



## **Introduction to Data Analytics (Weeks 1 & 2)**

Building practical, real-world data skills

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# WHAT IS ASTON DATA ACADEMY?

Aston Data Academy is a practical data analytics training programme designed for:

- Beginners with no technical background
- Career changers looking to move into data roles
- Professionals who want to understand and work with data confidently

The focus is practical learning, not theory overload. You will learn skills that are used in real jobs, with guidance, projects, and support.



Learning



Mentoring



Projects



Career Growth

# WHAT IS DATA

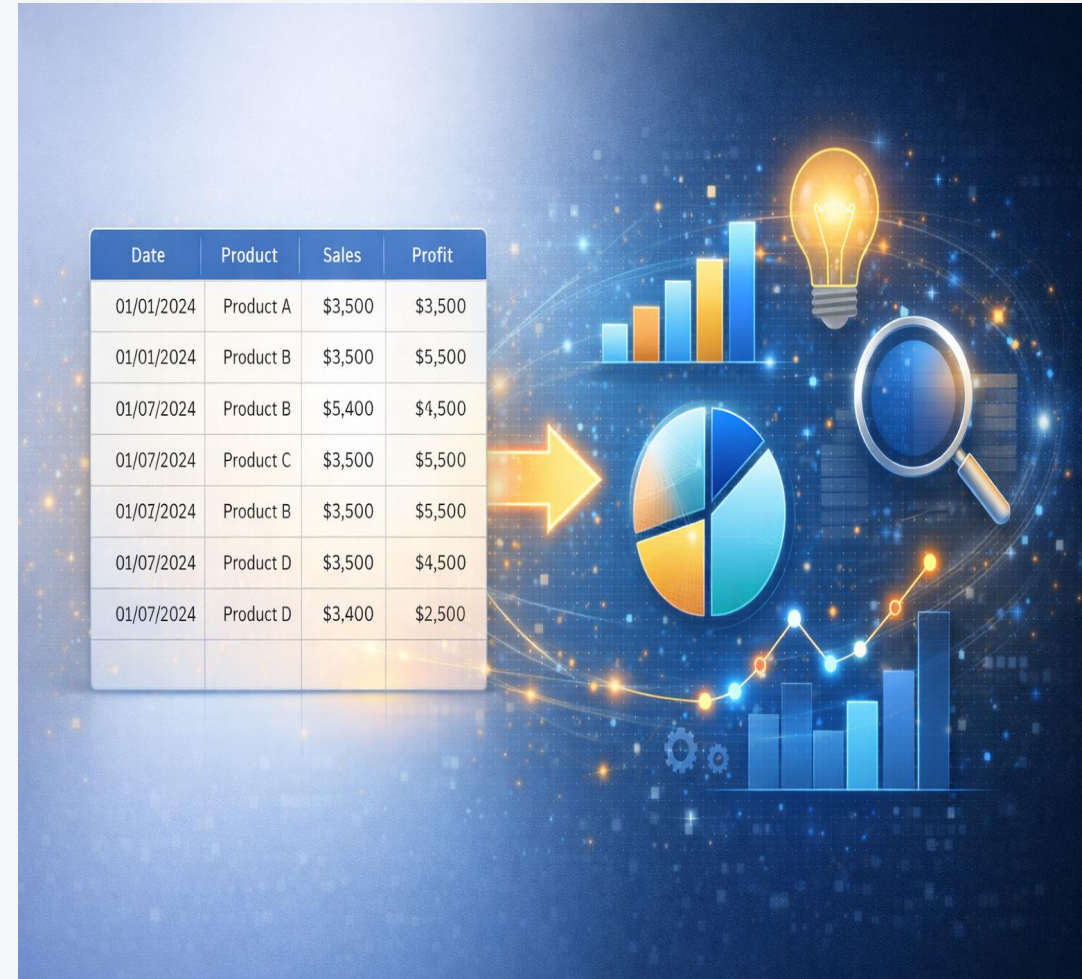
## Understanding Data

Data is information collected to understand situations, patterns, or outcomes.

