Getting / cleaning data 2

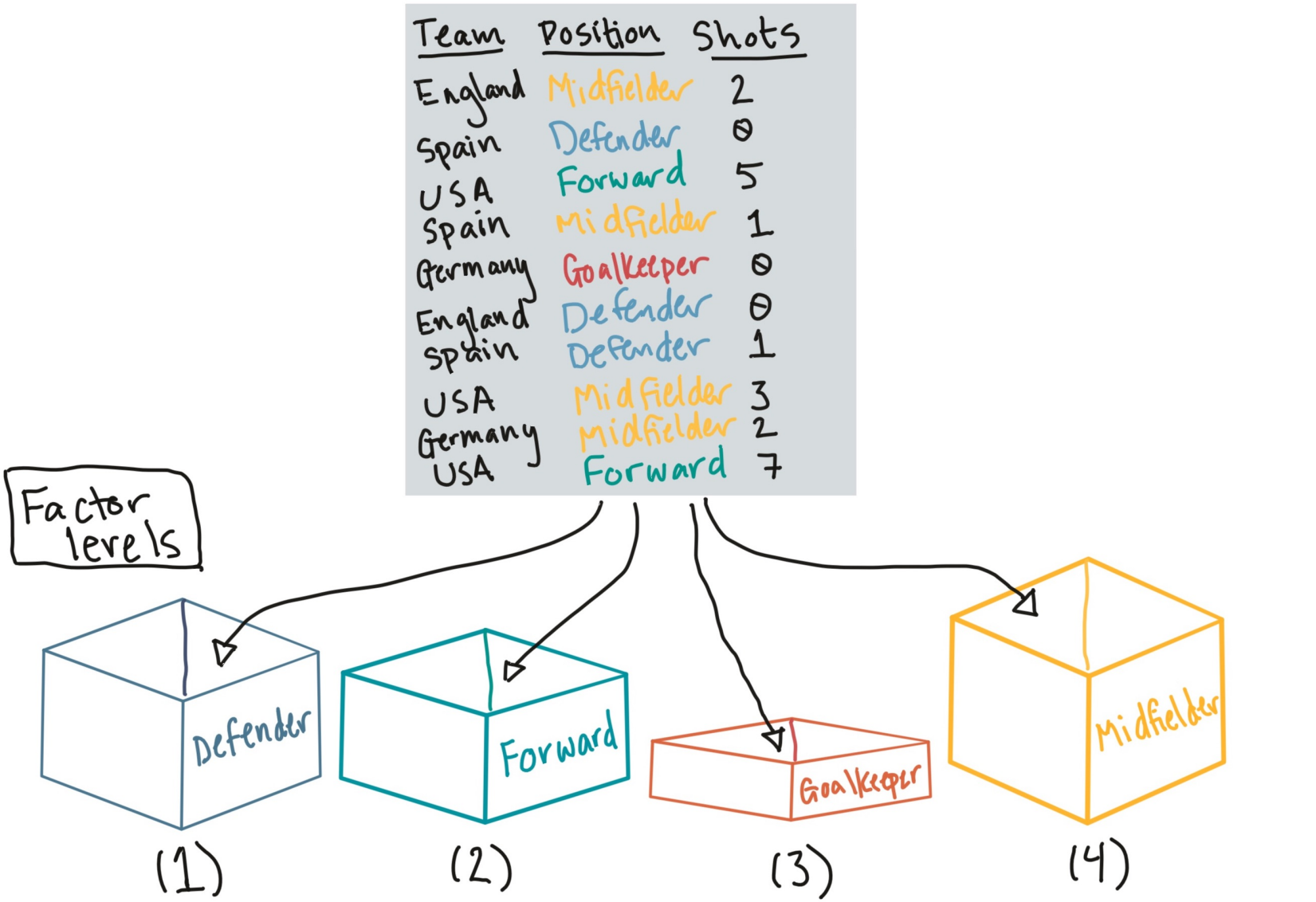
Working with factors

Working with factors

Hadley Wickham has developed a package called `forcats` that helps you work with factors.

```
library("forcats")
```

