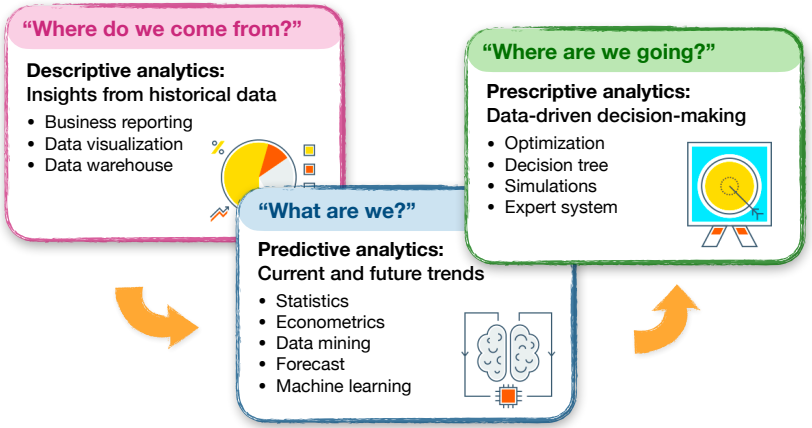
Python Programming for Business Analytics

NUS National University of Singapore | NUS BUSINESS SCHOOL

What is Business Analytics?

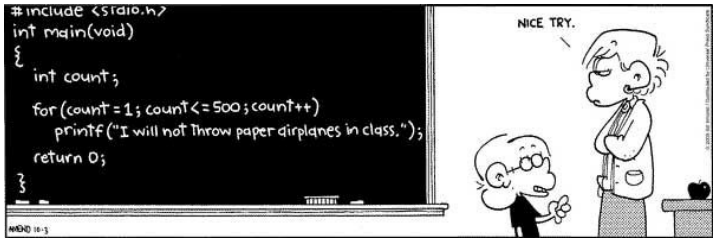
Business Analytics



Why Python?

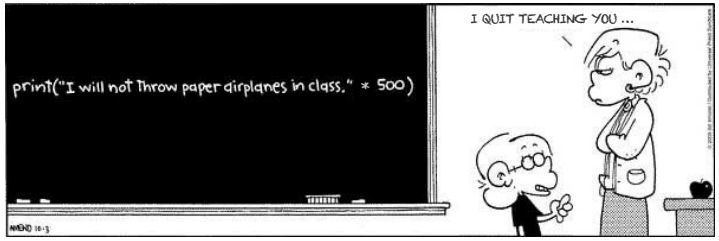
Python is the Best

- Evolution of programming
  - C language (1980s)



Python is the Best

- Evolution of programming
  - Python



Python is the Best

- Evolution of programming
  - Python

If you ask Python programmers what they like most about Python, they will often cite its high readability. Indeed, a high level of readability is at the heart of the design of the Python language, following the recognized fact that code is read much more often than it is written.

```
In [1]: print("I will not throw paper airplanes in class.\n" * 500)
I will not throw paper airplanes in class.
I will not throw paper airplanes in class.
I will not throw paper airplanes in class.
I will not throw paper airplanes in class.
```

Python is the Best

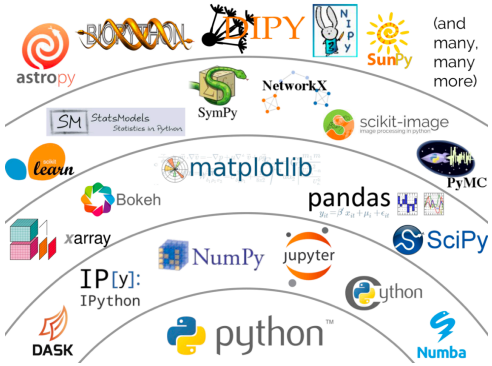
- Being “Pythonic”: good style of writing code
  - PEP 8: Style Guide for Python Code
  - The Zen of Python

```
In [3]: import this
The Zen of Python, by Tim Peters

Beautiful is better than ugly.
Explicit is better than implicit.
Simple is better than complex.
......
Readability counts.
Special cases aren't special enough to break the rules.
......
If the implementation is hard to explain, it's a bad idea.
If the implementation is easy to explain, it may be a good idea.
Namespaces are one honking great idea -- let's do more of those!
```

Python is the Best

- The Python universe



Python is the Best

- The Python universe

The usefulness of Python for data science stems primarily from the large and active ecosystem of third-party packages: NumPy for manipulation of homogeneous array-based data, Pandas for manipulation of heterogeneous and labeled data, SciPy for common scientific computing tasks, Matplotlib for publication-quality visualizations, IPython for interactive execution and sharing of code, Scikit-Learn for machine learning, and many more tools that will be mentioned in the following pages.

Learning Materials

- Jupyter notebook files for learning and practice
- Jupyter notebook files for exercises
- Slides as supplementary materials

Data Visualization Applications

- Map of the blue death
- How the circle line rogue train was caught with data