Examples:

- Sales figures,
- Customer details,
- Survey responses,
- Website visits,
- Financial records.

Data on its own means very little until it is analysed.



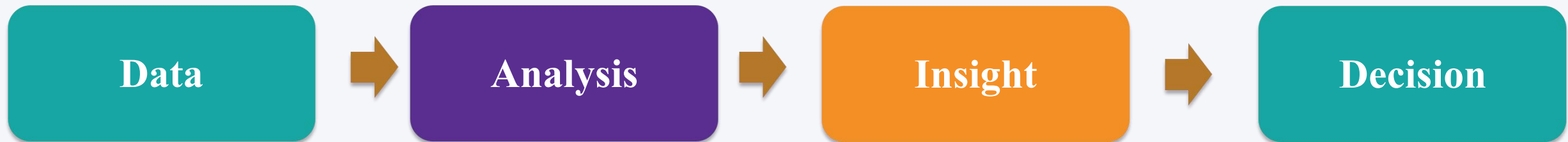
# WHAT IS DATA ANALYTICS

## What Does Data Analytics Mean

Data Analytics is the process of:

- Collecting data
- Cleaning and organising data
- Exploring patterns and trends
- Answering questions using data
- Supporting decisions with evidence

It is about understanding what the data is telling us, not just looking at numbers.



# WHAT DOES A DATA ANALYST

## The Role of a Data Analyst

A Data Analyst:

- Works with data from different sources
- Cleans and prepares messy data
- Analyses data to answer business questions
- Creates reports and dashboards
- Communicates insights clearly to others

Communication is just as important as technical skills



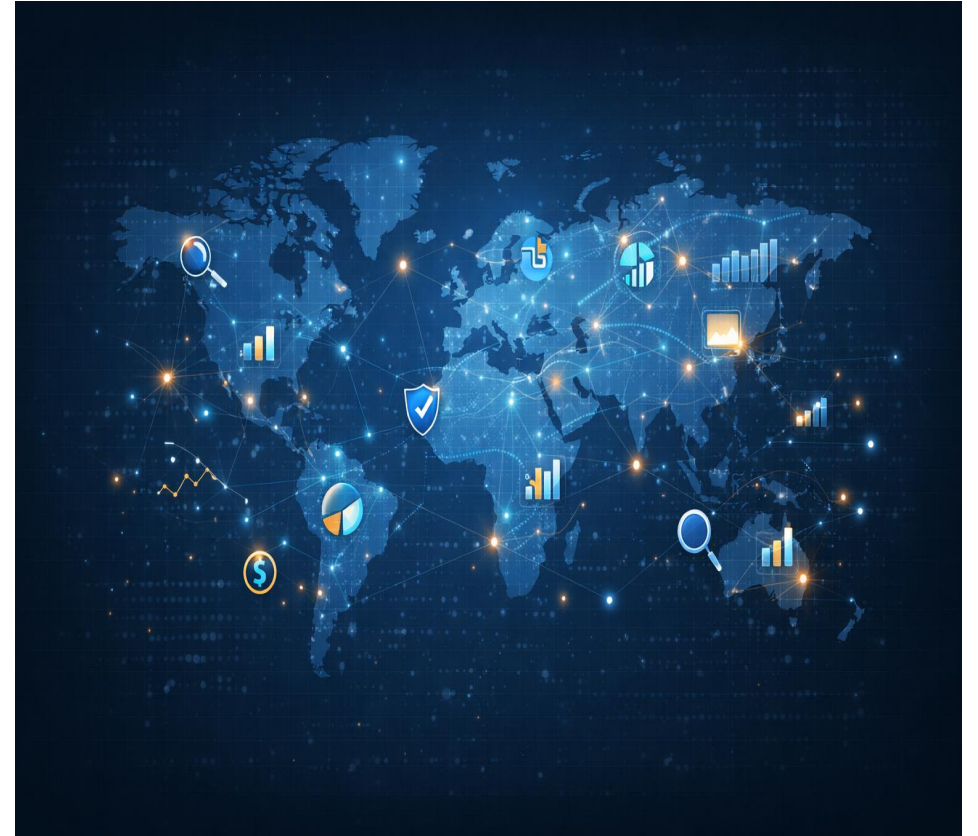
# WHERE DATA ANALYSTS WORK

## Industries That Use Data Analysts

Data Analysts work across many industries, including:

