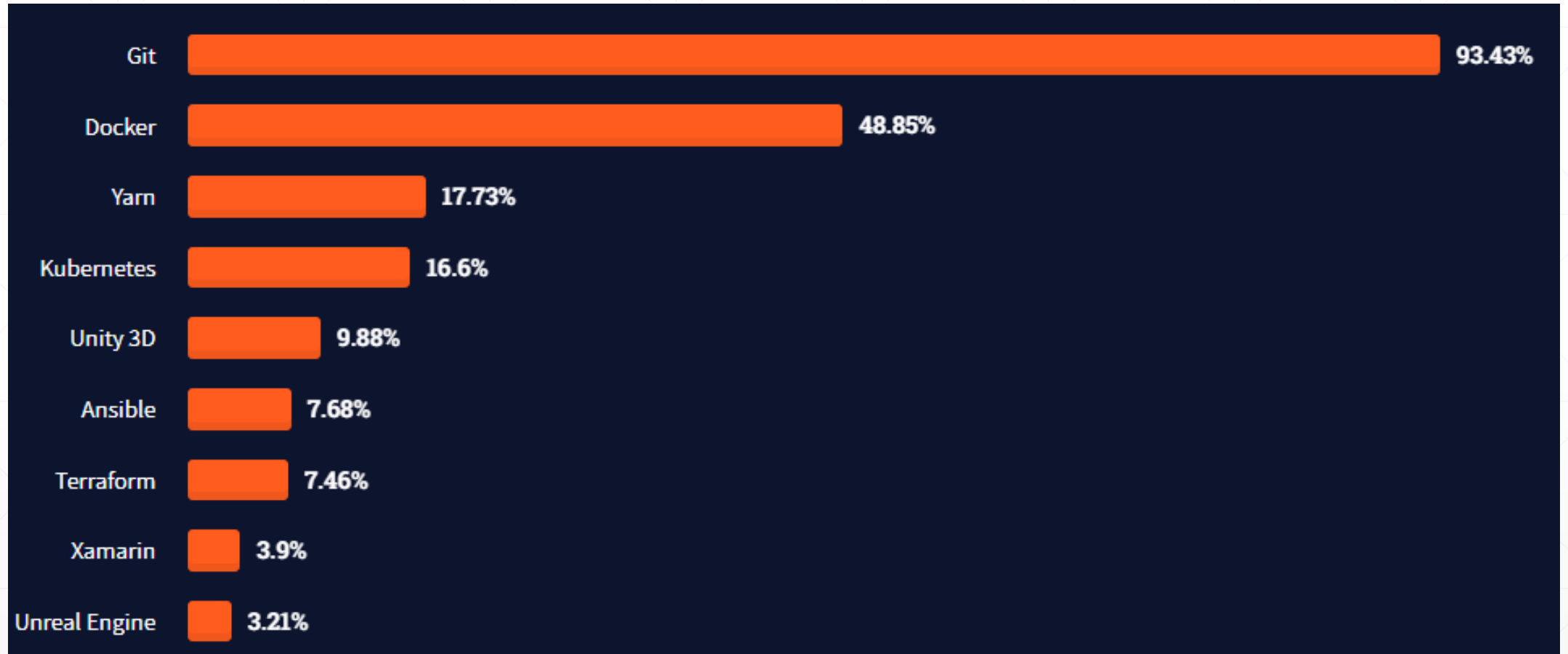


Developer Survey – Learning & Problem Solving

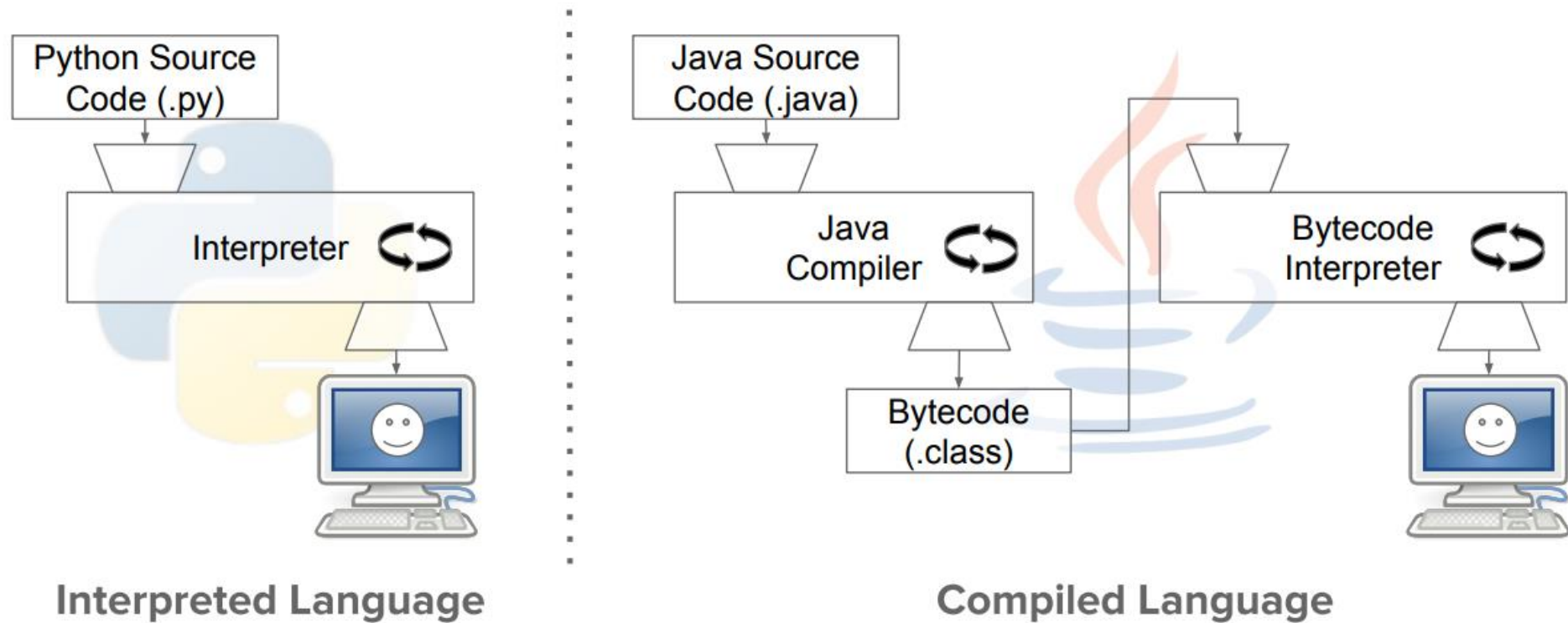
■ What do you do when you get stuck



Developer Survey – Tools



Java?



Java?

```
print("Hello, World!!")
```

PYTHON

```
D:\W> python hello.py  
Hello, World!!
```

Python

```
public class Hello {  
    public static void main (String[] args) {  
        System.out.println("Hello, World!!");  
    }  
}
```

JAVA

```
D:\W> javac Hello.java
```

```
Hello.class - 메모장  
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)  
줄번호 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 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```

Java?



