

LABWORK – 4

Condition checking in R

Conditional execution using 'if' :

- ```
> if (TRUE) message ("It's true!")
```

It's true!

# taking a logical value and executing the next statement only if that value is 'TRUE'

```
> if (FALSE) message ("it's not true!")
```

>
- ```
> myInput <- 4
```

```
> if (myInput >= 0) {
```

```
+ print (sqrt (myInput))
```

```
+ }
```

```
[1] 2
```
- ```
> x <- c(-9, -10, 7, 0, 0)
```

```
> if (x < 0) {
```

```
+ print("values are negative")
```

```
+ }
```

```
[1] "values are negative"
```

Warning message:

In if (x < 0) { :

the condition has length > 1 and only the first element will be used

## Conditional execution using 'if-else' :

|    |                                                                                                                                     |                                                                                                                                                     |
|----|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | <pre>&gt; myInput &lt;- 4 &gt; if (myInput &gt;= 0) { + print (sqrt (myInput)) + } else { + print("Invalid input!") + } [1] 2</pre> | <pre>&gt; myInput &lt;- -4 &gt; if (myInput &gt;= 0) { + print (sqrt (myInput)) + } else { + print("Invalid input!") + } [1] "Invalid input!"</pre> |
|----|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|

# executing if-else statement for more than 2 alternatives

|    |                                                                                                                                                                   |                                                                                                                                                                              |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | <pre>&gt; x &lt;- 0 &gt; if (x &lt; 0) { + print("Negative number") + } else if (x &gt; 0) { + print("Positive number") + } else + print("Zero") [1] "Zero"</pre> | <pre>&gt; x &lt;- 1 &gt; if (x &lt; 0) { + print("Negative number") + } else if (x &gt; 0) { + print("Positive number") + } else + print("Zero") [1] "Positive number"</pre> |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

```
> x <- -10
> if (x < 0) {
+ print("Negative number")
+ } else if (x > 0) {
+ print("Positive number")
+ } else
+ print("Zero")
[1] "Negative number"
```

|    |                                                                                                                                                                           |                                                                                                                                                                            |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. | <pre>&gt; x &lt;- c(-2, -1, -3, -2, -1) &gt; if (all (x &lt; 0)) { + print ("all are negative") + } else { + print ("some are negative") + } [1] "all are negative"</pre> | <pre>&gt; x &lt;- c(-2, -1, -0, -2, -1) &gt; if (all (x &lt; 0)) { + print ("all are negative") + } else { + print ("some are negative") + } [1] "some are negative"</pre> |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Choosing Between Multiple Alternatives: 'switch'

1. 

```
> switch (3,
+ "one",
+ "two",
+ "three",
+ "four",
+ "five",
+ default)
[1] "three"
```
2. 

```
> switch (
+ as.character (123456),
+ "123456" = "one_two_three_four_five_six",
+ "seven_eight_nine"
+)
[1] "one_two_three_four_five_six"
```
3. 

```
> which = "first_preference"
> myFavBooks = switch(which,
+ "first_preference" = "Discrete_Mathematics" ,
+ "second_preference" = "Abstract_Algebra" ,
+ "third_preference" = "Graph_Theory")
> print(myFavBooks)
[1] "Discrete_Mathematics"
```