Practise combining datasets in Exce
(Answers)
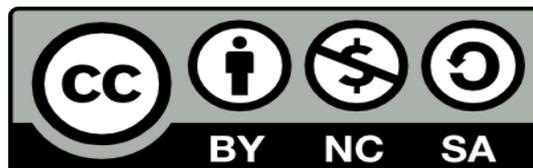
Worksheet section	Contents
1	Appending
2	Left join
3	More joins

Note

The datasets needed to answer the questions in this workbook are in the green tabs. They have already
Power Query.

This lesson has been created by effini in partnership with The Data Lab.

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under the same

1. Appending

1) We are now going to append the UK CO₂ emissions from 2011 to 2019 following the instructions in the PowerPoint slides 9-12. The datasets have already been loaded into Power Query.

year	co2_emissions
2000	530,890
2001	545,260
2002	530,790
2003	543,040
2004	543,080
2005	540,920
2006	542,060
2007	530,500
2008	515,340
2009	466,490
2010	482,440

year	co2_emissions
2011	445,590
2012	467,780
2013	453,760
2014	415,600
2015	401,080
2016	380,810
2017	367,000
2018	360,730
2019	348,920

A summary of the steps you need to follow are,

a) Open the **append** window from the **Data** ribbon

b) Select the datasets from the **drop down lists**

c) Check the dataset, change the **name** of the dataset

d) **Close & Load** the dataset back into the Excel workbook

Dataset 1:   CO2_2000_2010

Dataset 2:   CO2_2011_2019

Once you have appended the rows, copy and paste the final dataset into the space below.

1. Appending

2) The datasets below show the musical instruments famous musicians play. You need to append the musicians who play the drums to the dataset on the left hand side.

musician_name	instrument
Paul Mcartney	bass guitar
John Paul Jones	bass guitar
Bill Wyman	bass guitar
Jimmy Page	guitar
John Lennon	guitar
Keith Richards	guitar
Ronnie Wood	guitar
George Harrison	guitar

musician_name	instrument
John Bonham	drums
Charlie Watts	drums
Ringo Starr	drums

Dataset 1:   intrument_players

Dataset 2:   drum_players

Once you have appended the rows, copy and paste the final dataset into the space below.

3) The datasets below contain the band members of 3 famous bands. You need to append the members of 'The Rolling Stones' to the dataset on the left hand side.

musician_name	band
Jimmy Page	Led Zeppelin
Robert Plant	Led Zeppelin
John Bonham	Led Zeppelin
John Paul Jones	Led Zeppelin
John Lennon	The Beatles
Paul Mcartney	The Beatles
George Harrison	The Beatles
Ringo Starr	The Beatles

musician_name	band
Mick Jagger	The Rolling Stones
Keith Richards	The Rolling Stones
Charlie Watts	The Rolling Stones
Ronnie Wood	The Rolling Stones
Bill Wyman	The Rolling Stones

Dataset 1:   band_members

Dataset 2:   rolling_stones_members

Once you have appended the rows, copy and paste the final dataset into the space below.

2. Left join

1) We are now going to left join the dataset related to the profile of dogs following the instructions in the Powerpoint slides 14 -21. The datasets have already been loaded into Power Query.

Name	max_height
Border Collie	22
Irish Setter	27
Yorkshire Terrier	8
Poodle (Miniature)	15
Boxer	25
Greyhound	30
West Highland White Terrier	11
Cocker Spaniel	16
Great Dane	32
Dalmatian	24
Rottweiler	27
Newfoundland	28

Name	good_with_children	good_with_other_dogs
Border Collie	3	3
Irish Setter	5	5
Yorkshire Terrier	5	3
Boxer	5	3
Greyhound	3	4
West Highland White Terrier	5	3
Cocker Spaniel	5	5
Dalmatian	3	3
Rottweiler	3	3
Newfoundland	5	5

A summary of the steps you need to follow are,

a) Open the **merge window** from the **Data** ribbon
b) Select the datasets from the **drop down lists**
c) **Highlight** the key columns
d) Choose the **join kind**
e) **Expand** the column list
f) **Select the columns** from the right hand dataset
g) **Name** the dataset
h) **Close & Load** the dataset back into the Excel workbook

Left dataset:	dog_height

Right dataset:	dog_good_with

Once you have left joined the datasets, copy and paste the final dataset into the space below.

