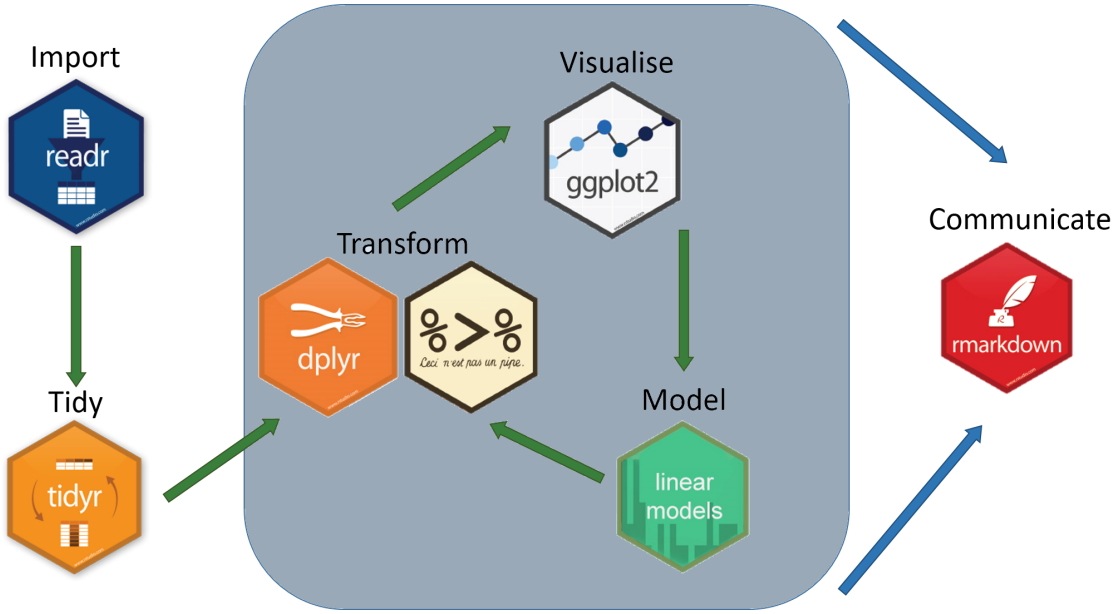
Data Analysis Process



Import Data with

Read Data Files in R

Function	Reads
readRDS/RDA	Read R data
read_csv()	Comma separated values
read_excel()	Excel File
read_sav()	SPSS Data
read_dta()	Stata File

Install following packages

```
library("readr")
library("haven")
library("readxl")
```

Read R Data

```
load("./data/spirantization.rda")
head(spirantization, 4)
```

	id <fctr>	position <fctr>	cIntensity <dbl>
1	beg_01	initial	58.74709
2	beg_02	initial	60.36729
3	beg_03	initial	58.32874
4	beg_04	initial	63.19056

4 rows | 1-4 of 5 columns

```
lang <- readRDS("./data/language.rds")
head(lang, 4)
```

Continent <chr>	Country <chr>	Measurement <chr>
Africa	Algeria	Langs
Africa	Angola	Langs
Oceania	Australia	Langs
Asia	Bangladesh	Langs

4 rows | 1-3 of 4 columns

Read CSV File

```
library(readr)

csv_data <-
  read_csv("./data/suicide.csv")
```

Freq	sex	method	age	age.group
4	male	poison	10	10-20
0	male	cookgas	10	10-20
0	male	toxicgas	10	10-20
247	male	hang	10	10-20
1	male	drown	10	10-20
17	male	gun	10	10-20

Read Excel Data

```
library(readxl)

excel_data <-
  read_excel("./data/plastics.xls")
```

Extrusion	Additive	Resistance	Gloss	Opacity
0	0	6.5	9.5	4.4
0	0	6.2	9.9	6.4
0	0	5.8	9.6	3.0
0	0	6.5	9.6	4.1
0	0	6.5	9.2	0.8
0	1	6.9	9.1	5.7

Read SPSS Data

```
library(haven)

spss_data <-
  read_sav("./data/bodyfat.sav")
```

y	x1	x2	x3
19.5	43.1	29.1	11.9
24.7	49.8	28.2	22.8
30.7	51.9	37.0	18.7
29.8	54.3	31.1	20.1
19.1	42.2	30.9	12.9
25.6	53.9	23.7	21.7

Read Stata Files

```
library(haven)

stata_data <-
  read_dta("./data/food.dta")
```

food_exp	income
115.22	3.69
135.98	4.39
119.34	4.75
114.96	6.03
187.05	12.47
243.92	12.98

Write Data from R

Function	Writes
saveRDS/save	RDS/RDA file
write_csv()	Comma separated values
write_delim()	Delimited values
write_xlsx()	Excel File
write_sav()	SPSS Data
write_dta()	Stata File

Install following package

```
install.package("writexl")
```

Write Data from R

`women`

height	weight
58	115
59	117
60	120
61	123
62	126
63	129

```
library(readr)
library(writexl)
library(haven)
```

```
save(women, file = "./data/women.rda")

saveRDS(women, "./data/women.rds")

write_csv(women, "./data/women.csv")

write_xlsx(women, "./data/women.xls")

write_sav(women, "./data/women.sav")

write_dta(women, "./data/women.dta")
```

Take Aways

Package	Reads / Writes
readr	most flat files (.csv, .tsv, etc.)
readxl	excel files (.xls, .xlsx)
haven	SPSS, Stata, and SAS files
writexl	write excel files (.xls, .xlsx)

These packages will help you import/export data efficiently.