lab-07-simpsons.Rmd

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Packages

```
library(tidyverse)
library(mosaicData)
```

Exercises

1.

```
?Whickham
```

Your answer: the data is observational as description states that is based on age, and mortality which are all observational events and not produced via experiment.

2.

```
nrow(Whickham)
```

```
## [1] 1314
```

Your answer; There are 1,314 obs. As we Know every row is an obs

3.

```
names(Whickham)
```

```
## [1] "outcome" "smoker"  "age"
```

Your answer:
There are 3 variables, “outcome”, “smoker”, “age”.

```
unique(Whickham$outcome)
```

```
## [1] Alive Dead
## Levels: Alive Dead
```

```
unique(Whickham$smoker)
```

```
## [1] Yes No
## Levels: No Yes
```

```
unique(Whickham$age)
```

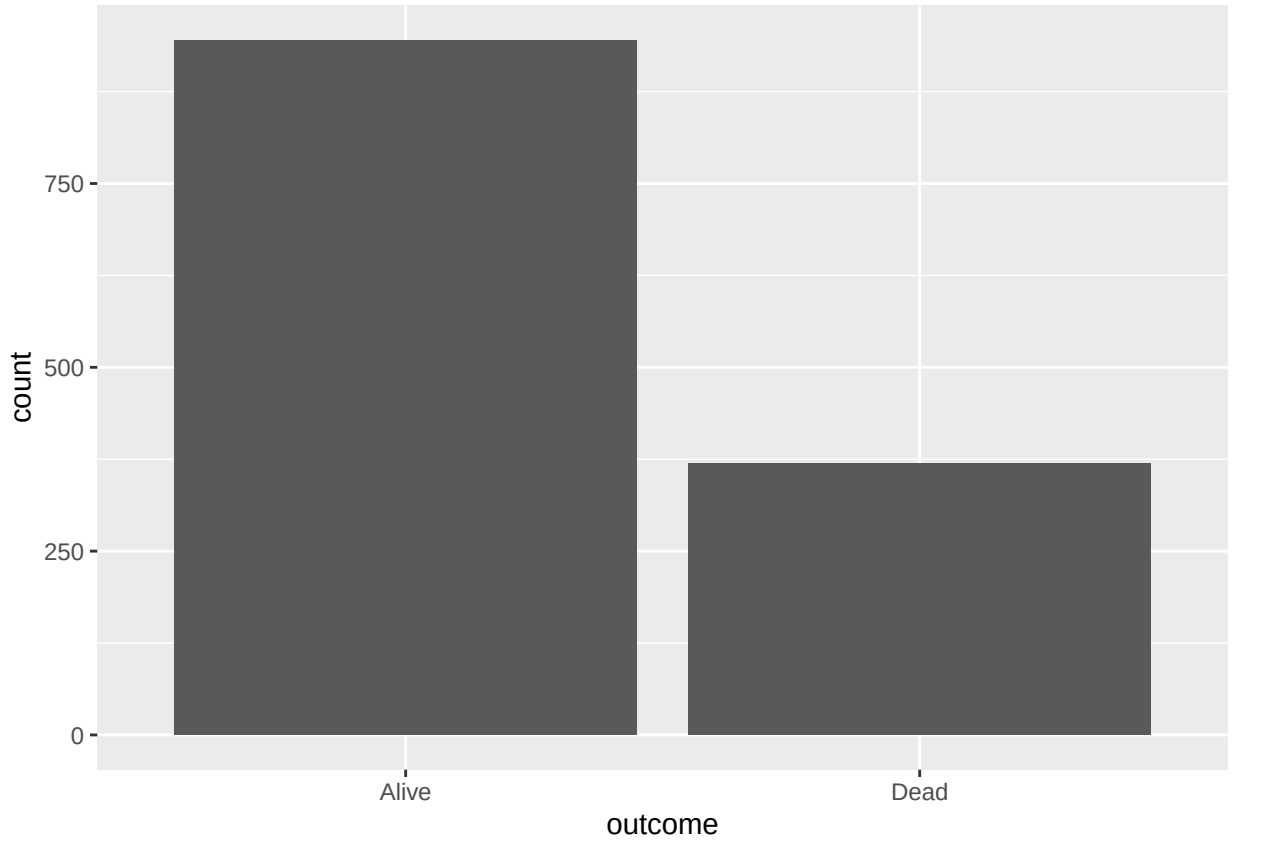
```
##  [1] 23 18 71 67 64 38 45 76 28 27 34 20 72 48 66 30 33 68 61 43 47 22 39 80 59
## [26] 56 62 51 32 60 37 36 50 55 73 52 25 53 31 54 69 79 75 21 29 24 26 49 84 40
## [51] 44 74 46 35 77 57 42 81 19 63 78 83 82 70 58 41 65
```