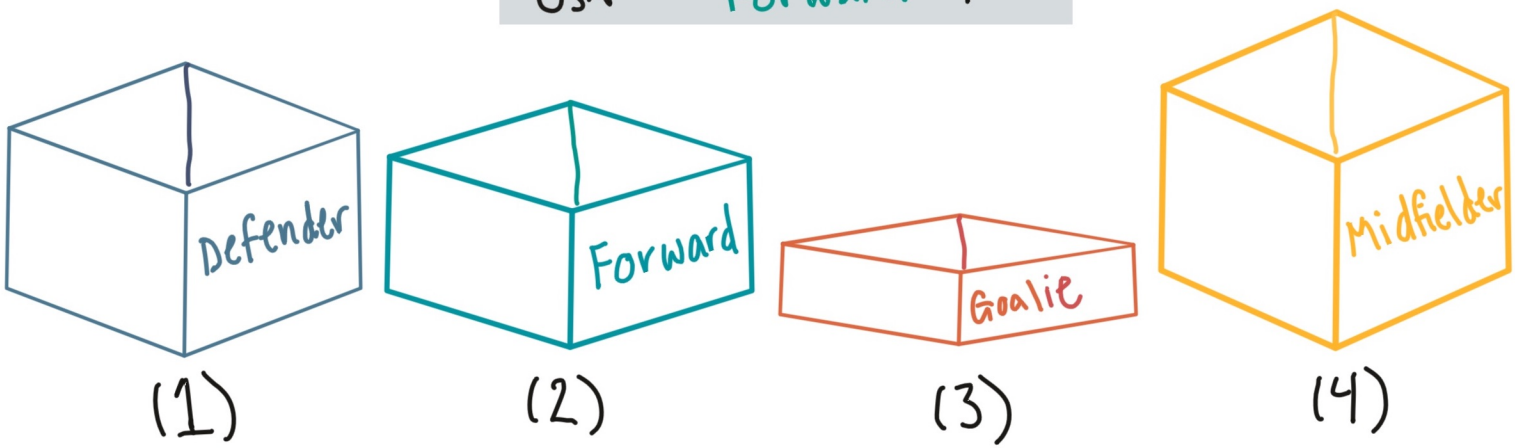
Factors


Team Position Shots
England Midfielder 2
Spain Defender 0
USA Forward 5
Spain Midfielder 1
Germany Goalkeeper 0
England Defender 0
Spain Defender 1
USA Midfielder 3
Germany Midfielder 2
USA Forward 7
Factor levels
Defender
Forward
Goalkeeper
Midfielder
(1)
(2)
(3)
(4)

fct_recode

```
fct_recode(.f = Position, Goalie = "GoalKeeper")
```

Team	Position	Shots
England	Midfielder	2
Spain	Defender	0
USA	Forward	5
Spain	Midfielder	1
Germany	Goalie	0
England	Defender	0
Spain	Defender	1
USA	Midfielder	3
Germany	Midfielder	2
USA	Forward	7



fct_recode

The `fct_recode` function can be used to change the labels of a factor. In base R, you can do this using `factor` with `levels` and `labels` to reset factor labels.

One big advantage is that `fct_recode` lets you change labels for some, but not all, levels. For example, here are the team names:

```
worldcup %>%
  filter(Team == "USA") %>%
  slice(1:3) %>% select(Team, Position, Time)
```

```
##           Team   Position Time
## Beasley    USA Midfielder   10
## Bocanegra  USA   Defender  390
## Bornstein  USA   Defender  200
```

fct_recode

If you just want to change "USA" to "United States", you can run:

