



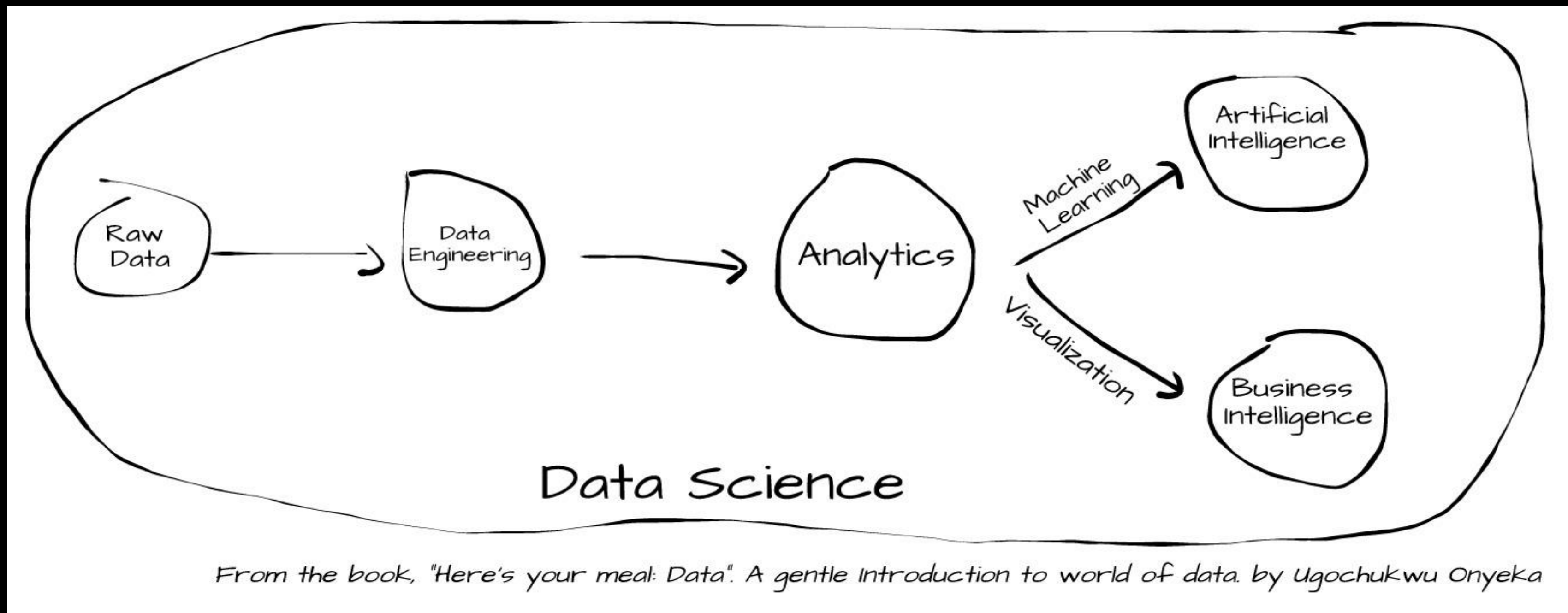
Python for Data Analysts

Module 1

www.blackindata.co.uk

A short intro to analytics

A bird's eye view of the world of data





Analytics is where it all happens

- Analytics is the most important process in data science value chain. Without analytics, both humans and computers cannot make sense of data.
- Various analytical tools have limitations:
 - a) Excel: Spreadsheet. Not suitable for analytics for machine learning. Also pales in performance when there is large data.
 - b) Power BI: Visualization tool. Same limitations as Excel
 - c) Tableau: Same problems as Power BI

Aren't there other tools?



- Other tools for analytics exist. Many of them are drag and drop but these products are very expensive.
- They are provided using the SaaS business model.
- Open source to the rescue. There are a lot of open source (free-to-use) tools and these are usually programming languages.



Why do we use programming languages in analytics?

- Cost effectiveness.
- General availability.
- Transferability of skills

Why Python?

- Low entry barrier
- Presence of libraries

	A	B	C
1	Name	Salary (\$)	
2	Brenda	10,000.00	
3	James	15,000.00	
4	Rita	20,000.00	
5	Mike	25,000.00	
6		=SUM(B2:B5)	
7			

```
Sub TestSumMultipleRanges()
    Dim rngA As Range
    Dim rngB as Range
    'assign the range of cells
    Set rngA = Range("D2:D10")
    Set rngB = Range("E2:E10")
    'use the range in the formula
    Range("E11") = WorksheetFunction.SUM(rngA, rngB)
    'release the range object
    Set rngA = Nothing
    Set rngB = Nothing
End Sub
```

Image credits: <https://www.automateexcel.com/vba/sum-function/>

What is programming?

- The act of processing data through a computer by giving the computer a list of steps to follow.
- The computer never does anything without programming. The User Interface of an app e.g. Excel might mask what is going on under the hood, but programming is inevitable.



Is programming hard?

- Programming is simple but not easy. Simple in the sense that every act of programming has just a few key underlying concepts.
- In programming, once you get the concepts, what's left is just syntax.

