Homework 12

Andrew Shao (NetID: as13381)

Question 1 (1 pt): Write a `for` loop to determine the type of each column in the data frame `flights` of package `nycflights13`.

Answer:

```
library(nycflights13)

col_types <- c()
for (i in colnames(flights)) {
  col_types <- c(col_types, typeof(flights[[i]]))
}
col_types
```

```
##  [1] "integer"   "integer"   "integer"   "integer"   "integer"   "double"
##  [7] "integer"   "integer"   "double"    "character" "integer"   "character"
## [13] "character" "character" "double"    "double"    "double"    "double"
## [19] "double"
```

Question 2 (1 pt): Write code that uses one of the `map` functions to determine the type of each column in the data frame `flights` of package `nycflights13`.

Answer:

```
library(purrr)
map(flights, typeof)
```

```
## $year
## [1] "integer"
##
## $month
## [1] "integer"
##
## $day
## [1] "integer"
##
## $dep_time
## [1] "integer"
##
## $sched_dep_time
## [1] "integer"
##
## $dep_delay
```

```
## [1] "double"
##
## $arr_time
## [1] "integer"
##
## $sched_arr_time
## [1] "integer"
##
## $arr_delay
## [1] "double"
##
## $carrier
## [1] "character"
##
## $flight
## [1] "integer"
##
## $tailnum
## [1] "character"
##
## $origin
## [1] "character"
##
## $dest
## [1] "character"
##
## $air_time
## [1] "double"
##
## $distance
## [1] "double"
##
## $hour
## [1] "double"
##
## $minute
## [1] "double"
##
## $time_hour
## [1] "double"
```

Question 3 (2 pts): What does `map_dbl(-2:2, rnorm, n = 5)` do? Why? (If there is an error when knitting, use the code chunk option `error = TRUE`.)

Answer: It returns an error, because the `rnorm` function calls return vectors of length greater than 1 and which causes an error because the vector returned must be of length 1.

```
map_dbl(-2:2, rnorm, n = 5)
```

```
## Error in `map_dbl()`:
## i In index: 1.
## Caused by error:
## ! Result must be length 1, not 5.
```

Question 4 (1 pt): Use the `pmap` function to generate 2, 3, and 5 random numbers from the continuous uniform distributions `Unif(0,1)`, `Unif(10,100)`, and `Unif(100,1000)`, respectively. Don't forget to set the random number seed by `set.seed(0)`.

Answer:

```
set.seed(0)
pmap(list(c(2, 3, 5), c(0, 10, 100), c(1, 100, 1000)), runif)
```

```
## [[1]]
## [1] 0.8966972 0.2655087
##
## [[2]]
## [1] 43.49115 61.55680 91.73870
##
## [[3]]
## [1] 281.5137 908.5507 950.2077 694.7180 666.2026
```