R version 3.3.0 (2016-05-03) -- "Supposedly Educational"

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Platform: x86\_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.

You are welcome to redistribute it under certain conditions.

Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.

Type 'contributors()' for more information and

'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or

'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

[Previously saved workspace restored]

> swirl()

Error: could not find function "swirl"

> install.packages("swirl")

Installing package into ‘C:/Users/Liau/Documents/R/win-library/3.3’

(as ‘lib’ is unspecified)

--- Please select a CRAN mirror for use in this session ---

trying URL 'https://mirrors.tuna.tsinghua.edu.cn/CRAN/bin/windows/contrib/3.3/swirl\_2.4.2.zip'

Content type 'application/zip' length 212251 bytes (207 KB)

downloaded 207 KB

package ‘swirl’ successfully unpacked and MD5 sums checked

The downloaded binary packages are in

C:\Users\Liau\AppData\Local\Temp\RtmpgPyDId\downloaded\_packages

> packageVersion("swirl")

[1] ‘2.4.2’

> library(swirl)

| Hi! I see that you have some variables saved in your workspace. To keep things

| running smoothly, I recommend you clean up before starting swirl.

| Type ls() to see a list of the variables in your workspace. Then, type rm(list=ls())

| to clear your workspace.

| Type swirl() when you are ready to begin.

Warning message:

package ‘swirl’ was built under R version 3.3.1

> install\_from\_swirl("Statistical Inference")

Downloading: 130 B Downloading: 130 B Downloading: 130 B | | | 0% | | | 1% | |= | 1% | |= | 2% | |== | 2% | |== | 3% | |=== | 3% | |=== | 4% | |==== | 4% | |==== | 5% | |==== | 6% | |===== | 6% | |===== | 7% | |====== | 7% | |====== | 8% | |======= | 8% | |======= | 9% | |======= | 10% | |======== | 10% | |======== | 11% | |========= | 11% | |========= | 12% | |========== | 12% | |========== | 13% | |=========== | 13% | |=========== | 14% | |=========== | 15% | |============ | 15% | |============ | 16% | |============= | 16% | |============= | 17% | |============== | 17% | |============== | 18% | |============== | 19% | |=============== | 19% | |=============== | 20% | |================ | 20% | |================ | 21% | |================= | 21% | |================= | 22% | |================== | 22% | |================== | 23% | |================== | 24% | |=================== | 24% | |=================== | 25% | |==================== | 25% | |==================== | 26% | 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| Course installed successfully!

> swirl()

| Welcome to swirl! Please sign in. If you've been here before, use the same name as

| you did then. If you are new, call yourself something unique.

What shall I call you? SY

| Thanks, SY. Let's cover a couple of quick housekeeping items before we begin our

| first lesson. First of all, you should know that when you see '...', that means you

| should press Enter when you are done reading and ready to continue.

... <-- That's your cue to press Enter to continue

| Also, when you see 'ANSWER:', the R prompt (>), or when you are asked to select from

| a list, that means it's your turn to enter a response, then press Enter to continue.

Select 1, 2, or 3 and press Enter

1: Continue.

2: Proceed.

3: Let's get going!

Selection: 2

| You can exit swirl and return to the R prompt (>) at any time by pressing the Esc

| key. If you are already at the prompt, type bye() to exit and save your progress.

| When you exit properly, you'll see a short message letting you know you've done so.

| When you are at the R prompt (>):

| -- Typing skip() allows you to skip the current question.

| -- Typing play() lets you experiment with R on your own; swirl will ignore what you

| do...

| -- UNTIL you type nxt() which will regain swirl's attention.

| -- Typing bye() causes swirl to exit. Your progress will be saved.

| -- Typing main() returns you to swirl's main menu.

| -- Typing info() displays these options again.

| Let's get started!

...

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

1: Statistical Inference

2: Take me to the swirl course repository!

Selection: 1

| Please choose a lesson, or type 0 to return to course menu.

1: Introduction 2: Probability1 3: Probability2

4: ConditionalProbability 5: Expectations 6: Variance

7: CommonDistros 8: Asymptotics 9: T Confidence Intervals

10: Hypothesis Testing 11: P Values 12: Power

13: Multiple Testing 14: Resampling

Selection: 2

| | | 0%

| Probability. (Slides for this and other Data Science courses may be found at github

| https://github.com/DataScienceSpecialization/courses. If you care to use them, they

| must be downloaded as a zip file and viewed locally. This lesson corresponds to

| Statistical\_Inference/Probability.)