Below are datasets that related to travellers and details of their destination, accommodation and transporation used on their trip.

traveller_id	traveller_name
74	Kim Nguyen
84	Marco Rossi
54	James MacKenzie
114	Raj Patel
107	Olivia Martin
31	Emily Lee
104	Nisa Patel
66	John Smith

traveler_id	trip_id	destination	start_date	end_date	duration_days	accommodation_type	accommodation_cost	transportation_type	transportation_cost
74	5	Tokyo	09/10/2023	9/17/2023	7	Airbnb	700	Train	200
84	70	Rome	2/14/2025	2/20/2025	6	Hotel	1300	Train	100
54	16	Edinburgh	09/05/2024	09/12/2024	7	Hotel	900	Train	150
114	24	Bangkok	9/15/2023	9/23/2023	8	Hostel	400	Plane	500
107	32	Brazil	09/05/2022	9/14/2022	9	Hostel	150	Bus	50
31	21	New York	11/20/2023	11/25/2023	5	Airbnb	600	Bus	100
104	55	Bangkok	02/01/2024	02/09/2024	8	Hostel	400	Bus	50
66	76	Paris	06/07/2023	6/14/2023	7	Hotel	1200	Plane	700
63	84	Paris	6/15/2021	6/20/2021	6	Hotel	800	Plane	500
39	90	Dubai	01/01/2022	01/08/2022	8	Hotel	1000	Plane	800
92	39	Paris	06/12/2022	6/19/2022	7	Hotel	1400	Plane	600
41	54	Rio de Janeiro	1/15/2024	1/24/2024	9	Airbnb	800	Train	150
78	91	Bangkok	2/14/2022	2/20/2022	7	Airbnb	400	Train	100
76	9	Amsterdam	2/14/2024	2/21/2024	7	Hotel	1200	Train	200

2. Left join

76	9	Amsterdam	2/14/2024	2/21/2024	7	Hotel	1200	Train	200
118	71	Bali	5/21/2025	5/29/2025	8	Resort	1800	Plane	1000
100	99	New York	05/08/2023	5/14/2023	6	Airbnb	800	Car rental	300
72	48	Vancouver	07/10/2022	7/17/2022	7	Hostel	400	Train	150
6	78	Bali	11/12/2023	11/19/2023	7	Resort	600	Plane	700
98	131	Cape Town	06/01/2023	06/10/2023	9	Hostel	3000	Car	2000
10	56	London	3/15/2024	3/23/2024	8	Hotel	1000	Train	200

Left dataset: travellers

Right dataset: trips

2a) You need to find the destinations the people in the left dataset have travelled to. You need to keep **traveller_id** and **traveller_name** from the left dataset and left join **destination** from the right dataset.

First, how many rows and columns to you expect to have in your final dataset?

Rows:

Columns:

2b) Now, left join the **destination** column to the left dataset.
Once you have left joined the dataset, copy and pate the final dataset below.

3a) You need to find out the accommodation type and cost for the travellers in the left dataset. You need to keep **traveller_id** and **traveller_name** from the left dataset and left join **accommodation_type** and **accommodation_cost** from the right dataset.

How many rows and columns to you expect to have in your final dataset?

Rows:

Columns:

3b) Now, left join the **accommodation_type** and **accoundation_cost** column to the left dataset.
Once you have left joined the dataset, copy and pate the final dataset below.

2. Left join

4a) You need to find out how long the trip was from all the travellers in the left dataset. You need to keep **traveller_id** and **traveller_name** from the left dataset and left join **duration** from the right dataset.

How many rows and columns to you expect to have in your final dataset?

Rows:
Columns:

4b) Now, left join the **duration_days** column to the left dataset.
Once you have left joined the dataset, copy and paste the final dataset below.

2. Left join

3. More joins

1) You need to **outer join** the 2 datasets below,

Left dataset: albums

Right dataset: songs

Once you have outer joined the datasets above answer the following questions,

How many columns does the dataset have?

How many rows does the dataset have?

How rows have missing/blank data items?