- Finance
- Technology
- Healthcare
- Marketing
- Government
- Startups and large organisations

Data analytics skills are globally relevant and transferable.



# TOOLS WE WILL USE IN THIS PROGRAMME

## Core Tools for Data Analytics

Throughout this programme, we will use tools that are:

- Beginner-friendly
- Widely used in industry
- Accessible to everyone

**The main tools include:**

- Excel/Spreadsheets/WPS
- SQL (MySQL Workbench)
- Data Visualisation tools (Power BI/Tableau)
- Real world datasets (Kaggle)



# SPREADSHEETS (EXCEL/WPS)

## Working With Excel/Spreadsheets/WPS

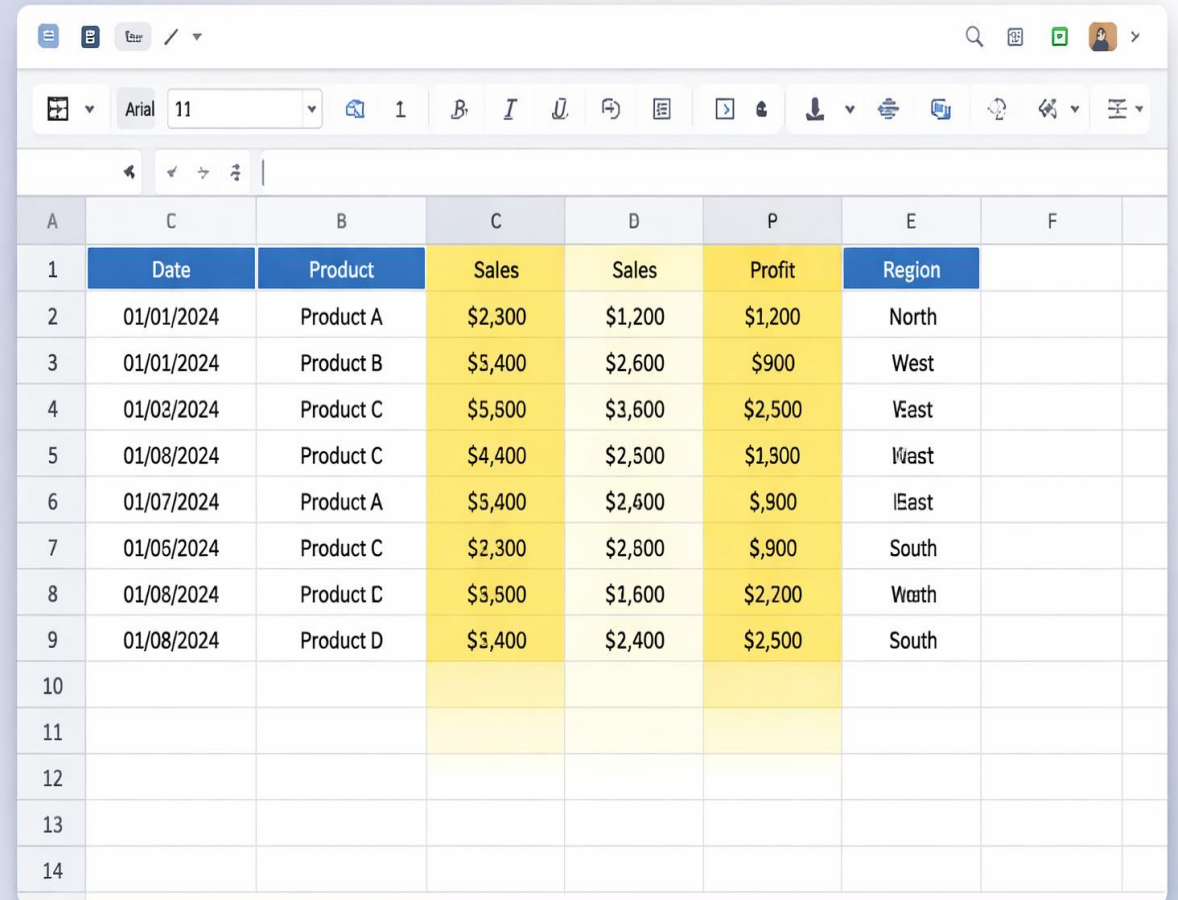
Spreadsheets are often the first step in data analysis.