...

| |=== | 3%

| In this lesson, we'll review basic ideas of probability, the study of quantifying the

| likelihood of particular events occurring. Note the similarity between the words

| probability and probably. Every time you use the latter word you're implying that an

| event is more likely than not to occur.

...

| |===== | 7%

| The first step in understanding probability is to see if you understand what outcomes

| of an experiment are possible. For instance, if you were rolling a single, fair die

| once, how many outcomes are possible?

1: 4

2: Too many

3: 1

4: 6

Selection: 6

Enter an item from the menu, or 0 to exit

Selection: 4

| You are really on a roll!

| |======== | 10%

| The probability of a particular outcome of an experiment is the ratio of the number

| of ways that outcome can occur to all possible outcomes of the experiment. Since

| there are 6 possible outcomes to the experiment of rolling a die, and we assume the

| die is fair, each outcome is equally likely. So what is the probability of rolling a

| 2?

1: 0

2: 2/6

3: 1/6

4: 1/3

Selection: 3

| Nice work!

| |=========== | 14%

| What is the probability of rolling an even number?

1: 1/2

2: 1/3

3: 0

4: 1

Selection: 1

| All that hard work is paying off!

| |============= | 17%

| Since the probability of a particular outcome or event E is the ratio of ways that E

| could occur to the number of all possible outcomes or events, the probability of E,

| denoted P(E), is always between 0 and 1. Impossible events have a probability of 0

| (since they can't occur) and events that are certain to occur have a probability of

| 1.

...

| |================ | 21%

| If you're doing an experiment with n possible outcomes, say e1, e2, ..., en, then the

| sum of the probabilities of all the outcomes is 1. If all the outcomes are equally

| likely, as in the case of a fair die, then the probability of each is 1/n.

...

| |=================== | 24%

| If A and B are two independent events then the probability of them both occurring is

| the product of the probabilities. P(A&B) = P(A) \* P(B)

...

| |====================== | 28%

| Suppose you rolled the fair die twice in succession. What is the probability of

| rolling two 4's?

1: 2/6

2: 0

3: 1/6

4: 1/36

Selection: 4

| Perseverance, that's the answer.

| |======================== | 31%

| Suppose you rolled the fair die twice. What is the probability of rolling the same

| number two times in a row?

1: 1/36

2: 2/6

3: 1/6

4: 0

Selection: 3

| Great job!

| |=========================== | 34%

| Now consider the experiment of rolling 2 dice, one red and one green. Assume the dice

| are fair and not loaded. How many distinct outcomes are possible?

1: 11

2: 12

3: 36

4: 1

Selection: 3

| Excellent work!

| |============================== | 38%

| If an event E can occur in more than one way and these ways are disjoint (mutually

| exclusive) then P(E) is the sum of the probabilities of each of the ways in which it

| can occur.

...

| |================================ | 41%

| Rolling these two dice, what's the probability of rolling a 10?

1: 2/36

2: 0

3: 1/6

4: 3/36

Selection: 4

| Nice work!

| |=================================== | 45%

| What sum is the most likely when rolling these two dice?

1: 9

2: 7

3: 1

4: 12

5: 2

Selection: 7

Enter an item from the menu, or 0 to exit

Selection: 2

| You're the best!

| |====================================== | 48%

| The probability of at least one of two events, A and B, occurring is the sum of their

| individual probabilities minus the probability of their intersection. P(A U B) = P(A)

| + P(B) - P(A&B).

...

| |======================================== | 52%

| It's easy to see why this is. Calculating P(A) and P(B) counts outcomes that are in

| both A and B twice, so they're overcounted. The probability of the intersection of

| the two events, denoted as A&B, must be subtracted from the sum.

...

| |=========================================== | 55%

| Back to rolling two dice. Which expression represents the probability of rolling an

| even number or a number greater than 8?

1: (18+10-4)/36

2: (18+10-2)/36

3: (18+4-2)/36

4: (18+10)/36

Selection: 1

| You are doing so well!

| |============================================== | 59%

| It follows that if A and B are disjoint or mutually exclusive, i.e. only one of them

| can occur, then P(A U B) = P(A)+P(B) .

...

| |================================================ | 62%

| Which of the following expressions represents the probability of rolling a number

| greater than 10?

1: (3+1)/36

2: (3+1-1)/36

3: (1+1)/36

4: (2+1)/36

Selection: 4

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

| |=================================================== | 66%

| Use the answer to the previous question and the fact that the sum of all outcomes

| must sum to 1 to determine the probability of rolling a number less than or equal to

| 10.

> 11/12

[1] 0.9166667

| That's a job well done!

| |====================================================== | 69%

| Now we'll apply the concepts of probability to playing cards.