```
print("Hello, World!!")
```



```
public class Hello {  
    public static void main (String[] args) {  
        System.out.println("Hello, World!!");  
    }  
}
```

Java?

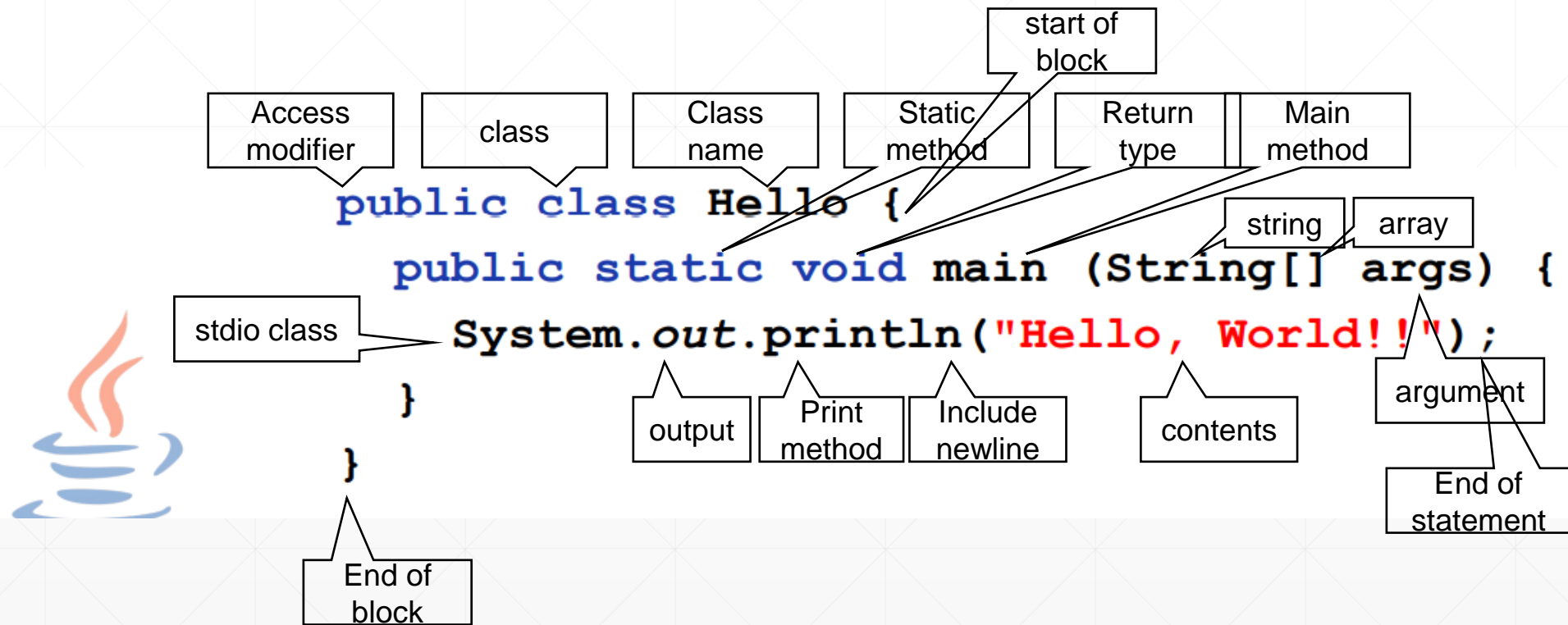


```
print("Hello, World!!")
```

function

contents

Java?



Java?



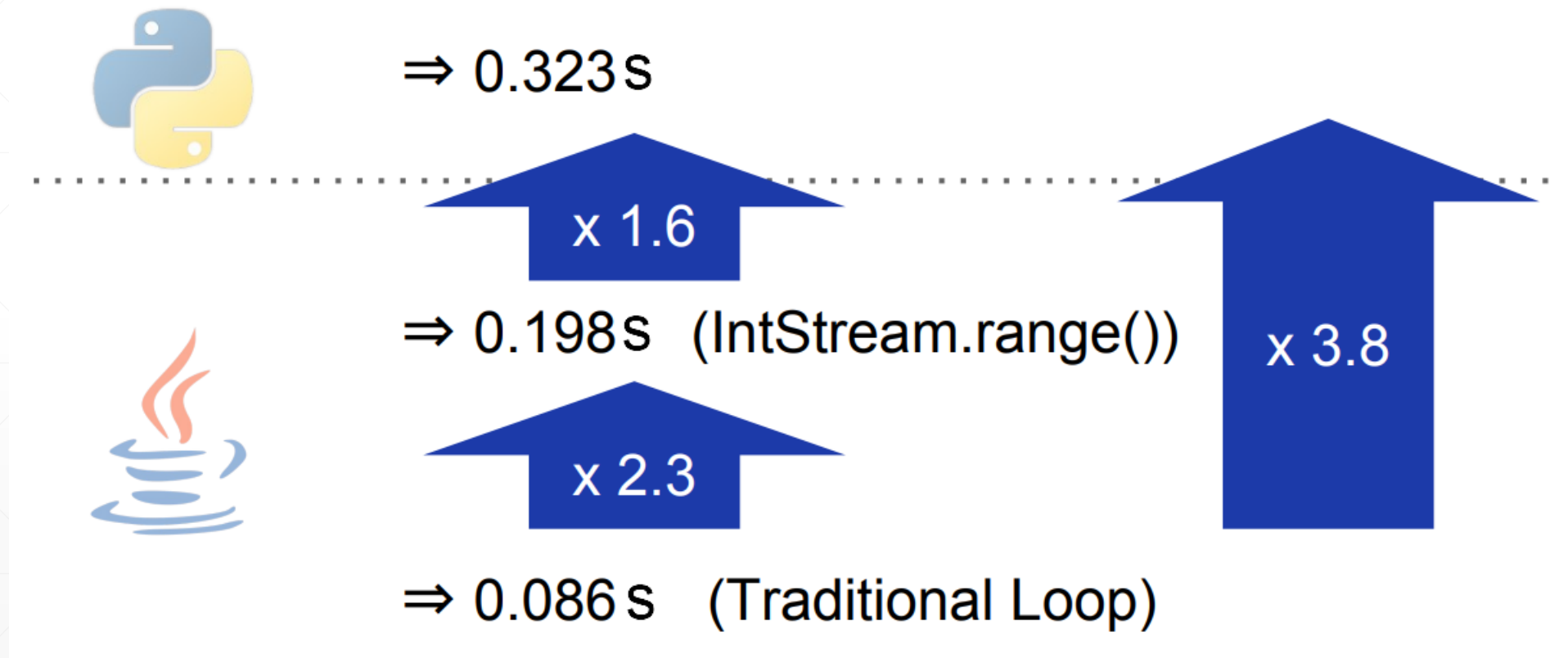
```
"-".join(str(n) for n in range(100))
```



```
private static void join (int num) {  
    for(int i = 0; i < num; i++) {  
        StringBuilder sb = new StringBuilder();  
        for(int j: IntStream.range(0, 100).toArray()) {  
            if(sb.length() == 0) sb.append(j);  
            else sb.append("-").append(j);  
        }  
    }  
}
```


Java?

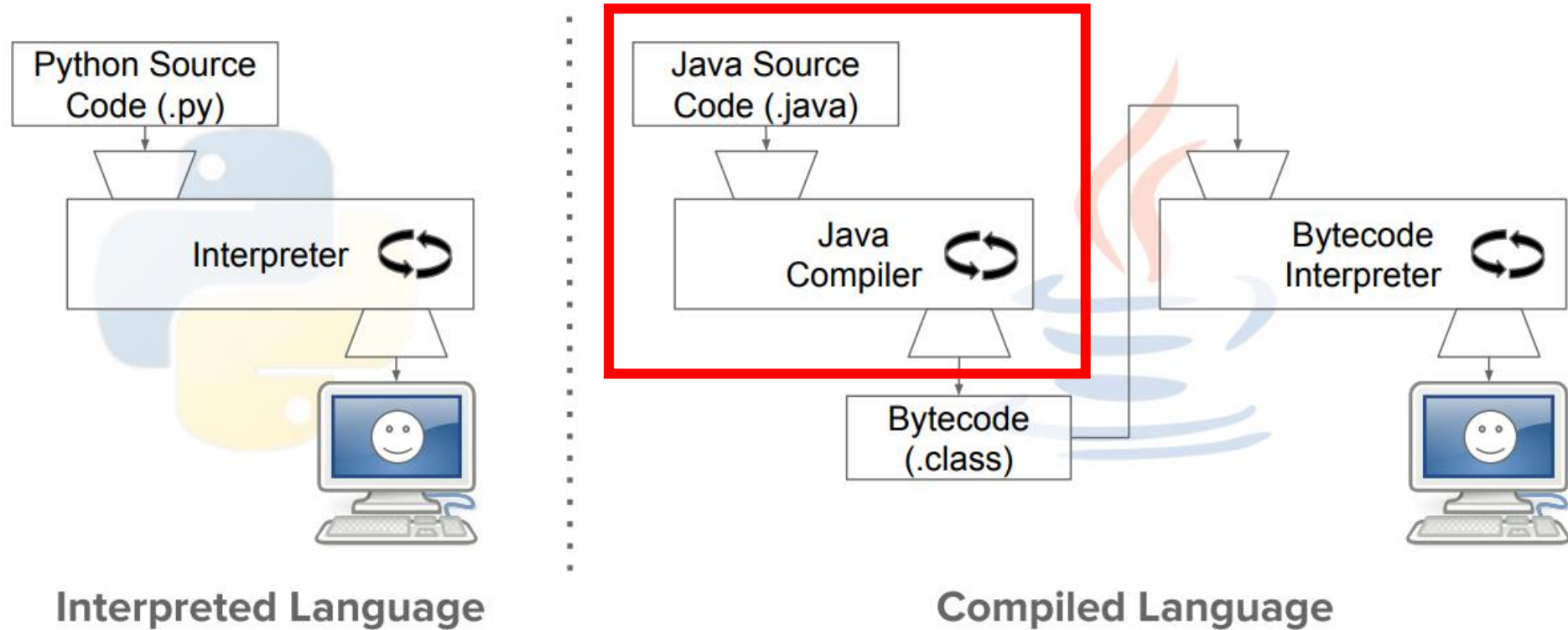
■ Runtime efficiency



Resource from PyCon 2017

Java?

■ Development time efficiency



Java?

Free-Style



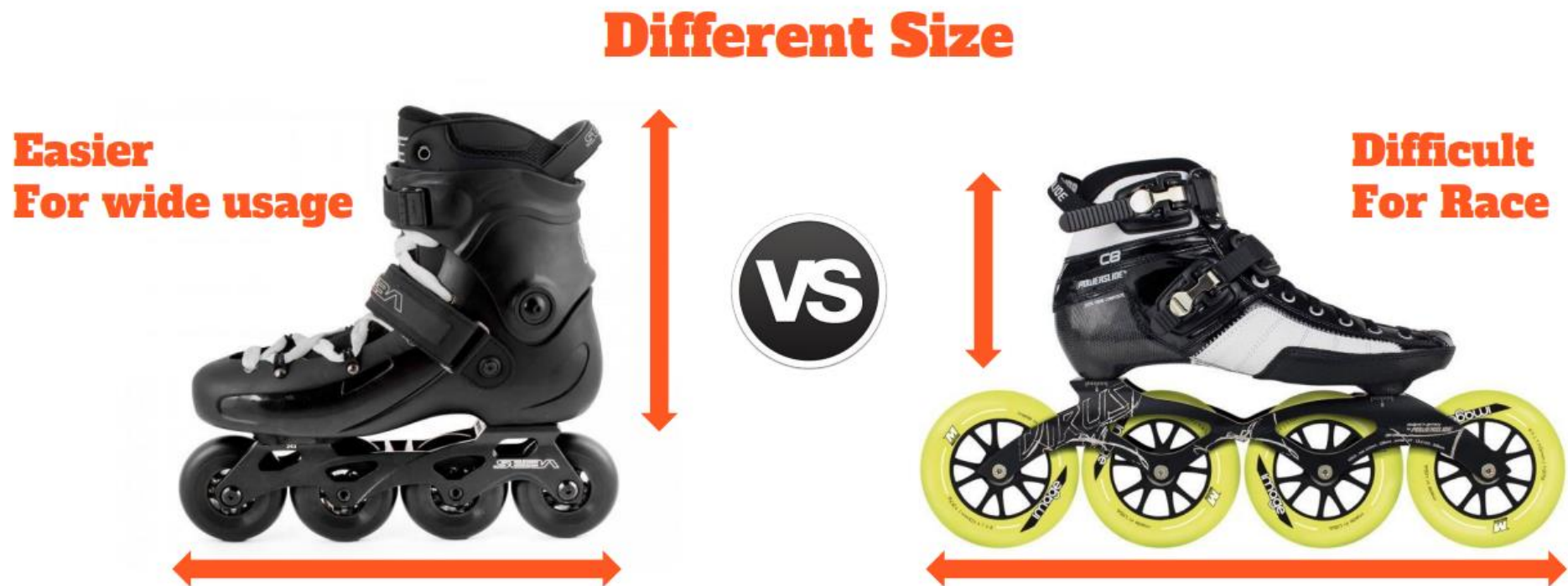
VS

High-end



Resource from PyCon 2017

Java?



Resource from PyCon 2017

Java?

Build FAST

VS

Run FAST

Q&A

■ Next... in this week

- JDK/IDE Setup (eClass video)

■ Next week

- Introduction to Java
- Types