

---

```

title:
“Hy-
poth-
esis
tests”
out-
put:
html_notebook
# R
Hy-
poth-
esis
Tests
install.packages(“dplyr”)
tScore_before
<-
c(123,
135,
129,
117,
120,
138,
140,
145,
136,
140,
146,
137)
tScore_after
<-
c(133,
136,
135,
137,
142,
135,
121,
147,
168,
152,
129,
145)
#
Cre-
ate a
data
frame
my_data
<-
data.frame(

```

```

group
=
rep(c("Score
Be-
fore",
"Score
Af-
ter"),
each
= 9),
scores
=
c(tScore_before,
tScore_after)
)
#
Print
all
data
print(my_data)
#Compute
sum-
mary
statis-
tics
by
groups
library(dplyr)
group_by(my_data,
group)
%>%
summarise(
count
=
n(),
mean
=
mean(scores,
na.rm
=
TRUE),
sd =
sd(scores,
na.rm
=
TRUE)
)

```

---

```

#
Com-
pute
Un-
paired
Two
Sam-
ple
t-test
res
<-
t.test(tScore_before,
tScore_after,
var.equal
=
TRUE)
res
#
Com-
pute
inde-
pen-
dent
t-test
res
<-
t.test(scores
~
group,
data
=
my_data,
var.equal
=
TRUE)
res

```

---

```

#test
whether
the
aver-
age
score
be-
fore
score
is
less
than
the
aver-
age
after
score,
type
this:
t.test(scores
~
group,
data
=
my_data,
var.equal
=
TRUE,
alter-
na-
tive
=
"less")

```

---

```

ggplot(my_data, aes(scores, fill = group)) + geom_histogram(alpha = 0.5, aes(y = ..density..), binwidth = 4,
position = 'identity')

```