Your answer: Using the “unique()” function on the 3 variables we could see that “outcome” only takes Alive or Dead vslue, which makes it categorical non-ordinal. “smoker” only takes Yes or No, which also makes it

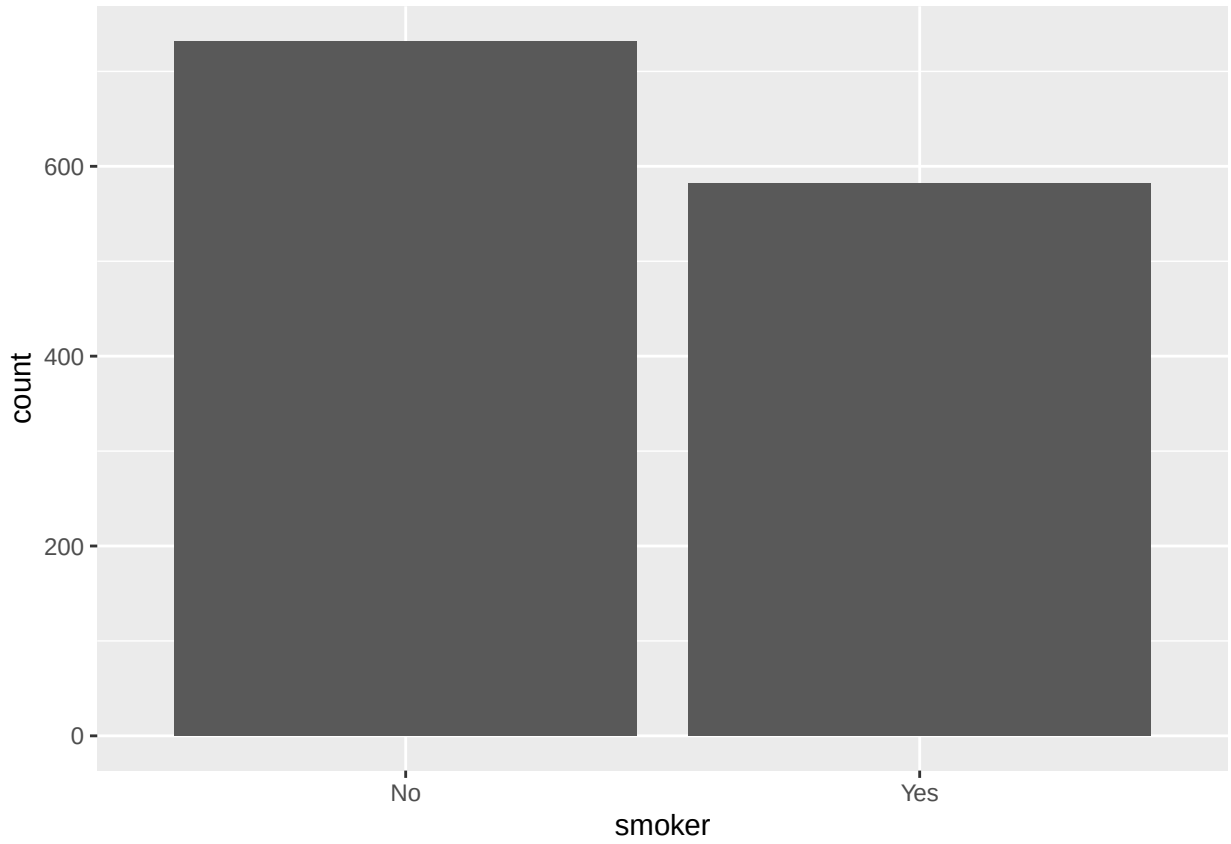
categorical non-ordinal. Age is numerical continous data.

