Part II: Python
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/
Please choose one of the following applications:

- RStudio
- Jupyterhub
Jupyterhub

Files  Running  Clusters

Select items to perform actions on them.

- /  Name  Last Modified  File size
-  R  a month ago
-  worksheets  a month ago
In [1]: print("Hello World!")

Hello World!
Counting like a computer scientist

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

<table>
<thead>
<tr>
<th>P</th>
<th>y</th>
<th>t</th>
<th>h</th>
<th>o</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Indexing in Python

```
In [1]: x="Python"
In [2]: x[0]
Out[2]: 'P'
```
Indexing in Python

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

In [2]: x[1:4]   # We index from the first element to one past the last element
Out[2]: 'yth'
```
Indexing in Python

In [1]: x="Python"

In [2]: x[3:] ← Missing number means “to the end"
Out[2]: 'hon'
We can also index in reverse

<table>
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</thead>
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<td>−5</td>
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<td>−2</td>
<td>−1</td>
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</tbody>
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We can also index in reverse

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In [1]: x="Python"
In [2]: x[-6]
Out[2]: 'P'
We can also index in reverse

<table>
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</table>

In [1]: `x="Python"

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

Out[2]: `'yth'`
We can also index in reverse

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</tr>
</tbody>
</table>

In [1]: x="Python"

In [2]: x[−3:] ← This captures the last 3 characters
Out[2]: 'hon'