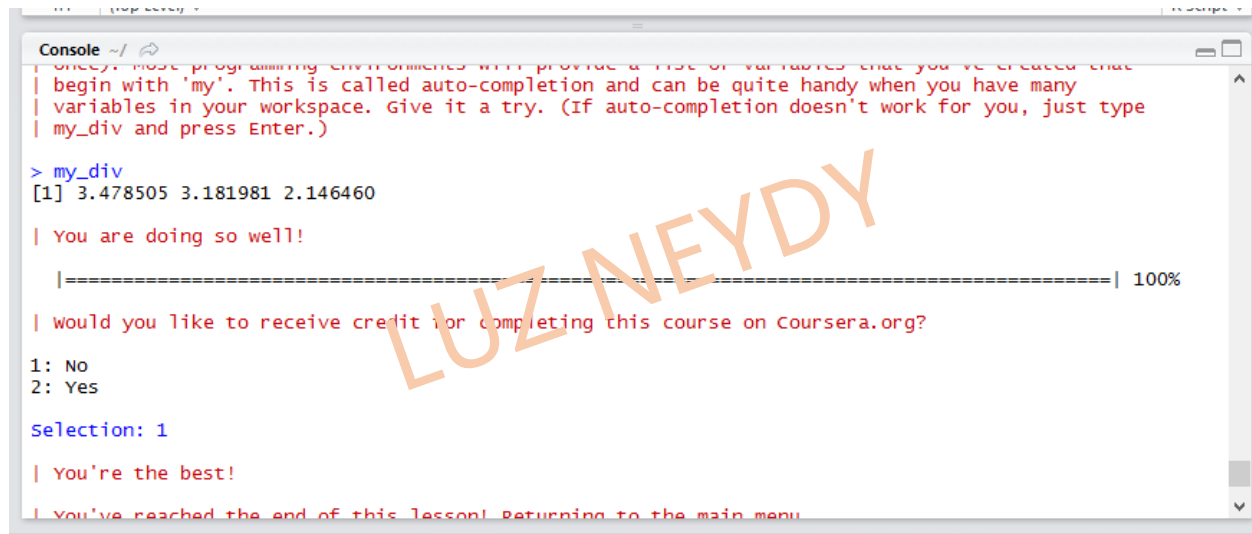
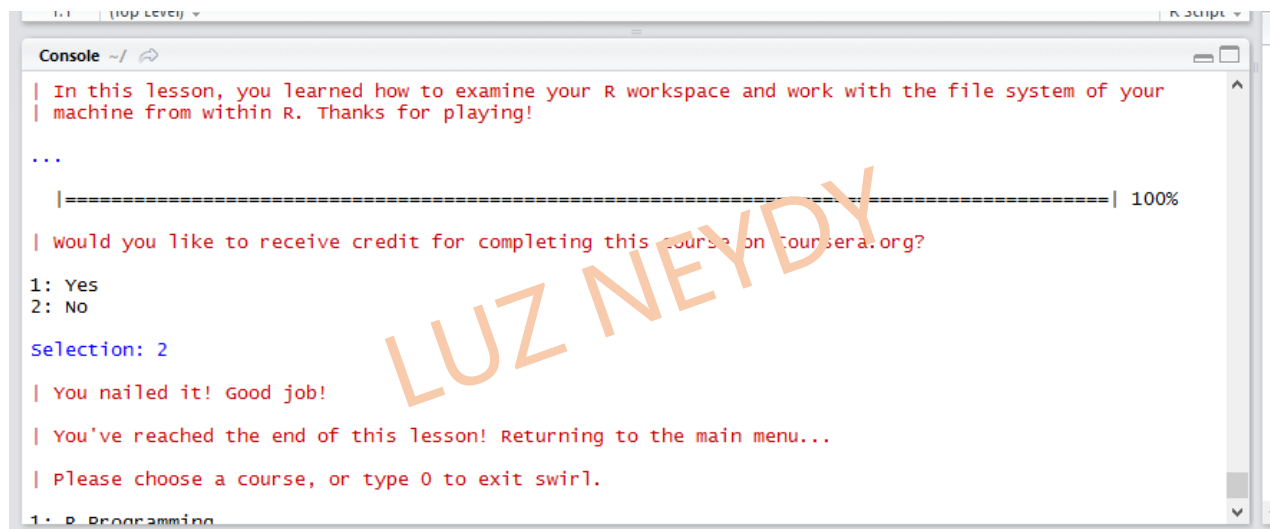