2) Now you need to **inner join** the 2 datasets below,

Left dataset: albums

Right dataset: songs

Once you have inner joined the datasets above answer the following questions,

How many columns does the dataset have?

How many rows does the dataset have?

How rows have missing/blank data items?

3) You need to **right join** the datasets below.

Left dataset: travellers

Right dataset: trips

Once you have right joined the datasets above answer the following questions,

How many columns does the dataset have?

How many rows does the dataset have?

How rows have missing/blank data items?

4) You need to inner join the datasets below. You need to keep the **traveller_id**, **traveller_name** and the **transporation_type** column.

Left dataset: travellers

Right dataset: trips

Once you have inner joined the dataset, copy and pate the final dataset below.

3. More joins

You are now going to use the datasets you created to answer these questions.

5) Using the dataset you created by inner joining **album** and **songs**, find out how many of the songs were on albums by The Beatles.

Number of songs by The Beatles

6) Using the dataset you created in section 2, question 4b *(Left join duration_days to the travellers dataset)*, find out which traveller stayed on their trip for 9 days.

Name of traveller

7) Using the dataset you created in section 2, question 2b *(Left join destination to the travellers dataset)*, find out where James MacKenzie travelled to.

Destination

year	co2_emissions
2000	530890
2001	545260
2002	530790
2003	543040
2004	543080
2005	540920
2006	542060
2007	530500
2008	515340
2009	466490
2010	482440

year	co2_emissions
2011	445590
2012	467780
2013	453760
2014	415600
2015	401080
2016	380810
2017	367000
2018	360730
2019	348920

traveller_id	traveller_name
74	Kim Nguyen
84	Marco Rossi
54	James MacKenzie
114	Raj Patel
107	Olivia Martin
31	Emily Lee
104	Nisa Patel
66	John Smith

trip_id	destination	start_date	end_date	duration_days	accommodation_type
5	Tokyo	45208	9/17/2023	7	Airbnb
70	Rome	2/14/2025	2/20/2025	6	Hotel
16	Edinburgh	45421	45635	7	Hotel
24	Bangkok	9/15/2023	9/23/2023	8	Hostel
32	Brazil	44690	9/14/2022	9	Hostel
21	New York	11/20/2023	11/25/2023	5	Airbnb
55	Bangkok	45293	45537	8	Hostel
76	Paris	45113	6/14/2023	7	Hotel
84	Paris	6/15/2021	6/20/2021	6	Hotel
90	Dubai	44562	44774	8	Hotel
39	Paris	44901	6/19/2022	7	Hotel
54	Rio de Janeiro	1/15/2024	1/24/2024	9	Airbnb
91	Bangkok	2/14/2022	2/20/2022	7	Airbnb
9	Amsterdam	2/14/2024	2/21/2024	7	Hotel
71	Bali	5/21/2025	5/29/2025	8	Resort
99	New York	45143	5/14/2023	6	Airbnb
48	Vancouver	44841	7/17/2022	7	Hostel
78	Bali	45271	11/19/2023	7	Resort
131	Cape Town	44932	45205	9	Hostel
56	London	3/15/2024	3/23/2024	8	Hotel

trip_id	destination	start_date	end_date	duration_days	accommodation_type

accommodation_cost	transportation_type	transportation_cost	traveler_id
700	Train	200	74
1300	Train	100	84
900	Train	150	54
400	Plane	500	114
150	Bus	50	107
600	Bus	100	31
400	Bus	50	104
1200	Plane	700	66
800	Plane	500	63
1000	Plane	800	39
1400	Plane	600	92
800	Train	150	41
400	Train	100	78
1200	Train	200	76
1800	Plane	1000	118
800	Car rental	300	100
400	Train	150	72
600	Plane	700	6
3000	Car	2000	98
1000	Train	200	10

accommodation_cost	transportation_type	transportation_cost	traveler_id

band	album
The Rolling Stones	Beggar's Banquet
The Rolling Stones	Sticky Fingers
The Rolling Stones	Exile on Main Street
The Beatles	Abbey Road
The Beatles	Revolver
The Beatles	Rubber Soul
The Beatles	Sgt. Pepper's Lonely Hearts Club Band
Led Zeppelin	Led Zeppelin
Led Zeppelin	Led Zeppelin II
Led Zeppelin	Led Zeppelin IV
The Rolling Stones	Goats Head Soup
The Beatles	Let it Be
Pink Floyd	Dark Side of the Moon
Fleetwood Mac	Rumours
T. Rex	Electric Warrior

