Class_17 Homework

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```
url <- "https://tinyurl.com/COVID-2019"
virus <- read.csv(url)
tail(virus)
```

```
##      Province.State Country.Region    Lat     Long       date cases      type
## 2772        Shaanxi Mainland China 35.1917 108.8701 2020-03-04     7 recovered
## 2773       Shandong Mainland China 36.3427 118.1498 2020-03-04     5 recovered
## 2774       Shanghai Mainland China 31.2020 121.4491 2020-03-04     4 recovered
## 2775        Sichuan Mainland China 30.6171 102.7103 2020-03-04    12 recovered
## 2776       Xinjiang Mainland China 41.1129  85.2401 2020-03-04     1 recovered
## 2777       Zhejiang Mainland China 29.1832 120.0934 2020-03-04    21 recovered
```

Q1 How many total infected cases are there worldwide?

```
cases <- sum(virus$cases)
cases
```

```
## [1] 149549
```

Q2 How many deaths linked to infected cases have there been?

```
inds <- virus$type == "death"

virus[inds,"cases"]
```

```
##   [1]  17   1   1   7  16   1  12   1   1   1  24  49   1   1   1  37  42   1
##  [19]  45   1   1 101  64   1  65   1  70   1   1  69   1   1   1  81   1   1
##  [37]   1   2   1  81   1   1   1   1   1   1   1   2  91   1   2   1 103   1
##  [55]   1   1   1   1   1  94   1   1   1   1   1   1   1   1   1   1   1   1
##  [73]   1   2 242   1   1   1   1   2   1 147   1   1   2 139 100   1   2   1
##  [91]   2   3  93   1   1   3 132   1   1   2   1   1   1 108   1   1   1   1
## [109]   2   1   1 115   1   1   1   1   2   1   1   1   1   1 202   1   1   3
## [127]   1   4   1   1   1   4   4   2 149   1   4   3   2   1  68   1   1   3
## [145]   2   1   2   1  52   7   5   2   1   1   1   1  26   8   4   2   2  41
## [163]   1   9   8   1   3   1   1  45   1  11   5   1   1   1   1  34   1   1
## [181]  12  18  11  42   4   1   1  11  27   1   1  32   1   1  15   2  28   7
## [199]   1  36   3   1   1
```

```
deaths <- sum(virus[inds,"cases"])

deaths
```

```
## [1] 3254
```

> Q3 what is the overall death rate?

```
(deaths/cases)*100
```

```
## [1] 2.175875
```

> Q4 What is the death rate in Mainland China?

```
china_inds <- virus$Country.Region =="Mainland China"
virus_china <- virus[china_inds,]

china_inds_death <- virus_china$type == "death"

China_deaths <- sum(virus_china[china_inds_death,"cases"])

china_inds_survive <- virus_china$type != "death"

China_survive <- sum(virus_china[china_inds_survive, "cases"])

(China_deaths/China_survive)*100
```

```
## [1] 2.289097
```

Q5 What is the death rate in Italy, Iran, and the US?

```
italy_inds <- virus$Country.Region =="Italy"
US_inds <- virus$Country.Region =="US"
Iran_inds <- virus$Country.Region =="Iran"

virus_italy <- virus[italy_inds,]
virus_us <- virus[US_inds,]
virus_iran <- virus[Iran_inds,]
```

#Italy Death Rate

```
italy_inds_death <- virus_italy$type == "death"
italy_inds_survive <- virus_italy$type != "death"

italy_deaths <- sum(virus_italy[italy_inds_death,"cases"])
italy_survive <- sum(virus_italy[italy_inds_survive,"cases"])

(italy_deaths/italy_survive)*100
```

```
## [1] 3.179792
```

#US Death Rate

```
us_inds_death <- virus_us$type == "death"
us_inds_survive <- virus_us$type != "death"

us_deaths <- sum(virus_us[us_inds_death,"cases"])
us_survive <- sum(virus_us[us_inds_survive,"cases"])

(us_deaths/us_survive)*100
```

```
## [1] 6.832298
```

#Iran Death Rate

```
iran_inds_death <- virus_iran$type == "death"
iran_inds_survive <- virus_iran$type != "death"

iran_deaths <- sum(virus_iran[iran_inds_death,"cases"])
iran_survive <- sum(virus_iran[iran_inds_survive,"cases"])

(iran_deaths/iran_survive)*100
```

```
## [1] 2.648244
```