1. Basic Building Blocks



```
Console ~/  
| Once, most programming environments will provide a list of variables that you've created that
| begin with 'my'. This is called auto-completion and can be quite handy when you have many
| variables in your workspace. Give it a try. (If auto-completion doesn't work for you, just type
| my_div and press Enter.)
> my_div
[1] 3.478505 3.181981 2.146460
| You are doing so well!
| =====| 100%
| Would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
Selection: 1
| You're the best!
| You've reached the end of this lesson! Returning to the main menu...
```

2. Workspace and Files



```
Console ~/  
| In this lesson, you learned how to examine your R workspace and work with the file system of your
| machine from within R. Thanks for playing!
...
| =====| 100%
| Would you like to receive credit for completing this course on Coursera.org?
1: Yes
2: No
Selection: 2
| You nailed it! Good job!
| You've reached the end of this lesson! Returning to the main menu...
| Please choose a course, or type 0 to exit swirl.
1: R Programming
```

3. Sequences of Numbers

```
Console ~ | Top Level | R Script

> rep(c(0,1,2), each= 10)
[1] 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2

| You are really on a roll!

|=====| 100%

| Would you like to receive credit for completing this course on Coursera.org?

1: Yes
2: No

Selection: 2

| Nice work!

| You've reached the end of this lesson. Returning to the main menu...

| Please choose a course, or type 0 to exit swirl.

1: R Programming
2: Take me to the swirl course repository!

Selection: |
```

4. Vectors

```
Console ~ | Top Level | R Script

|=====| 95%

| Also worth noting is that the numeric vector 1:4 gets 'coerced' into a character vector by the paste() function.

...

|=====| 97%

| We'll discuss coercion in another lesson, but all it really means is that the numbers 1, 2, 3, and 4 in the output
| above are no longer numbers to R, but rather characters "1", "2", "3", and "4".

...

|=====| 100%

| Would you like to receive credit for completing this course on Coursera.org?

1: No
2: Yes

Selection: 1

| Perseverance, that's the answer.

| You've reached the end of this lesson! Returning to the main menu
```

5: Missing Values

```
Console ~/    
|=====| 95%
| Take nothing but results. Leave nothing but assumptions. That sounds like 'Take nothing but
| pictures. Leave nothing but footprints.' But it makes no sense! Surely our readers can come up with
| a better motto . . .
...
|=====| 98%
| In this lesson, you learned how to examine your workspace and work with the file system of your
| machine from within R. Thanks for playing!
...
|=====| 100%
| would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
selection: |
```

6: Subsetting Vectors

```
Console ~/    
| Great job!
|=====| 97%
| Now you know all four methods of subsetting data from vectors. Different approaches are best in different sc
| enarios
| and when in doubt, try it out!
...
|=====| 100%
| would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
selection: 1
| Great job!
| You've reached the end of this lesson! Returning to the main menu...
| Please choose a course, or type 0 to exit swirl.
```

7: Matrices and Data Frames

```
Console ~/ 
4 Sean 4 8 12 16 20

| Your dedication is inspiring!

|=====
= | 97%

| In this lesson, you learned the basics of working with two very important and common data structures -- matrices and
| data frames. There's much more to learn and we'll be covering more advanced topics, particularly with respect to data
| frames, in future lessons.

...

|=====
==== | 100%

| Would you like to receive credit for completing this course on Coursera.org?

1: Yes
2: No

selection: |
```