band	album

album	song
Revolver	Taxman
Revolver	Eleanor Rigby
Revolver	I'm Only Sleeping
Revolver	Love You To
Revolver	Here, There and Everywhere
Revolver	Yellow Submarine
Revolver	She Said She Said
Revolver	Good Day Sunshine
Revolver	And Your Bird Can Sing
Revolver	For No One
Revolver	Doctor Robert
Revolver	I Want to Tell You
Revolver	Got to Get You into My Life
Revolver	Tomorrow Never Knows
Beggar's Banquet	Sympathy for the Devil
Beggar's Banquet	No Expectations
Beggar's Banquet	Dear Doctor
Beggar's Banquet	Parachute Woman
Beggar's Banquet	Jigsaw Puzzle
Beggar's Banquet	Street Fighting Man
Beggar's Banquet	Prodigal Son
Beggar's Banquet	Stray Cat Blues
Beggar's Banquet	Factory Girl
Beggar's Banquet	Salt of the Earth
Abbey Road	Come Together
Abbey Road	Something
Abbey Road	Maxwell's Silver Hammer
Abbey Road	Oh! Darling
Abbey Road	Octopus's Garden
Abbey Road	I Want You (She's So Heavy)
Abbey Road	Here Comes the Sun
Abbey Road	Because
Abbey Road	You Never Give Me Your Money
Abbey Road	Sun King
Abbey Road	Mean Mr. Mustard
Abbey Road	Polythene Pam
Abbey Road	She Came in Through the Bathroom Window
Abbey Road	Golden Slumbers
Abbey Road	Carry That Weight
Abbey Road	The End
Abbey Road	Her Majesty
Led Zeppelin	Good Times Bad Times
Led Zeppelin	Babe I'm Gonna Leave You
Led Zeppelin	You Shook Me
Led Zeppelin	Dazed and Confused
Led Zeppelin	Your Time Is Gonna Come
Led Zeppelin	Black Mountain Side
Led Zeppelin	Communication Breakdown
Led Zeppelin	I Can't Quit You Baby
Led Zeppelin	How Many More Times
Dark Side of the Moon	Speak to Me

Dark Side of the Moon	Breathe
Dark Side of the Moon	On the Run
Dark Side of the Moon	Time
Dark Side of the Moon	The Great Gig in the Sky
Dark Side of the Moon	Money
Dark Side of the Moon	Us and Them
Dark Side of the Moon	Any Colour You Like
Dark Side of the Moon	Brain Damage
Dark Side of the Moon	Eclipse
Rumours	Second Hand News
Rumours	Dreams
Rumours	Never Going Back Again
Rumours	Don't Stop
Rumours	Go Your Own Way
Rumours	Songbird
Rumours	The Chain
Rumours	You Make Loving Fun
Rumours	I Don't Want to Know
Rumours	Oh Daddy
Rumours	Gold Dust Woman
Sticky Fingers	Brown Sugar
Sticky Fingers	Sway
Sticky Fingers	Wild Horses
Sticky Fingers	Can't You Hear Me Knocking
Sticky Fingers	You Gotta Move
Sticky Fingers	Bitch
Sticky Fingers	I Got the Blues
Sticky Fingers	Sister Morphine
Sticky Fingers	Dead Flowers
Sticky Fingers	Moonlight Mile
Rubber Soul	Drive My Car
Rubber Soul	Norwegian Wood
Rubber Soul	You Won't See Me
Rubber Soul	Nowhere Man
Rubber Soul	Think for Yourself
Rubber Soul	The Word
Rubber Soul	Michelle
Rubber Soul	What Goes On
Rubber Soul	Girl
Rubber Soul	I'm Looking Through You
Rubber Soul	In My Life
Rubber Soul	Wait
Rubber Soul	If I Needed Someone
Rubber Soul	Run for Your Life
Sgt. Pepper's Lonely Hearts Club Band	Sgt. Pepper's Lonely Hearts Club Band
Sgt. Pepper's Lonely Hearts Club Band	With a Little Help from My Friends
Sgt. Pepper's Lonely Hearts Club Band	Lucy in the Sky with Diamonds
Sgt. Pepper's Lonely Hearts Club Band	Getting Better
Sgt. Pepper's Lonely Hearts Club Band	Fixing a Hole
Sgt. Pepper's Lonely Hearts Club Band	She's Leaving Home
Sgt. Pepper's Lonely Hearts Club Band	Being for the Benefit of Mr. Kite!
Sgt. Pepper's Lonely Hearts Club Band	Within You Without You

