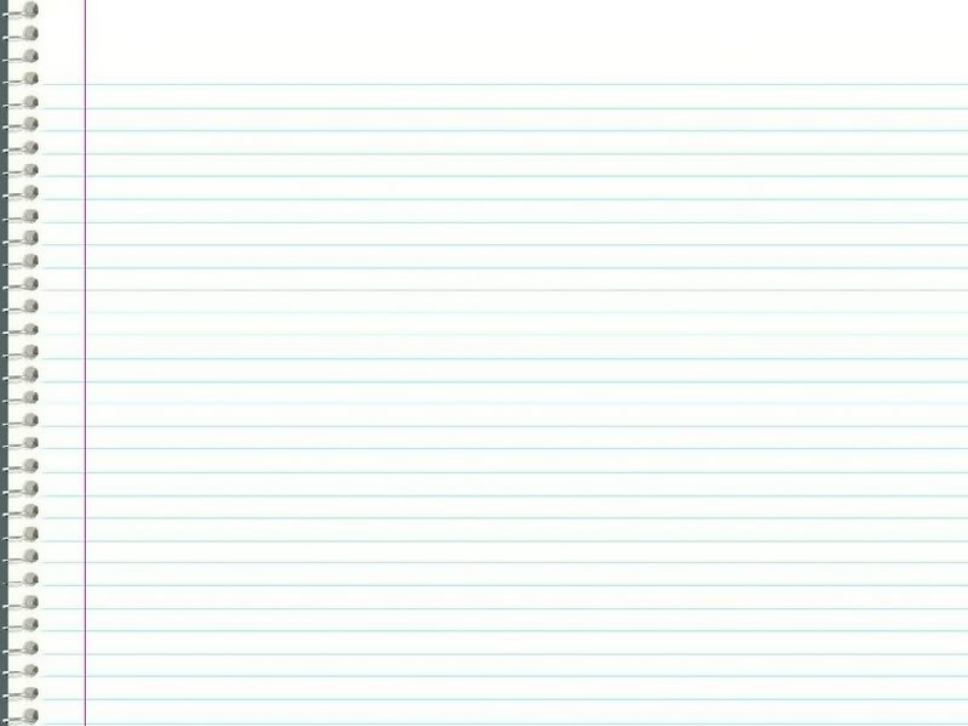


Workshop 2.1: Data frames

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Section 1

Data
importation
and
exportation

Prior preparation

Download the `macnally.csv` file

- `www.flutterbys.com.au/stats/downloads/data/macnally.csv`
- put it in a directory you wish to work from

Make sure you know where you have put it!

Prior preparation

Download the `macnally.csv` file

- `www.flutterbys.com.au/stats/downloads/data/macnally.csv`
- put it in a directory you wish to work from

OR

```
> download.file('http://www.flutterbys.com.au/stats/downloads/data/macnally  
+               '~/macnally.csv')
```

Working directory

- Querying the current working directory

```
> getwd()
```

```
[1] "/home/murray/Work/SUYR/downloads/slides"
```

Working directory

- Querying the current working directory

```
> getwd()
```

```
[1] "/home/murray/Work/SUYR/downloads/slides"
```

- Examples of navigating (moving current working directory)

```
> #Go to a subdirectory of the current directory  
> setwd('data')  
> #Go to the parent directory  
> setwd('..')  
> #Go to a sibling directory  
> setwd('../data')
```

Section 2

Working with
files

Importing from text file

COMMA SEPARATED FILE

1. Full path

```
> MACNALLY <- read.csv(  
+ '/home/murray/Work/SUYR/downloads/data/macnally.csv',  
+ header=T, row.names=1, strip.white=TRUE)  
> MACNALLY
```

	HABITAT	GST	EYR
Reedy Lake	Mixed	3.4	0.0
Pearcedale	Gipps.Manna	3.4	9.2
Warneet	Gipps.Manna	8.4	3.8
Cranbourne	Gipps.Manna	3.0	5.0
Lysterfield	Mixed	5.6	5.6
Red Hill	Mixed	8.1	4.1
Devilbend	Mixed	8.3	7.1
Olinda	Mixed	4.6	5.3
Fern Tree Gum	Montane Forest	3.2	5.2
Sherwin	Foothills Woodland	4.6	1.2

Importing from text file

COMMA SEPARATED FILE

2. Relative path

```
> MACNALLY <- read.csv('../data/macnally.csv',  
+ header=T, row.names=1, strip.white=TRUE)  
> getwd() #to see the current working directory
```

```
[1] "/home/murray/Work/SUYR/downloads/slides"
```

```
> MACNALLY
```

	HABITAT	GST	EYR
Reedy Lake	Mixed	3.4	0.0
Pearcedale	Gipps.Manna	3.4	9.2
Warneet	Gipps.Manna	8.4	3.8
Cranbourne	Gipps.Manna	3.0	5.0

Importing from text file

TAB SEPARATED FILE

Relative path

```
> MACNALLY <- read.table('../data/macnally.txt',  
+ header=T, row.names=1, sep='\t', strip.white=TRUE)  
> MACNALLY
```

	HABITAT	GST	EYR
Reedy Lake	Mixed	3.4	0.0
Pearcedale	Gipps.Manna	3.4	9.2
Warneet	Gipps.Manna	8.4	3.8
Cranbourne	Gipps.Manna	3.0	5.0
Lysterfield	Mixed	5.6	5.6
Red Hill	Mixed	8.1	4.1
Devilbend	Mixed	8.3	7.1
Olinda	Mixed	4.6	5.3
Fern Tree Gum	Montane Forest	3.2	5.2
Sherwin	Foothills Woodland	4.6	1.2
Heathcote Ju	Montane Forest	3.7	2.5
Warburton	Montane Forest	3.8	6.5
Millgrove	Mixed	5.4	6.5

Exporting to a text file

```
> write.table(MACNALLY, '../data/macnally.csv',  
+             quote=FALSE, row.names=TRUE, sep=',')
```

R and Excel?

R and Excel?

READING FROM EXCEL

```
> library(XLConnect)
> wb=loadWorkbook("../data/macnally.xlsx")
> macnally=readWorksheet(wb,sheet="Sheet1",header=TRUE)
> head(macnally)
```

	LOCATION	HABITAT	GST	EYR
1	Reedy Lake	Mixed	3.4	0.0
2	Pearcedale	Gipps.Manna	3.4	9.2
3	Warneet	Gipps.Manna	8.4	3.8
4	Cranbourne	Gipps.Manna	3.0	5.0
5	Lysterfield	Mixed	5.6	5.6
6	Red Hill	Mixed	8.1	4.1

```
> ##OR
> library(gdata)
> macnally<- read.xls("../data/macnally.xlsx",sheet='Sheet1',header=TRUE)
> head(macnally)
```

R and Excel?

WRITING TO EXCEL

```
> library(XLConnect)
> wb=loadWorkbook("../data/macnally1.xlsx", create=TRUE)
> createSheet(wb, name='MacNally')
> writeWorksheet(wb, macnally, sheet='MacNally')
> saveWorkbook(wb)
```

Saving R objects

SAVING AN INDIVIDUAL OBJECT

```
> save(MACNALLY, file='../data/macnally.RData')
```

SAVING MULTIPLE OBJECTS

```
> #calculate the mean GST  
> meanGST <- mean(MACNALLY$GST)  
> #display the mean GST  
> meanGST  
> #save the MACNALLY data frame as well as the mean GST object  
> save(MACNALLY, meanGST, file='macnallystats.RData')
```


Loading R objects

```
> load(file='../data/macnally.RData')
```