You can use:

- Microsoft Excel
- WPS Spreadsheet (free alternative)
- Google Sheets

Spreadsheets are used for:

- Cleaning data
- Sorting and filtering
- Basic analysis
- Simple visualisations



The screenshot shows a spreadsheet application interface with a data table. The table has columns labeled Date, Product, Sales, Profit, and Region. The data is as follows:

	C	B	C	D	P	E	F
1	Date	Product	Sales	Sales	Profit	Region	
2	01/01/2024	Product A	\$2,300	\$1,200	\$1,200	North	
3	01/01/2024	Product B	\$5,400	\$2,600	\$900	West	
4	01/03/2024	Product C	\$5,600	\$3,600	\$2,500	East	
5	01/08/2024	Product C	\$4,400	\$2,500	\$1,300	West	
6	01/07/2024	Product A	\$5,400	\$2,600	\$900	East	
7	01/05/2024	Product C	\$2,300	\$2,800	\$900	South	
8	01/08/2024	Product C	\$3,500	\$1,600	\$2,200	West	
9	01/08/2024	Product D	\$3,400	\$2,400	\$2,500	South	
10							
11							
12							
13							
14							

# WHAT IS SQL

## Understanding SQL

SQL stands for Structured Query Language

SQL is used to:

- Work with data stored in databases
- Retrieve specific data
- Filter, sort, and summarise large datasets
- Answer questions quickly and efficiently

SQL is One of the most important skills for data analysts



# WHY WE USE MYSQL WORKBENCH

## Learning SQL the Simple Way

In this programme, we will primarily use MySQL Workbench so that you gain hands-on experience with a real database environment. This helps you :

- Understand how database work in real world settings.
- Connect to servers and manage data properly.
- You Build skills that employers actually use.

The skills learned here apply directly to tools like MySQL, PostgreSQL, and SQL Server