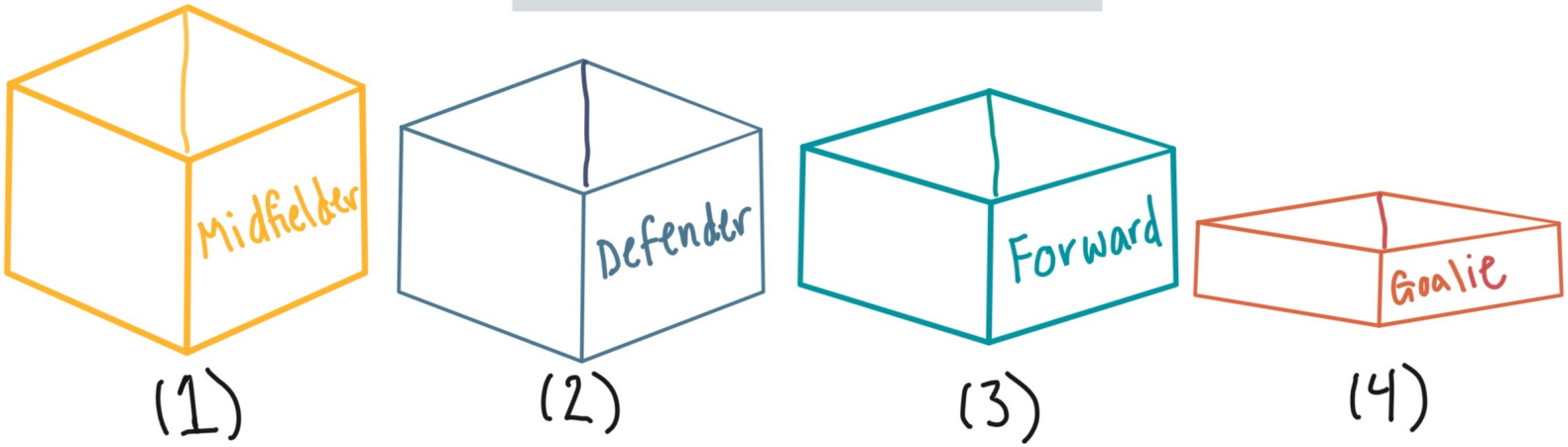
```
worldcup <- worldcup %>%
  mutate(Team = fct_recode(Team, `United States` = "USA"))
worldcup %>%
  filter(Team == "United States") %>%
  slice(1:3) %>% select(Team, Position, Time)
```

```
##            Team   Position Time
## 1 United States Midfielder   10
## 2 United States   Defender  390
## 3 United States   Defender  200
```

fct_infreq

fct_infreq(f = Position)

Team	Position	Shots
England	Midfielder	2
Spain	Defender	0
USA	Forward	5
Spain	Midfielder	1
Germany	Goalie	0
England	Defender	0
Spain	Defender	1
USA	Midfielder	3
Germany	Midfielder	2
USA	Forward	7



fct_infreq

You can use the `fct_infreq` function to reorder the levels of a factor from most common to least common:

```
levels(worldcup$Position)
```

```
## [1] "Defender"   "Forward"    "Goalkeeper" "Midfielder"
```

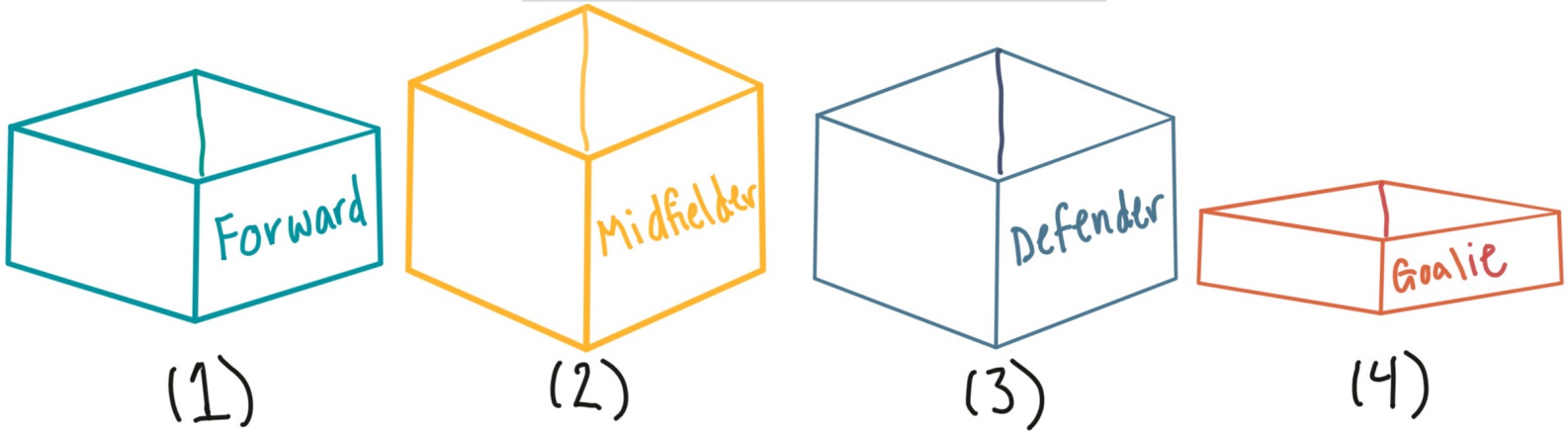
```
worldcup <- worldcup %>%
  mutate(Position = fct_infreq(Position))
levels(worldcup$Position)
```

```
## [1] "Midfielder" "Defender"   "Forward"    "Goalkeeper"
```

