Factors and Data Frames

1. Convert the following character vector to a factor and make a barplot to visualize its distribution (provide your code and sketch of the barplot).

```
opinion <- c("dislike", "neutral", "dislike", "love", "like", "like")
```

2. Add the possibility for an additional level named `"despise"`. Then, reorder the factor sensibly from most negative to most positive and remake your barplot.

The following four question deal with the `iris` data set, which is built in to R. You can view it by just typing `iris`.

3. What are the dimensions of the data frame?

4. What is the unit of observation (i.e. what is in each row)? See `?iris`.

5. What is the type of each of the atomic vectors?

6. How can you create a new data frame that has the same number of rows but excludes the columns dealing with sepals?

7. Shift the `name` column in `star_wars` to be the row names of that data frame. That's to say, use it to populate the row names and then remove it as a column.

```
star_wars <- data.frame(
    name = c("Anakin", "Padme", "Luke", "Leia"),
    gender = c("male", "female", "male", "female"),
    height = c(1.88, 1.65, 1.72, 1.50),
    weight = c(84, 45, 77, 49)
)
```

Git and GitHub

For the following questions, consider the file system below. You begin working in a shell at the Home directory, `~`.

```
~
├── practice
│   ├── ex1.R
│   └── ex2.R
└── my-project
    ├── README.md
    └── scripts
        ├── data-cleaning.R
        └── modeling.R
```

8. If you run the `ls` command, what will the output be?

9. What commands would you run to move into `my-project` and designate that directory as a git repository?

10. When you designate an existing directory as a git repo and it already has files in it, they will be neither staged nor committed. What single command could you use to stage the existing three files? Note that you can add multiple files at once by separating them by a space (see the wedding example)[1].

11. Once all of the files are staged, write the command can be used to take a snapshot of the state of those files along with a helpful caption.

12. Say that the project has a Part 1 and a Part 2. These existing files accomplish Part 1. To accomplish Part 2, you add several dozen lines of new code to `data-cleaning.R` and write and save a new script called `visualization.R` right alongside it. What commands would you run to store those changes along with a helpful description?

[1] There are several other ways to do this. Feel free to check online for different methods.