HW4_arflowers

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Homework 4

Problem 3

Part A

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.5     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.0.1     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(tibble)
setwd("~/Desktop/VT/StatProgPackages")
ThicknessGauge <- read.csv('ThicknessGauge.dat', sep = " ", header = FALSE)
tidy_thickness <- slice(ThicknessGauge, -c(1,2))
tidy_thickness <- bind_rows(tidy_thickness[,c(1,2,4,6)], tidy_thickness[,c(1,3,5,7)])
tidy_thickness[is.na(tidy_thickness)] <- 0
tidy_thickness <- transmute(tidy_thickness, Part = V1, Operator1 = V2 + V3, Operator2 = V4 + V5, Operat
tidy_thickness
```

```
##    Part Operator1 Operator2 Operator3
## 1     1     0.953     0.954     0.954
## 2     2     0.956     0.956     0.958
## 3     3     0.956     0.956     0.957
## 4     4     0.957     0.958     0.957
## 5     5     0.957     0.957     0.958
## 6     6     0.958     0.957     0.958
## 7     7     0.957     0.958     0.958
## 8     8     0.957     0.957     0.957
## 9     9     0.954     0.954     0.955
## 10   10     0.954     0.956     0.954
## 11    1     0.952     0.954     0.956
## 12    2     0.956     0.957     0.957
## 13    3     0.955     0.955     0.956
## 14    4     0.957     0.957     0.958
## 15    5     0.957     0.957     0.958
```

```
## 16    6     0.958     0.957     0.958
## 17    7     0.956     0.957     0.957
## 18    8     0.955     0.956     0.957
## 19    9     0.954     0.954     0.955
## 20   10     0.955     0.954     0.955
```

Part B

```
BrainAndBodyWeight <- read.csv('BrainandBodyWeight.dat', sep = " ")
tidy_weight <- bind_rows(BrainAndBodyWeight[,1:2], BrainAndBodyWeight[,3:4], BrainAndBodyWeight[,5:6])
tidy_weight[is.na(tidy_weight)] <- 0
tidy_weight <- transmute(tidy_weight, BodyWeight = Body + Brain + Body.1, BrainWeight = Wt + Wt.1 + Wt.1
tidy_weight <- slice(tidy_weight, -63)
tidy_weight
```

```
##    BodyWeight BrainWeight
## 1       3.385       44.50
## 2       0.480       15.50
## 3       1.350        8.10
## 4     465.000      423.00
## 5      36.330      119.50
## 6      27.660      115.00
## 7      14.830       98.20
## 8       1.040        5.50
## 9       4.190       58.00
## 10      0.425        6.40
## 11      0.101        4.00
## 12      0.920        5.70
## 13      1.000        6.60
## 14      0.005        0.10
## 15      0.060        1.00
## 16      3.500       10.80
## 17      2.000       12.30
## 18      1.700        6.30
## 19   2547.000     4603.00
## 20      0.023        0.30
## 21    187.100      419.00
## 22    521.000      655.00
## 23      0.785        3.50
## 24     10.000      115.00
## 25      3.300       25.60
## 26      0.200        5.00
## 27      1.410       17.50
## 28    529.000      680.00
## 29    207.000      406.00
## 30     85.000      325.00
## 31      0.750       12.30
## 32     62.000     1320.00
## 33   6654.000     5712.00
## 34      3.500        3.90
## 35      6.800      179.00
## 36     35.000       56.00
## 37      4.050       17.00
## 38      0.120        1.00
```

```
## 39      0.023        0.40
## 40      0.010        0.30
## 41      1.400       12.50
## 42    250.000      490.00
## 43      2.500       12.10
## 44     55.500      175.00
## 45    100.000      157.00
## 46     52.160      440.00
## 47     10.550      179.50
## 48      0.550        2.40
## 49     60.000       81.00
## 50      3.600       21.00
## 51      4.288       39.20
## 52      0.280        1.90
## 53      0.075        1.20
## 54      0.122        3.00
## 55      0.048        0.33
## 56    192.000      180.00
## 57      3.000       25.00
## 58    160.000      169.00
## 59      0.900        2.60
## 60      1.620       11.40
## 61      0.104        2.50
## 62      4.235       50.40
```

Part C

```
library(data.table)
```

```
##
## Attaching package: 'data.table'
```

```
## The following objects are masked from 'package:dplyr':
##
##     between, first, last
```

```
## The following object is masked from 'package:purrr':
##
##     transpose
```

```
LongJump <- fread('LongJumpData.dat', header = FALSE, fill = TRUE)
tidy_jump <- slice(LongJump, -1)
tidy_jump <- bind_rows(tidy_jump[,1:2], tidy_jump[,3:4], tidy_jump[,5:6], tidy_jump[,7:8])
tidy_jump[is.na(tidy_jump)] <- 0
tidy_jump <- slice(tidy_jump, -c(23,24))
tidy_jump <- as.data.frame(apply(tidy_jump, c(1,2), as.numeric))
tidy_jump <- transmute(tidy_jump, Year = V1 + V3 + V5 + V7, LongJump = V2 + V4 + V6 + V8)
tidy_jump$Year <- tidy_jump$Year + 1900
tidy_jump
```

```
##    Year LongJump
## 1  1896   249.75
## 2  1900   282.88
## 3  1904   289.00
## 4  1908   294.50
## 5  1912   299.25
```

```
## 6  1920   281.50
## 7  1924   293.13
## 8  1928   304.75
## 9  1932   300.75
## 10 1936   317.31
## 11 1948   308.00
## 12 1952   298.00
## 13 1956   308.25
## 14 1960   319.75
## 15 1964   317.75
## 16 1968   350.50
## 17 1972   324.50
## 18 1976   328.50
## 19 1980   336.25
## 20 1984   336.25
## 21 1988   343.25
## 22 1992   342.50
```

Part D

```
tomato <- fread('tomato.dat', header = FALSE)
```

Part E

```
LarvaeControl <- read.csv('LarvaeControl.dat', sep = " ", header = FALSE)
```