# EXTRA PRACTICE TOOLS

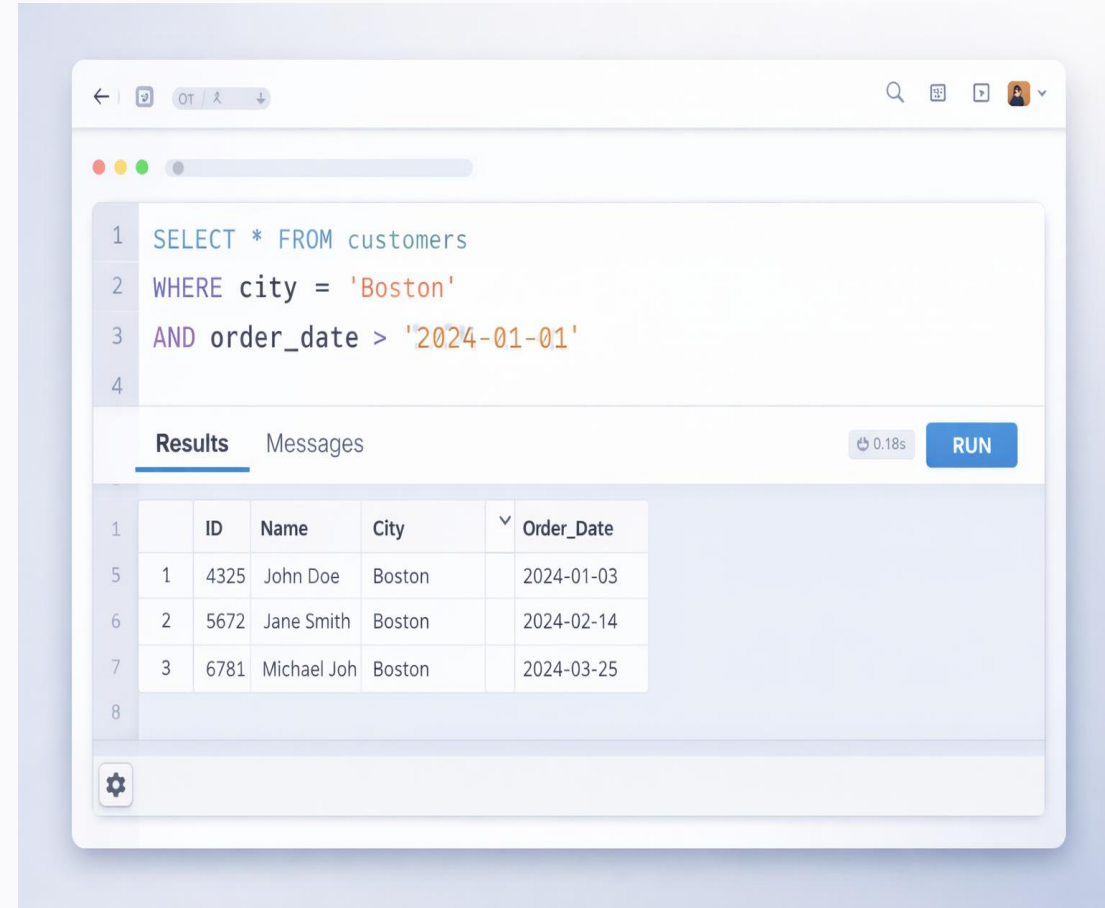
## Recommended Online SQL Editors

In your free time, you can also use online SQL editors such as:

- SQLBolt — <https://sqlbolt.com>
- SQLite Online — <https://sqliteonline.com>
- Mode SQL Tutorial — <https://mode.com/sql-tutorial>
- Analyst Builder — <https://www.analystbuilder.com>

These tools are:

- Free
- Browser-based
- Beginner-friendly



# DATA VISUALISATION TOOLS

## Turning Data into insights

We use visualization tools to communicate findings clearly.

### Main tools:

- Power BI (Windows users)
- Tableau (Mac / iOS users)

Visualisations help stakeholders understand data quickly

### Note:

Mac users can follow Power BI concepts and practise with Tableau



# DATASETS FOR PRACTICE

## Where Our Data Comes From

All practice datasets are:

- Real-world datasets
- Cleaned and prepared by the tutor
- Based on realistic business scenarios

Most datasets are sourced from Kaggle, a popular data platform.

You will be shown how to find and download datasets for personal practice.



# HOW THE PROGRAMME WILL RUN

## What to Expect Each Week

### **From Week 3 onward:**

- Each session includes a practical exercise
- Final 30 minutes are hands-on practice
- You will practice what you learn
- Small tasks may be submitted for feedback

Lecture notes will be shared after each session

# LEARNING SUPPORT & EXPECTATIONS

## Support and Learning Approach

- Tools reminders shared in the WhatsApp group
- Questions are encouraged
- Progress matters more than perfection
- Everyone learns at their own pace

This is a safe space to learn



# LOOKING AHEAD

## What Comes Next

### After Weeks 1 & 2:

Deeper work with Excel

- Structured SQL practice
- Real data analysis projects
- Portfolio development
- Career preparation

You are building skills step by step.

