Homework 8 Help

Lew Harvey

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Part 1

This homework is straightforward and simple. You mostly have to think logically about what kind of afference (AF) is produced and what efferent copy (EC) is produced under each of the situations described in the assignment. Then it’s a matter of subtracting the efferent copy from the afference: The difference is the resulting perception.

If you want to use R I recommend making a data frame with three columns: af, ec, and difference and then filling in the values: each row representing a situation from the assignment. Here is one way to set it up (note: these values are wrong!!). I’ve also include a variable in the data frame for comments on the perception. There are better, but more complicated to print nice tables than using a data frame but they are more complicated. If you are really compulsive out `xtables` in the `knitr` package.

```r
af <- c(20, -15, 40, 0)
ec <- c(3, 20, -40, -10)
dif <- af - ec
cmnts <- c("no perception",
              "upward movement",
              "downward movement",
              "inside out")
df <- data.frame(af, ec, dif, comments = cmnts)
df
```

```r
table(df)
## af ec dif comments
## 1 20 3 17 no perception
## 2 -15 20 -35 upward movement
## 3 40 -40 80 downward movement
## 4 0 -10 10 inside out
```

Part 2

This second part is just like the first, so all you need to do is add a fifth row to your data frame as shown below. In order to predict what you would perceive keep in mind that when the AF - EC difference is positive you perceive motion to the right and when it’s negative you perceive motion to the left. When it’s zero you perceive no motion.

```r
af <- c(20, -15, 40, 0, 1)
ec <- c(3, 20, -40, -10, 1)
dif <- af - ec
cmnts <- c("no perception",
              "upward movement",
              "downward movement",
              "inside out",
              "who knows?")
df <- data.frame(af, ec, dif, comments = cmnts)
df
```

```r
table(df)
```

```r
table(df)
## af ec dif comments
## 1 20 3 17 no perception
## 2 -15 20 -35 upward movement
## 3 40 -40 80 downward movement
## 4 0 -10 10 inside out
## 5 1 1 0 who knows?
```
<table>
<thead>
<tr>
<th>af</th>
<th>ec</th>
<th>dif</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>3</td>
<td>17 no perception</td>
</tr>
<tr>
<td>2</td>
<td>-15</td>
<td>20</td>
<td>-35 upward movement</td>
</tr>
<tr>
<td>3</td>
<td>40</td>
<td>-40</td>
<td>80 downward movement</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>-10</td>
<td>10 inside out</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0 who knows?</td>
</tr>
</tbody>
</table>