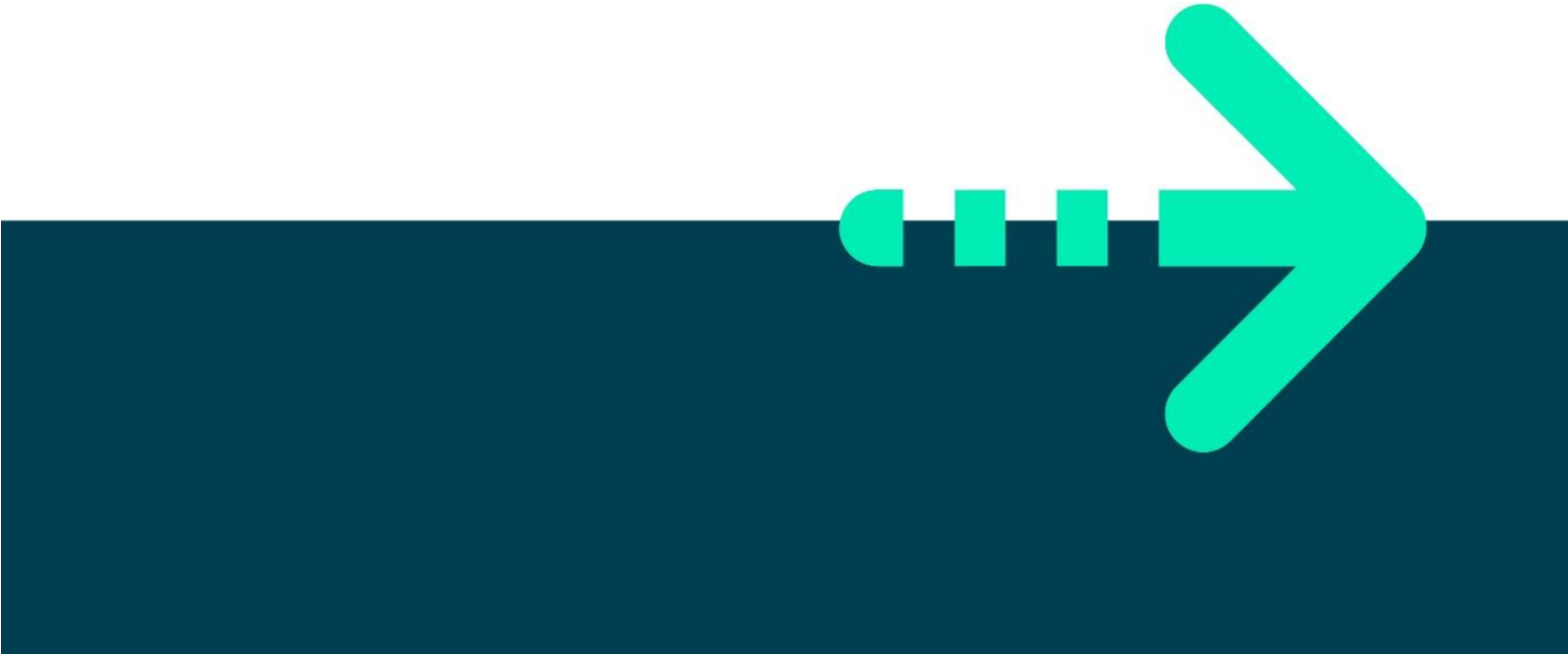
Joins Playground

Learner Guide



CONTENTS

How to Use This Workbook 3
Introduction 4
Objectives 4
Activity on formulas and functions 4

How to Use This Workbook

Activity

Alongside this icon you'll find details of the group/individual activity or a point for everyone to discuss.

Useful Tool

This icon indicates a technique that will help you put what you learn into practice.

Important Idea or Concept

Generally, this icon is used to draw your attention to ideas that you need to understand by this point in the course. Let your trainer know if you do not understand or see the relevance of this idea or concept.

Helpful Hint

This icon guides you to tips or hints that will help you avoid the standard pitfalls that await the unwary practitioner or to show you how you might increase your effectiveness or efficiency in practising what you have learnt.

