

Introduction to Python

What is Python?

Made by Guido van Rossum in 1991, Python is a general-purpose, high-level programming language that emphasises code readability that consistently ranks as one of the most popular programming languages for beginners and professionals alike.

What can you do with Python?

- Data analysis
- Data visualisation
 - Example [Uber Ridesharing in NYC Visualisation built with Streamlit](#)
 - See the [streamlit gallery](#) for more examples, although you can create visualisation dashboards with many other libraries.
- Statistics and machine learning
- Web development
 - Built with django web framework: [The National Geographic website](#)
- Automation or scripting of everyday tasks

Why Python?

- It has simple syntax that mimics natural language
 - This makes Python **beginner-friendly** and easy to read.
- Its open source
 - This means Python is free to use, built and supported by the developer community, without any corporate interest.
- It has a large and active online community supporting and extending Python to suit many usecases
 - This makes Python a very **stable** language.
 - This makes Python very **versatile** (Python has a large array of useful modules and libraries that add functionality)
 - This also makes it very **easy to find support** for learning and for troubleshooting online.
 - Python is a **popular, in-demand** professional skill.
- Python is a **high-level** language
 - This combined with its simple syntax means that it takes less code to make big projects a reality.
 - Although this can come at the cost of performance for certain tasks
- Python is a **multi-paradigm** language
 - This means you have the ability to code in multiple ways and doesn't box you into one programming paradigm.
- Here is the [2023 Stack Overflow Developer survey](#).

What do you think this code below does?

```
consultants = {  
    "Ada": {"homework_done": True},  
    "Marie": {"homework_done": True},  
    "Linus": {"homework_done": False},  
    "Guido": {"homework_done": True},  
}  
  
for consultant_name, info in consultants.items():  
    if info["homework_done"] is False:  
        print(f"""  
            Dear {consultant_name},  
            Please remember to hand in your git homework.  
            Many thanks,  
            Gareth  
            """)  
    )
```

Hello World

Hello World in Python

```
print("hello world")
```

Hello World in Java

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