

# EXPLORE || DIGITAL SKILLS

## Visualisation for Data Science Introduction

## Overview

This tutorial is laid out as follows:

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In this tutorial, we will be giving you a high level overview of the content covered in the **Visualisation for Data Science Digital Skill**.

The **main objective of this overview** is to ensure that you have a good understanding of what is to come, how the digital skill is broken down, and what is in and out of scope for our upcoming learning. Let's dive in!

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# Overview of Power BI

Using Data in Power BI

A Framework for Producing World-Class Visuals

Data Manipulation and Data Engineering in Power BI

Creating and Formatting Visuals in Power BI





Dashboarding Best Practise





# Overview of Power BI

This section is a high-level overview of the business intelligence software, Power BI

Area Touched On	Brief Explanation
 Installing Power BI	In this section, we will walk you through the installation process of Power BI step by step.
 The basics of Power BI	After installing Power BI, we will go through some general features specific to Power BI. The aim here is to familiarise yourself with the software concepts.
 Generating basic graphs in Power BI	From there, we will go into a guided basic example of connecting to a data source and generating a few basic visualisations.
 Create calculated columns in Power BI	Finally, we will dive into simple examples of creating new columns, calculated columns and measures using DAX code.

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# Using Data in Power BI

This section is about loading data into Power BI and creating relationships between various data sources

## In the context of

### Loading Data Into Power BI

### Setting Up the Data Model in Power BI

## What do we do?

1

#### Loading Excel Data into Power BI

Here you will load different Excel files into Power BI and change the data types of the relevant features/columns.

2

#### Data Relationships in Power BI

An overview of different types of data relationships (cardinality) in Power BI, and how and where to access the relevant relationships between two tables.

3

#### Entity Relationship Diagrams in Power BI

Setting up a relationship between relevant features in the uploaded dataset by specifying cardinality and filtering direction.



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# C.I.N.D.Y Framework for Creating Visuals

In this section, we introduce you to C.I.N.D.Y - a framework that will guide you in creating efficient and effective visuals when working with different data types.



C.I.N.D.Y is an acronym for **C**ategorical, **I**dentifier, **N**umerical, **D**ate and Geo-spatial (x-**Y** coordinates). These are some of the frequent data types that you will work with when creating BI dashboards. If applied correctly, this framework will simplify the creation of neat and clearly interpretable visualisations. In introducing you to the C.I.N.D.Y framework, we will deep dive into the following:

- What type of plots should be used for categorical data?
- Best practise when plotting categorical data.
- Things to keep in mind when plotting categorical data.
- Use cases for categorical data.
- Introduction to histogram plots when using numerical data.
- Interpreting a histogram when using numerical data.
- Effects of outliers on histogram plot.
- Introduction to Box plots when using numerical data.
- The 5 number summary of box plots.
- Best practices when working with *date* data types.



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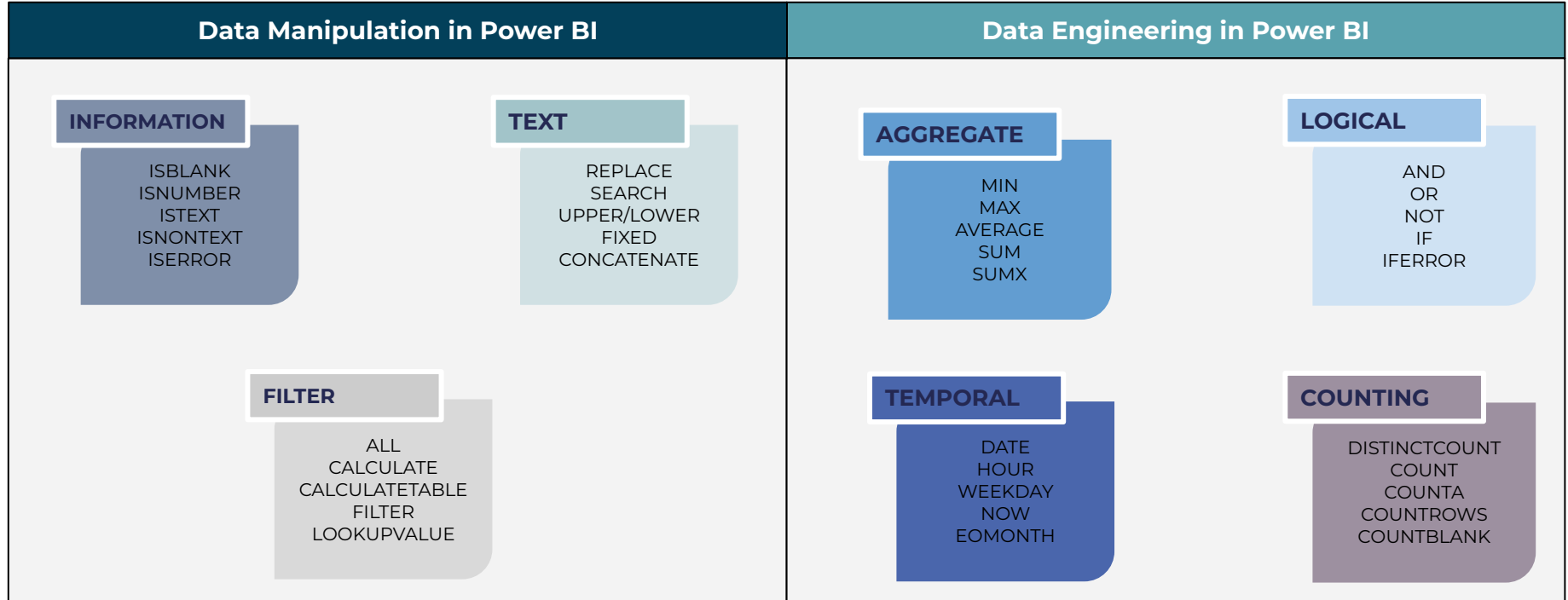
**Data Manipulation and Data Engineering in Power BI**

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# Manipulating Data and Data Engineering in Power BI

Here we learn how to use DAX, calculated columns, and measures to format data and engineer new features in Power BI.





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# Creating and Formatting Visuals in Power BI

In this section, we focus on beautifying our generated visuals with various formatting techniques. We also discuss one of Power BI's most powerful capabilities - data filtering.

## Filters

- Introduction to **filters** in Power BI
- How to set-up filters in Power BI

## Types of Visuals

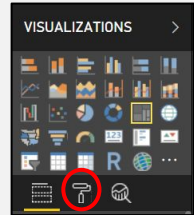
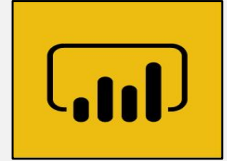
**We will dive into the following types of visuals in Power BI:**

- Filter
- Table
- Card
- Line Chart
- Column Chart
- Bar Chart
- Scatter Chart
- Treemap

## Formatting

Introduction to filtering visuals in Power BI. This includes:

- Visual titles, color, fonts, size, position etc.
- Rounding
- Data labels



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# Dashboarding Best Practise

In this section we review:

1

Ways to keep visuals relevant to your audience

2

Ways to group relevant data

3


How not to clutter visuals and reports

4

How to avoid overlaying graphs

5

How to correctly format a report



We provide visual examples to clearly draw contrast between the mentioned do's and don'ts of dashboard building.