MATH 542 | Lab 3

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Problem 1

Problem 1a

```
birdful.data <- read.csv('BirdFlu.csv', header=T)
cases.2003 <- sum(birdful.data$X2003.cases)
```

Total cases in 2003: 4

Problem 1b

```
cases.2003.2005 <- sum(birdful.data$X2003.cases)+sum(birdful.data$X2005.cases)
```

Total cases in 2003 and 2005: 102

Problem 1c

```
total.deaths <- rowSums(birdful.data[,-1])
max.which <- which.max(total.deaths)
min.which <- which.min(total.deaths)
max.country <- birdful.data$Country[max.which]
min.country <- birdful.data$Country[min.which]
```

Country with most cases: Indonesia

Country with least cases: Bangladesh

Problem 1d

```
birdful.data['total'] <- total.deaths
library(knitr)
kable(subset(birdful.data, select=c('Country', 'total')))
```

Country	total
Azerbaijan	13
Bangladesh	1
Cambodia	14
China	50
Djibouti	1

Country	total
Egypt	72
Indonesia	245
Iraq	5
Lao People's Democratic Republic	4
Myanmar	1
Nigeria	2
Pakistan	4
Thailand	42
Turkey	16
VietNam	158

Total number of cases per year

```
column.sum <- colSums(birdful.data[,-1])
#t(kable(rbind(t(colnames(birdful.data)[2:13]), t(column.sum[1:12]) )))
kable(column.sum[1:12])
```

X2003.cases	4
X2003.deaths	4
X2004.cases	46
X2004.deaths	32
X2005.cases	98
X2005.deaths	43
X2006.cases	115
X2006.deaths	79
X2007.cases	88
X2007.deaths	59
X2008.cases	34
X2008.deaths	26

Problem 2

```
isit <- read.csv('ISIT.txt', sep = ' ')
station1.data <- subset(isit, Station=="1")
nobs1 <- nrow(station1.data)
sample1.depth <- station1.data$Sample.Depth
```

Problem 2a

Number of observations in station 1: 38

Summary of station 1:

```
summary(station1.data)
```

```
##   Sample.Depth     Sources          Station     Latitude
##  Min.   : 517   Min.   : 0.000   Min.   :1   Min.   :50.15
```

```
##  1st Qu.:1528   1st Qu.: 0.500   1st Qu.:1   1st Qu.:50.15
##  Median :2520   Median : 1.320   Median :1   Median :50.15
##  Mean   :2549   Mean   : 5.314   Mean   :1   Mean   :50.15
##  3rd Qu.:3652   3rd Qu.: 7.095   3rd Qu.:1   3rd Qu.:50.15
##  Max.   :3939   Max.   :28.730   Max.   :1   Max.   :50.15
##    Longitude
##  Min.   :-14.48
##  1st Qu.:-14.48
##  Median :-14.48
##  Mean   :-14.48
##  3rd Qu.:-14.48
##  Max.   :-14.48
```

Mean median etc of `Sample.Depth`:

```
summary(sample1.depth)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##     517    1528    2520    2549    3652    3939
```

Problem 2b