Download and Installation

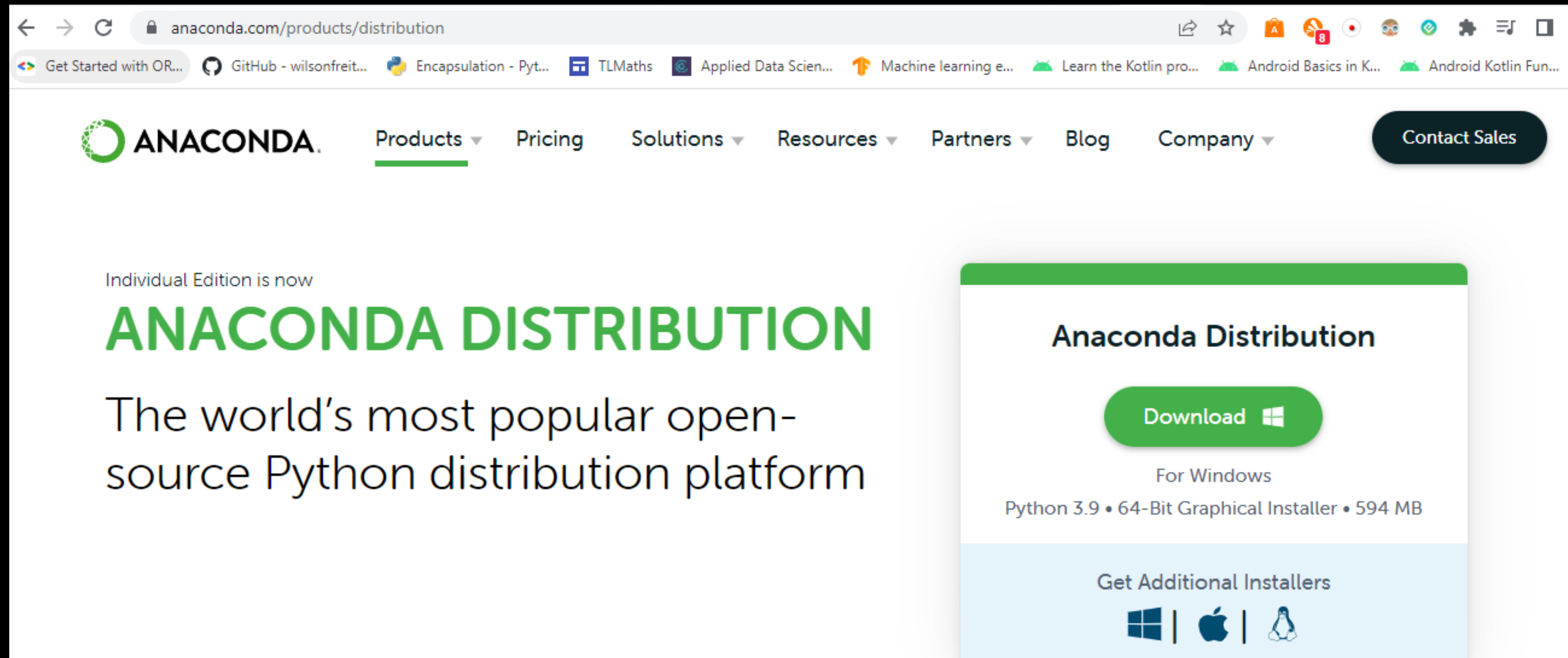
- Option A (Batteries not included)

A screenshot of the Python.org/downloads/ page. The browser's address bar shows 'python.org/downloads/'. The page has a dark blue header with the Python logo and 'python™' text. To the right of the logo is a yellow 'Donate' button, a search bar with a magnifying glass icon, a 'GO' button, and a 'Socialize' button. Below the header is a navigation bar with buttons for 'About', 'Downloads', 'Documentation', 'Community', 'Success Stories', 'News', and 'Events'. The main content area features the heading 'Download the latest version for Windows' in yellow. Below this heading is a yellow button that says 'Download Python 3.10.7'. Underneath the button, it says 'Looking for Python with a different OS? Python for Windows, Linux/UNIX, macOS, Other'. To the right of the text is an illustration of two yellow and white striped parachutes.

Download and Installation

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- Option B (Batteries included)



The screenshot shows the Anaconda website's 'Products' page. The header includes the Anaconda logo, navigation links (Products, Pricing, Solutions, Resources, Partners, Blog, Company), and a 'Contact Sales' button. The main content area features the text 'Individual Edition is now' followed by 'ANACONDA DISTRIBUTION' in large green letters. Below this, it states 'The world's most popular open-source Python distribution platform'. On the right, a white box with a green header 'Anaconda Distribution' contains a green 'Download' button with a Windows icon. Below the button, it specifies 'For Windows' and 'Python 3.9 • 64-Bit Graphical Installer • 594 MB'. At the bottom of this box, a light blue section titled 'Get Additional Installers' shows icons for Windows, Apple, and Linux.

anaconda.com/products/distribution

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Writing code in Python

Python installation on your local machine

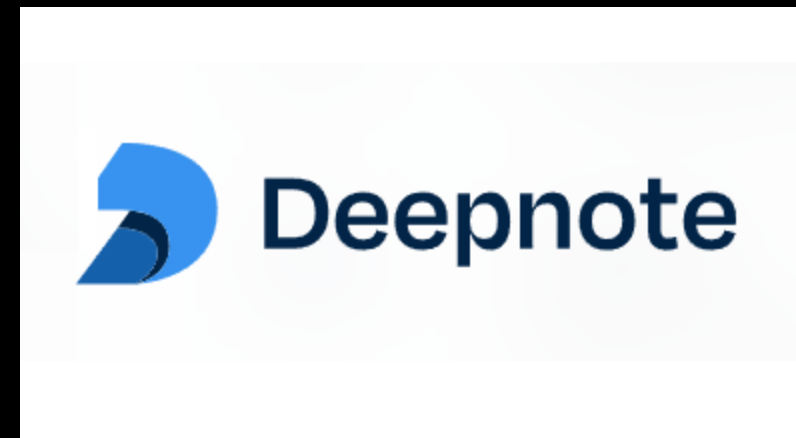


Visual Studio Code



Writing code in Python

Python installation on the cloud





<https://github.com/BiD-on-Git>