Key Point

This icon is used to indicate something that practitioners in this field should know. It's likely to be one of the major things to remember from the course, so check you do understand these key points.

Reference Material

When we have only touched briefly on a topic this icon highlights where to look for additional information on the subject. It may also be used to draw your attention to International or National Standards or Web addresses that have interesting collections of information.

Definition

Where a word with a very specific definition (or one that could be described as jargon) is introduced this will highlight that a definition is provided. (These words will also be found in the Glossary at the back of the workbook.)

Warning

This icon is used to point out important information that may affect you and your use of the product or service in question.

Introduction

Joins are often used when working with relational databases or when there is a requirement to join datasets for analysis.

Joining tables can be done by taking several (or all) rows from two or more tables and joining them together into a single output table.

Your task is to apply join theory to two tables to create single tables.

Objectives

The objectives of this activity are to:

- Demonstrate an understanding of join theory in relation to the four main joins:
    - Left join
    - Right join
    - Inner join
    - Full (outer) join
- Apply join theory to join two conceptual tables to create a single table.

Joins

Refer to the document **Guide to Joins**, which explains the logic and application behind each of the four main joins (left, right, inner, and full outer).

Activity on Joins

Task – Joins Playground

You have been tasked to demonstrate and apply join theory to two small tables of data and 4 single tables after applying:

- A left join
- A right join
- An inner join
- A full outer join

Objective: Apply conceptual join theory to two small tables of data to create a single table after each join.

Parts of the activity requires you to carry out a task, parts of the activity require you to answer questions.

Within the activity, you are tasked with joining the two tables, **Customer** and **Order**, using the various joins to create single tables.

The tables are structured and populated with data as below:

Table Customer
(Left Table)

OrderID	Surname	Firstname
1	Smith	John
2	Johnson	Jane
3	Williams	Robert
4	Davis	Emily
5	Wilson	Sarah
6	Anderson	Michael
7	Taylor	Jessica
8	Harris	David

Table Order
(Right Table)

OrderNum	Surname	OrderTotal
1	Smith	150
2	Johnson	200.5
3	Williams	75.2
4	Davis	300
NULL	Wilson	120.75
6	Anderson	90.5
7	Taylor	NULL
8	Harris	250.8

Independent activity:
Apply a left, right, inner, and full outer join to the tables

1. Open the **Joins Playgound.XLSX workbook** and familiarise yourself with the structure of the activity.
2. **Carry out a left join:**
    - Explain what a left join does and answer in the answer space provided in the **Activity** worksheet.
    - Use your own knowledge and understanding of left joins to join the two tables together and create one table. Record the output of the left join in the worksheet **Left Join**.
    - Record the number of rows and incomplete rows in the answer space provided in the **Activity** worksheet.
3. **Carry out a right join:**
    - Explain what a right join does and answer in the answer space provided in the **Activity** worksheet.
    - Use your own knowledge and understanding of right joins to join the two tables together and create one table. Record the output of the right join in the worksheet **Right Join**.
    - Record the number of rows and incomplete rows in the answer space provided in the **Activity** worksheet.
4. **Carry out an inner join:**
    - Explain what an inner join does and answer in the answer space provided in the **Activity** worksheet.
    - Use your own knowledge and understanding of inner joins to join the two tables together and create one table. Record the output of the inner join in the worksheet **Inner Join**.
    - Record the number of rows and incomplete rows in the answer space provided in the **Activity** worksheet.
5. **Carry out a full (outer) join:**

- Explain what a full join does and answer in the answer space provided in the **Activity** worksheet.
- Use your own knowledge and understanding of full joins to join the two tables together and create one table. Record the output of the full join in the worksheet **Full Join**.
- Record the number of rows and incomplete rows in the answer space provided in the **Activity** worksheet.

6. **Optional Challenge: Join the tables using Power Query:**
    - Use the **Power Query merge function** to create four single tables after applying a left join, a right join, an inner join, and a full (outer) join.
    - After you have created four single tables, check the output against your own conceptual tables.

Reference Material:
Join tables with Power Query

https://support.microsoft.com/en-us/office/merge-queries-and-join-tables-cbd17828-7a50-4dc6-9aac-20af4ef6d8a6

7. **Save your MS Excel file.**