fct_reorder

fct_reorder(.f = Position, .x = Shots)

Team	Position	Shots
England	Midfielder	2
Spain	Defender	0
USA	Forward	5
Spain	Midfielder	1
Germany	Goalie	0
England	Defender	0
Spain	Defender	1
USA	Midfielder	3
Germany	Midfielder	2
USA	Forward	7



fct_reorder

If you want to reorder one factor by another variable (ascending order), you can use `fct_reorder` (e.g., homework 3). For example, to re-level `Position` by the median shots on goals for each position, you can run:

```
levels(worldcup$Position)
```

```
## [1] "Midfielder" "Defender"   "Forward"    "Goalkeeper"
```

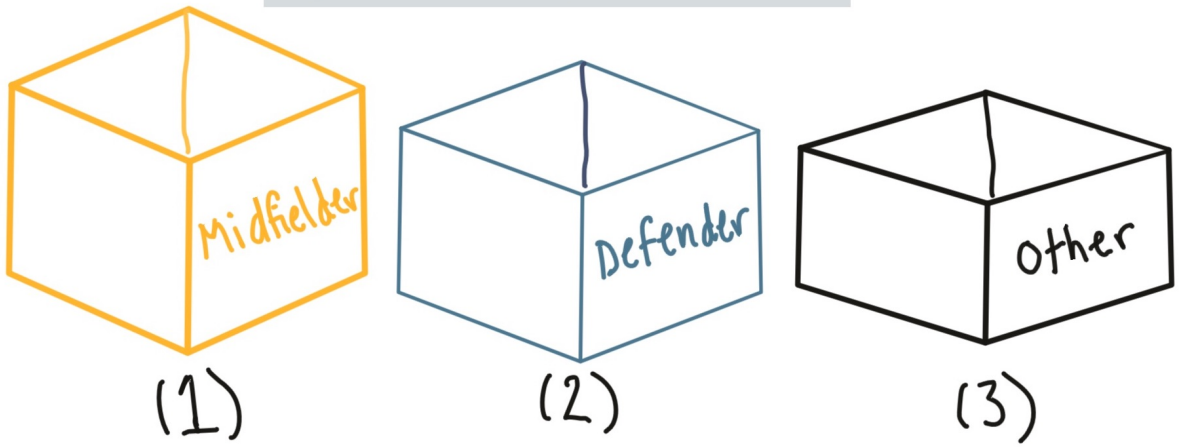
```
worldcup <- worldcup %>%
  mutate(Position = fct_reorder(Position, Shots))
levels(worldcup$Position)
```

```
## [1] "Goalkeeper" "Defender"   "Midfielder" "Forward"
```

fct_lump

fct_lump(.f = Position, n = 2)

Team	Position	Shots
England	Midfielder	2
Spain	Defender	0
USA	Other	5
Spain	Midfielder	1
Germany	Other	0
England	Defender	0
Spain	Defender	1
USA	Midfielder	3
Germany	midfielder	2
USA	Other	7



fct_lump

You can use the `fct_lump` function to lump uncommon factors into an "Other" category. For example, to lump the two least common positions together, you can run (`n` specifies how many categories to keep outside of "Other"):

```
worldcup %>%
  mutate(Position = fct_lump(Position, n = 2)) %>%
  count(Position)
```

```
##      Position   n
## 1    Defender 188
## 2 Midfielder 228
## 3       Other 179
```