...

| |======================================================== | 72%

| A deck of cards is a set of 52 cards, 4 suits of 13 cards each. There are two red

| suits, diamonds and hearts, and two black suits, spades and clubs. Each of the 13

| cards in a suit has a value - an ace which is sometimes thought of as 1, a number

| from 2 to 10, and 3 face cards, king, queen, and jack. We've created a deck in R for

| you. Type 'deck' to see it now.

> deck

spades hearts diamonds clubs

[1,] "A:spades" "A:hearts" "A:diamonds" "A:clubs"

[2,] "2:spades" "2:hearts" "2:diamonds" "2:clubs"

[3,] "3:spades" "3:hearts" "3:diamonds" "3:clubs"

[4,] "4:spades" "4:hearts" "4:diamonds" "4:clubs"

[5,] "5:spades" "5:hearts" "5:diamonds" "5:clubs"

[6,] "6:spades" "6:hearts" "6:diamonds" "6:clubs"

[7,] "7:spades" "7:hearts" "7:diamonds" "7:clubs"

[8,] "8:spades" "8:hearts" "8:diamonds" "8:clubs"

[9,] "9:spades" "9:hearts" "9:diamonds" "9:clubs"

[10,] "10:spades" "10:hearts" "10:diamonds" "10:clubs"

[11,] "J:spades" "J:hearts" "J:diamonds" "J:clubs"

[12,] "Q:spades" "Q:hearts" "Q:diamonds" "Q:clubs"

[13,] "K:spades" "K:hearts" "K:diamonds" "K:clubs"

| All that hard work is paying off!

| |=========================================================== | 76%

| When drawing a single card, how many outcomes are possible?

> 1/52

[1] 0.01923077

| You're close...I can feel it! Try it again.

| How many cards are in the deck?

> 52

[1] 52

| That's a job well done!

| |============================================================== | 79%

| What is the probability of drawing a jack?

> 4/52

[1] 0.07692308

| Excellent work!

| |================================================================= | 83%

| If you're dealt a hand of 5 cards, what is the probability of getting all 5 of the

| same value?

> 1/13

[1] 0.07692308

| One more time. You can do it! Or, type info() for more options.

| There are only 4 different suits in a deck.

> 4/52

[1] 0.07692308

| You're close...I can feel it! Try it again. Or, type info() for more options.

| There are only 4 different suits in a deck.

> 1/4

[1] 0.25

| You're close...I can feel it! Try it again. Or, type info() for more options.

| There are only 4 different suits in a deck.

> 1/13

[1] 0.07692308

| Not exactly. Give it another go. Or, type info() for more options.

| There are only 4 different suits in a deck.

> info()

| When you are at the R prompt (>):

| -- Typing skip() allows you to skip the current question.

| -- Typing play() lets you experiment with R on your own; swirl will ignore what you

| do...

| -- UNTIL you type nxt() which will regain swirl's attention.

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| -- Typing main() returns you to swirl's main menu.

| -- Typing info() displays these options again.

>

> nxt()

| Resuming lesson...

| If you're dealt a hand of 5 cards, what is the probability of getting all 5 of the

| same value?

> 13/52

[1] 0.25

| Not exactly. Give it another go. Or, type info() for more options.

| There are only 4 different suits in a deck.

> 0

[1] 0

| You are quite good my friend!

| |=================================================================== | 86%

| What is the probability of drawing a face card?

> 16/52

[1] 0.3076923

| That's not the answer I was looking for, but try again. Or, type info() for more

| options.

| There are 3 face cards in each of the 4 suits in the deck.

> 12/52

[1] 0.2307692

| You nailed it! Good job!

| |====================================================================== | 90%

| Suppose you draw a face card and don't replace it in the deck. What is the

| probability that when you draw a second card it also will be a face card?

1: 12/51

2: 11/51

3: 11/52

4: 0

Selection: 2

| You nailed it! Good job!

| |========================================================================= | 93%

| Suppose you draw a face card and don't replace it in the deck. What is the

| probability that when you draw a second card it also will be a face card of the same

| suit?

> 2/51

[1] 0.03921569

| Keep up the great work!

| |=========================================================================== | 97%

| Congrats! With probability 1, you've aced this first lesson on basic probability.

...

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

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

1: Yes

2: No

Selection: 1

What is your email address? sweeyean@gmail.com

What is your assignment token? UUWechYlSX17tQcM

Grade submission succeeded!

| You are really on a roll!

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

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

1: Statistical Inference

2: Take me to the swirl course repository!

Selection: