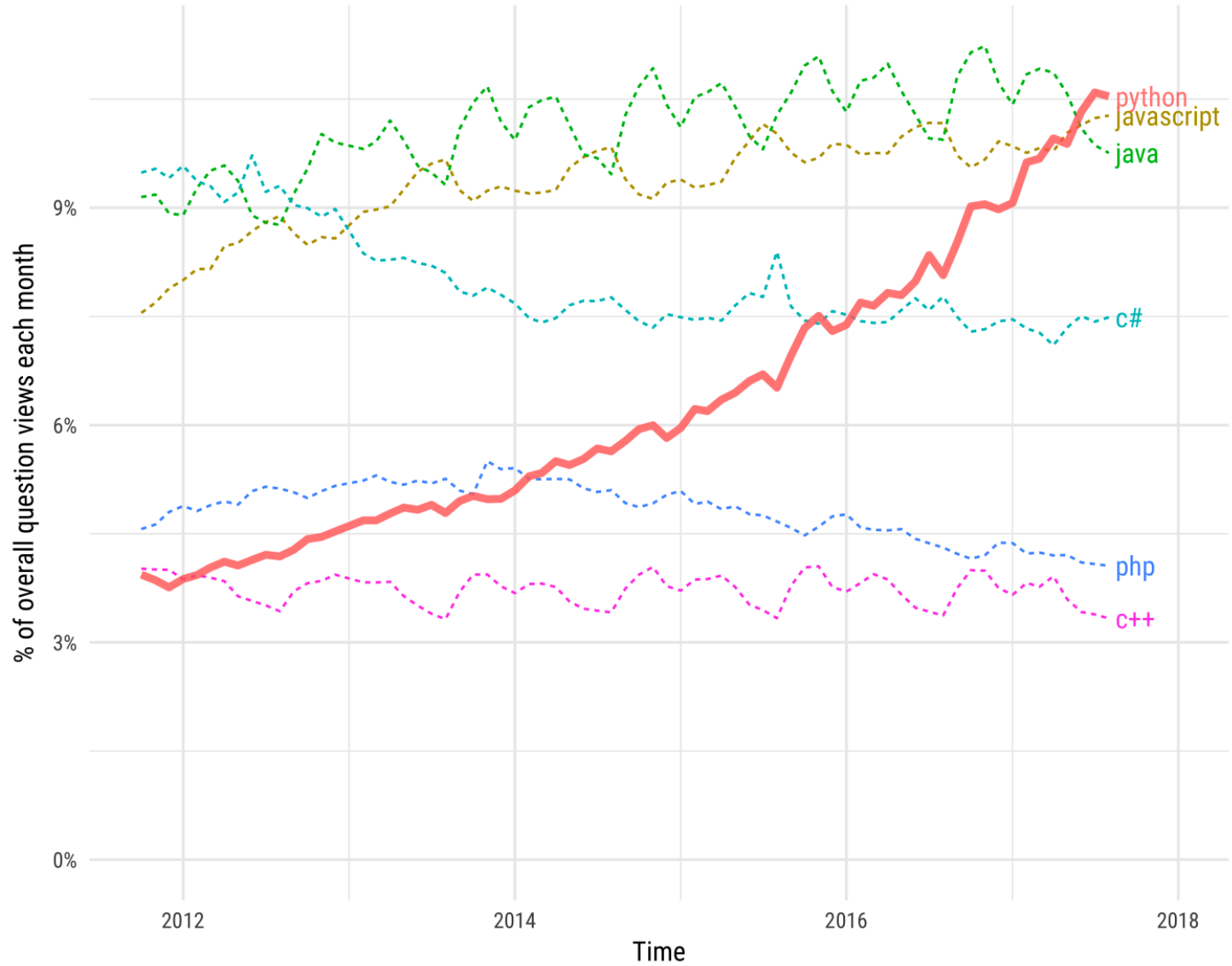


Part II: Python

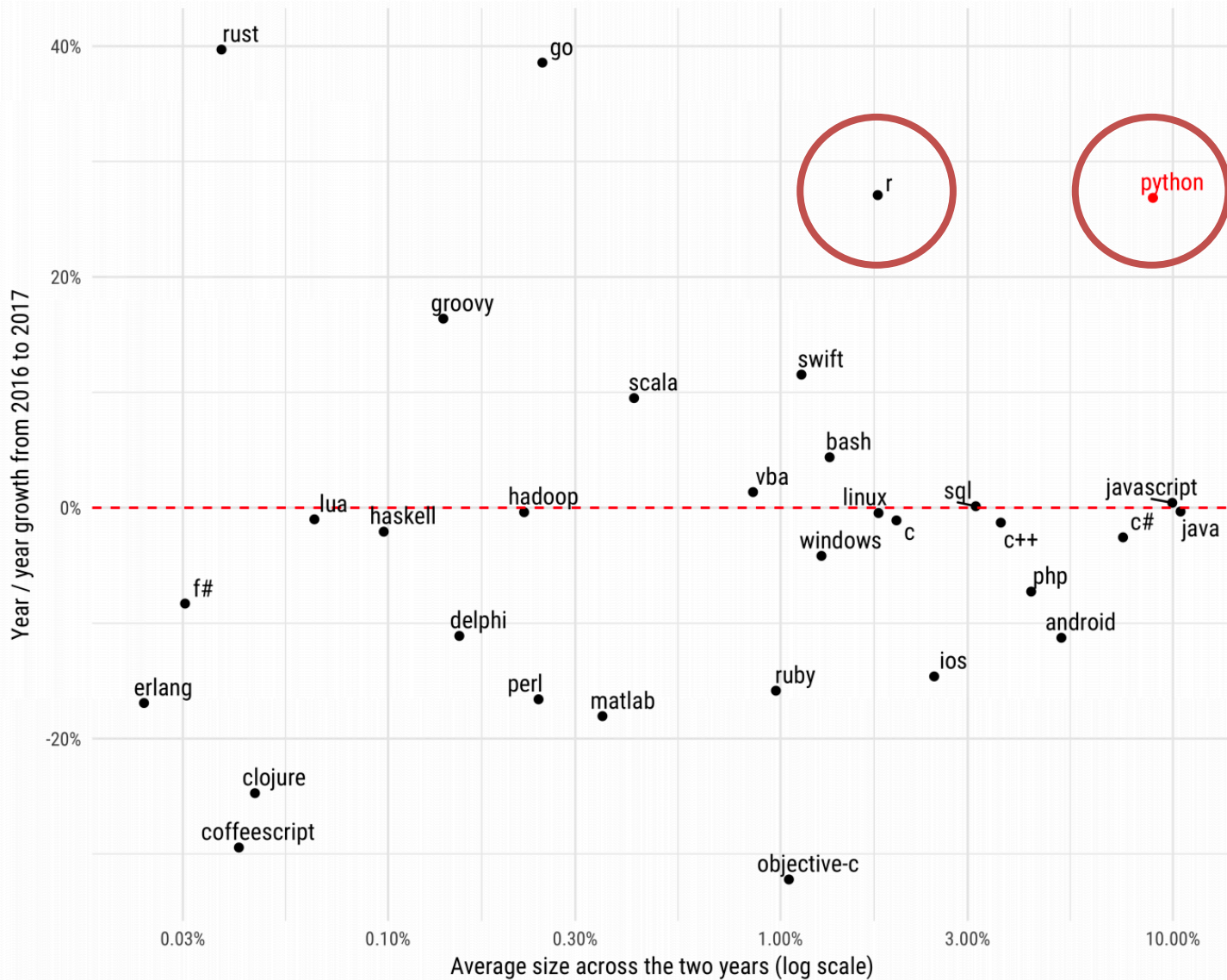
Growth of major programming languages

Based on Stack Overflow question views in World Bank high-income countries



Year over year growth in traffic to programming languages/platforms

Comparing question views in January-August of 2016 and 2017, in World Bank high-income countries. TypeScript had a growth rate of 142% and an average size of .36%; and was omitted.



Python has many applications

- Web development
- Application development
- Computer graphics
- Scientific computing
 - Bioinformatics
 - Machine learning
 - Simulations

<https://www.python.org/about/quotes/>

Jupyterhub

Please choose one of the following applications:

- [RStudio](#)
- [Jupyterhub](#) ←

Jupyterhub



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Jupyterhub

 jupyter Untitled (unsaved changes)




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Trusted

Python 3 



```
In [1]: print("Hello World!")
```

```
Hello World!
```

```
In [ ]:
```

Counting like a computer scientist

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ...

Indexing in Python

P	y	t	h	o	n
0	1	2	3	4	5

Indexing in Python

P	y	t	h	o	n
0	1	2	3	4	5

```
In [1]: x="Python"
```

```
In [2]: x[0]
```

```
Out[2]: 'P'
```

Indexing in Python

P	y	t	h	o	n
0	1	2	3	4	5

```
In [1]: x="Python"
```

```
In [2]: x[1:4] ← We index from the first element to
```

```
Out[2]: 'yth'           one past the last element
```

Indexing in Python

P	y	t	h	o	n
0	1	2	3	4	5

```
In [1]: x="Python"
```

```
In [2]: x[3:] ← Missing number means "to the end"
```

```
Out[2]: 'hon'
```

We can also index in reverse

P	y	t	h	o	n
-6	-5	-4	-3	-2	-1

We can also index in reverse

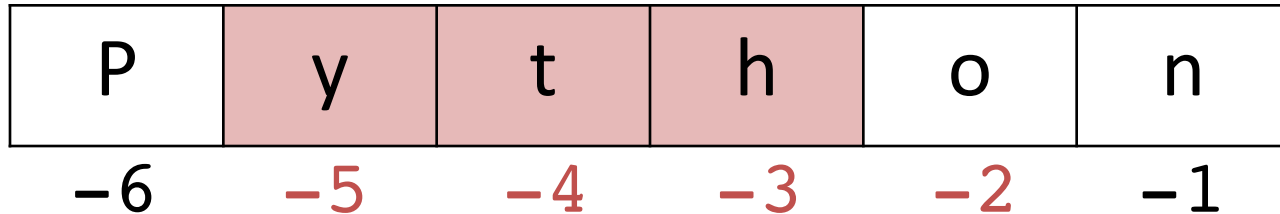
P	y	t	h	o	n
-6	-5	-4	-3	-2	-1

```
In [1]: x="Python"
```

```
In [2]: x[-6]
```

```
Out[2]: 'P'
```

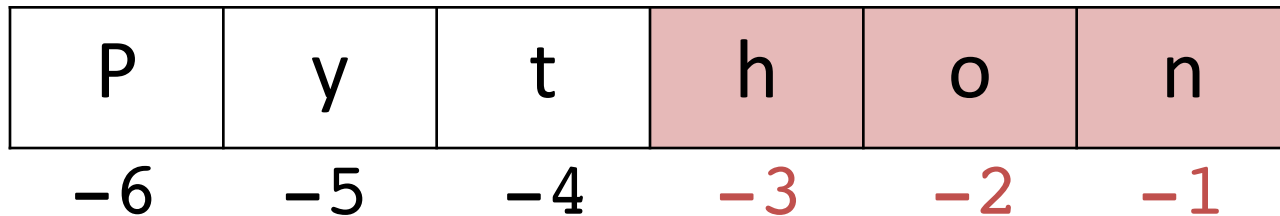
We can also index in reverse



```
In [1]: x="Python"
```

```
In [2]: x[-5:-2] ← Again, we index one  
Out[2]: 'yth'      past the last element
```

We can also index in reverse



```
In [1]: x="Python"
```

```
In [2]: x[-3:] ← This captures the last 3 characters
```

```
Out[2]: 'hon'
```