Homework 1

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Question 1 (0.5 pt): Generate the following code chunk.

```r
suppressMessages(library(tidyverse))
library(dslabs)
data(us_contagious_diseases)
```

Question 2 (1 pt): Use the following R code to produce the following bar chart for the dataset `us_contagious_diseases`. Choose an appropriate chunk option to add the caption "`The number of observations for each disease`" to the figure.

```r
ggplot(data = us_contagious_diseases) + geom_bar(mapping = aes(x = disease))
```
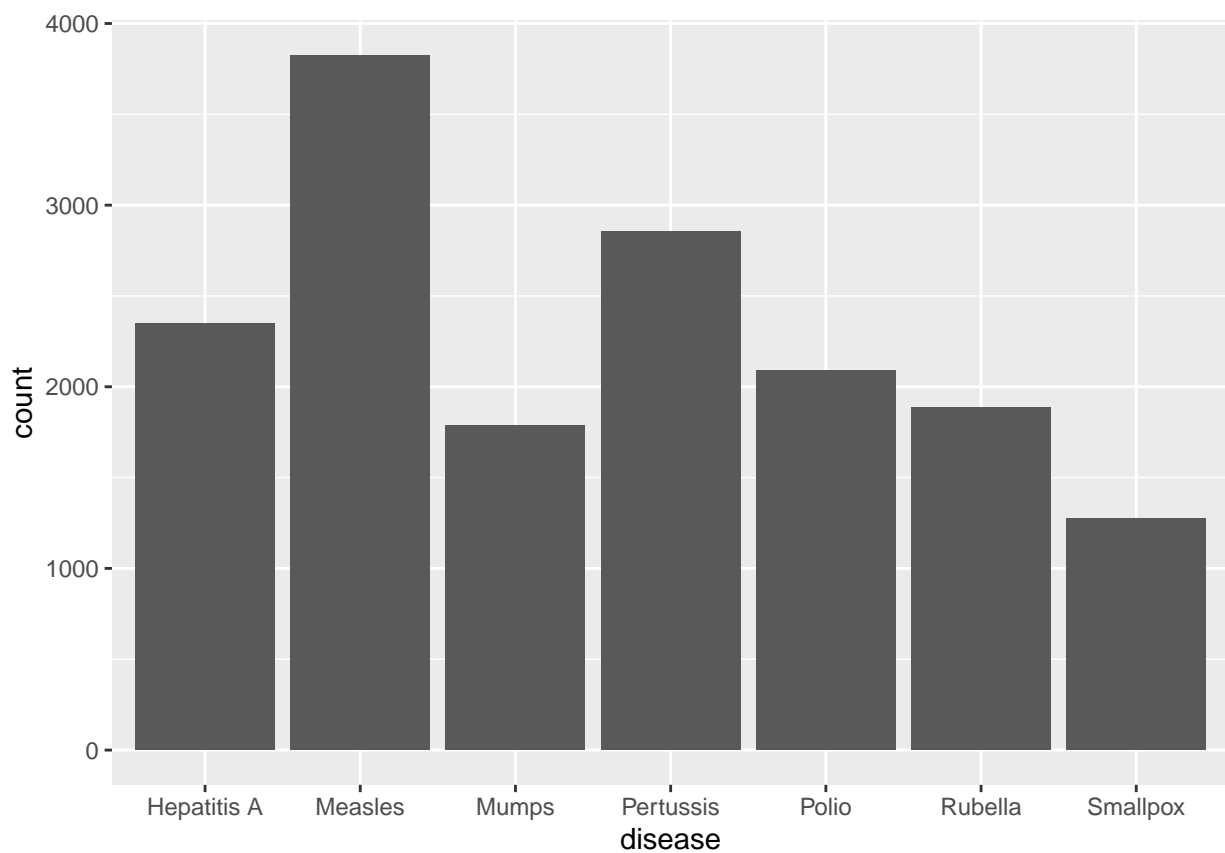

Figure 1: The number of observations for each disease

Question 3 (1 pt): The R code `head(us_contagious_diseases)` outputs the first 6 rows of the dataset `us_contagious_diseases`. Use `knitr::kable` to make the following table for the output of `head(us_contagious_diseases)`, with the caption "`The first 6 rows of us_contagious_diseases`". Choose an appropriate chunk option to hide the code chunk.

Table 1: The first 6 rows of us_contagious_diseases

disease	state	year	weeks_reporting	count	population
Hepatitis A	Alabama	1966	50	321	3345787
Hepatitis A	Alabama	1967	49	291	3364130
Hepatitis A	Alabama	1968	52	314	3386068
Hepatitis A	Alabama	1969	49	380	3412450
Hepatitis A	Alabama	1970	51	413	3444165
Hepatitis A	Alabama	1971	51	378	3481798

Question 4 (0.5 pt): Write the following sentence and formula.

Compute the rate by the following formula:

$$rate = cout/poluation.$$

Question 5 (0.5 pt): Write the following sentence in which the numbers are produced by inline R code.

The `us_contagious_diseases` data has 16065 rows and 6 columns.

Question 6 (0.5 pt): Write the following sentence and include a hyperlink to the website address.

The `us_contagious_diseases` data is available in the R package `dslabs` (https://rdrr.io/cran/dslabs/man/us_contagious_diseases.html).

Question 7 (1 pt): Write the following sentence. Cite the article and generate the reference list by using BibTex.

Please cite the article Van Panhuis et al. (2013) for the dataset `us_contagious_diseases`.

References

Panhuis, Willem G. van, John Grefenstette, Su Yon Jung, Nian Shong Chok, Anne Cross, Heather Eng, Bruce Y. Lee, et al. 2013. "Contagious Diseases in the United States from 1888 to the Present." *New England Journal of Medicine* 369 (22): 2152–58. https://doi.org/10.1056/NEJMms1215400.