8: Logic

```
100% (top level) R Script 
Console ~/ 
3: any(ints == 10)
4: any(ints == 2.5)

selection: 3

| Excellent job!

|=====
===== | 98%

| That's all for this introduction to logic in R. If you really want to see what you can do with
| logic, check out the control flow lesson!

...

|=====
===== | 100%

| Would you like to receive credit for completing this course on Coursera.org?

1: No
2: Yes

selection: 1
```

9: Functions

```
Console ~/ 
| Use %% in between each string.
> "I" %% "love" %% "R!"
[1] "I love R!"
| You got it right!
|=====| 98%
| We've come to the end of our lesson! Go out there and write some great functions!
...
|=====| 100%
| would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
selection: 1
```

10: Lapply and Sapply

```
Console ~/ 
| right in the call to lapply(). Our function has no name and disappears as soon as lapply() is done using it.
| So-called 'anonymous functions' can be very useful when one of R's built-in functions isn't an option.
...
|=====| 98%
| In this lesson, you learned how to use the powerful lapply() and sapply() functions to apply an operation over the elements of a list. In the next lesson, we'll take a look at some close relatives of lapply() and sapply().
...
|=====| 100%
| would you like to receive credit for completing this course on Coursera.org?
1: No
```

11: Vapply and Tapply

```
1:1 | (Top Level) | R Script |
Console ~/ |
selection: 2

| Keep up the great work!

=====
== | 96%

| In this lesson, you learned how to use vapply() as a safer alternative to sapply(), which is most
| helpful when writing your own functions. You also learned how to use tapply() to split your data
| into groups based on the value of some variable, then apply a function to each group. These
| functions will come in handy on your quest to become a better data analyst.

...

=====
===== | 100%

| would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
```

12: Looking at Data

```
1:1 | (Top Level) | R Script |
Console ~/ |
===== | 92%

| str() is actually a very general function that you can use on most objects in R. Any time you want
| to understand the structure of something (a dataset, function, etc.), str() is a good place to
| start.

...

===== | 96%

| In this lesson, you learned how to get a feel for the structure and contents of a new dataset
| using a collection of simple and useful functions. Taking the time to do this upfront can save you
| time and frustration later on in your analysis.

...

===== | 100%

| would you like to receive credit for completing this course on Coursera.org?
1: No
2: Yes
```

13: Simulation

```
13:1 | (top Level) | R Script
Console ~/ |
| All of the standard probability distributions are built into R, including exponential (rexp()),
| chi-squared (rchisq()), gamma (rgamma()), .... well, you see the pattern.
...
|=====| 97%
| Simulation is practically a field of its own and we've only skimmed the surface of what's
| possible. I encourage you to explore these and other functions further on your own.
...
|=====| 100%
| Would you like to receive credit for completing this course on Coursera.org?
1: Yes
2: No
selection: 2
```

14: Dates and Times

```
Console ~/ |
> difftime(sys.time(), t1, units = 'days')
Time difference of 0.01507631 days
| That's correct!
|=====| 97%
| In this lesson, you learned how to work with dates and times in R. While it is important to
| understand the basics, if you find yourself working with dates and times often, you may want to
| check out the lubridate package by Hadley Wickham.
...
|=====| 100%
| Would you like to receive credit for completing this course on Coursera.org?
1: Yes
2: No
selection:
```

15: Base Graphics

```
Console ~/ / 
>
> hist(mtcars$mpg)

| Keep working like that and you'll get there!

| ===== | 98%

| In this lesson, you learned how to work with base graphics in R. The best place to go from here is
| to study the ggplot2 package. If you want to explore other elements of base graphics, then this
| web page (http://www.ling.upenn.edu/~joseff/rstudy/week4.html) provides a useful overview.
...
| ===== | 100%

| would you like to receive credit for completing this course on Coursera.org?
1: Yes
2: No
selection: 2|
```