Sgt. Pepper's Lonely Hearts Club Band	When I'm Sixty-Four
Sgt. Pepper's Lonely Hearts Club Band	Lovely Rita
Sgt. Pepper's Lonely Hearts Club Band	Good Morning Good Morning
Sgt. Pepper's Lonely Hearts Club Band	Sgt. Pepper's Lonely Hearts Club Band (Reprise)
Sgt. Pepper's Lonely Hearts Club Band	A Day in the Life
Led Zeppelin II	Whole Lotta Love
Led Zeppelin II	What Is and What Should Never Be
Led Zeppelin II	The Lemon Song
Led Zeppelin II	Thank You
Led Zeppelin II	Heartbreaker
Led Zeppelin II	Living Loving Maid (She's Just a Woman)
Led Zeppelin II	Ramble On
Led Zeppelin II	Moby Dick
Led Zeppelin II	Bring It On Home
Led Zeppelin IV	Black Dog
Led Zeppelin IV	Rock and Roll
Led Zeppelin IV	The Battle of Evermore
Led Zeppelin IV	Stairway to Heaven
Led Zeppelin IV	Misty Mountain Hop
Led Zeppelin IV	Four Sticks
Led Zeppelin IV	Going to California
Led Zeppelin IV	When the Levee Breaks

musician_name	instrument
Paul Mcartney	bass guitar
John Paul Jones	bass guitar
Bill Wyman	bass guitar
Jimmy Page	guitar
John Lennon	guitar
Keith Richards	guitar
Ronnie Wood	guitar
George Harrison	guitar

Paul Mcartney	bass guitar
John Paul Jones	bass guitar
Bill Wyman	bass guitar
Jimmy Page	guitar
John Lennon	guitar
Keith Richards	guitar
Ronnie Wood	guitar
George Harrison	guitar

musician_name	instrument
John Bonham	drums
Charlie Watts	drums
Ringo Starr	drums

musician_name	band
Jimmy Page	Led Zeppelin
Robert Plant	Led Zeppelin
John Bonham	Led Zeppelin
John Paul Jones	Led Zeppelin
John Lennon	The Beatles
Paul Mcartney	The Beatles
George Harrison	The Beatles
Ringo Starr	The Beatles

musician_name	band
Mick Jagger	The Rolling Stones
Keith Richards	The Rolling Stones
Charlie Watts	The Rolling Stones
Ronnie Wood	The Rolling Stones
Bill Wyman	The Rolling Stones

Name	max_height
Border Collie	22
Irish Setter	27
Yorkshire Terrier	8
Poodle (Miniature)	15
Boxer	25
Greyhound	30
West Highland White Terrier	11
Cocker Spaniel	16
Great Dane	32
Dalmatian	24
Rottweiler	27
Newfoundland	28

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Cocker Spaniel	16
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Dalmatian	24
Rottweiler	27
Newfoundland	28

Name	good_with_children	good_with_other_dogs
Border Collie	3	3
Irish Setter	5	5
Yorkshire Terrier	5	3
Boxer	5	3
Greyhound	3	4
West Highland White Terrier	5	3
Cocker Spaniel	5	5
Dalmatian	3	3
Rottweiler	3	3
Newfoundland	5	5

Border Collie	3	3
Irish Setter	5	5
Yorkshire Terrier	5	3
Boxer	5	3
Greyhound	3	4
West Highland White Terrier	5	3
Cocker Spaniel	5	5
Dalmatian	3	3
Rottweiler	3	3
Newfoundland	5	5