

## Week 5: Probability Topics

### Example 1

Researchers interviewed people who could remember their dreams and recall which side they slept on.

```
dat <- read.csv(url("https://nhorton.people.amherst.edu/is5/data/Nightmares.csv"),
                 skip = 1)
head(dat)
```

```
##   Side Dream
## 1    L     N
## 2    L     N
## 3    L     N
## 4    L     N
## 5    L     N
## 6    L     N
```

We can organize the data into a two-way table.

```
table(dat)
```

```
##      Dream
## Side  n  N
##   L 13  9
##   R 35  6
```

### Example 2

We can arrange the counts of how many pet-owning OkCupid participants have dogs, cats, or both.

```
dat <- read.csv(url("https://nhorton.people.amherst.edu/is5/data/OKCupid_CatsDogs.csv"),
                 skip = 1)
head(dat)
```

```
##   CatsDogsBoth Gender drugsY.N smokesY.N
## 1                M      No      yes
## 2                M      Yes      no
## 3   Has cats      M                no
## 4                M                no
## 5                M      No      no
## 6                M                no
```

To make a two-way table of pets and gender, we do the following.

```
table(dat$CatsDogsBoth, dat$Gender)
```

```
##
##           F      M
##   16377 29274
## Has Both   897   577
## Has cats 3412 2388
## Has dogs 3431 3587
```

### Follow Up

The Titanic data set is below.

```
dat <- read.csv(url("https://nhorton.people.amherst.edu/is5/data/Titanic.csv"))
names(dat)
```

```
## [1] "Name"          "Survived"      "Boarded"       "Class"         "MWC"
## [6] "Age"           "Adut_or_Chld" "Sex"           "Paid"          "Ticket_No"
## [11] "Boat_or_Body" "Job"           "Class_Dept"    "Class_Full"
```

Construct a two-way table of class and “survived.” Hint: See Wang page 7.

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