

Control-Flow Constructs

Introduction to R

Question 1

Write an `if-else` construct that prints the statement "`a < A`" if "`a`" < "`A`" is `TRUE` and "`a >= A`" otherwise.

```
if ( "a" < "A") {  
  print("a < A")  
} else {  
  print("a >= A")  
}
```

```
## [1] "a < A"
```

Question 2

Repeat Q1, but using the `ifelse()` function.

```
ifelse("a" < "A","a < A","a >= A")
```

```
## [1] "a < A"
```

Question 3

Write an `if` construct that, if there are matching elements of `u` and `v` (i.e., if `u[i] = v[i]` for any index `i`), prints the number of matching elements, and otherwise prints the string "There are no matching elements."

```
set.seed(999)  
u <- sample(100,100,replace=TRUE)  
v <- sample(100,100,replace=TRUE)  
if ( sum(u==v) > 0 ) {  
  print(sum(u==v))  
} else {  
  print("There are no matching elements.")  
}
```

```
## [1] 2
```

Question 4

Confirm the short-circuiting behavior of an `if-else` construct by (a) setting the variable `t` to the value 4, and (b) writing an `if-else` construct that first checks if `t` is greater than or equal to 4 and if so prints "`t >= 4`", then checks to see if `t` is greater than zero and if so prints "`t > 0`", and otherwise prints "`t <= 0`".

```
t <- 4
if ( t >= 4 ) {
  print("t >= 4")
} else if ( t > 0 ) {
  print("t > 0")
} else {
  print("t <= 0")
}
```

```
## [1] "t >= 4"
```