One of the best ways to visualise categorical data is through the use of bar charts.

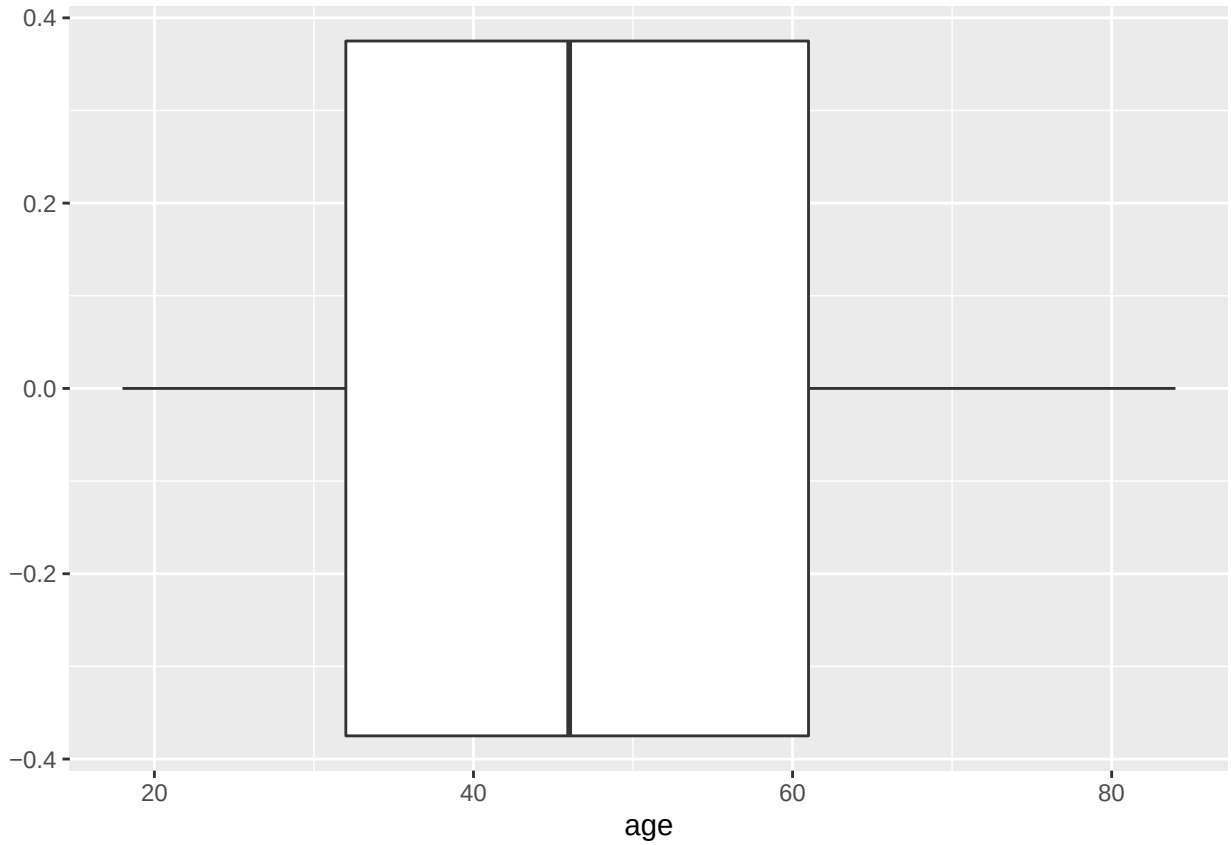
```
ggplot(Whickham, aes(x = outcome)) +
  geom_bar()
```




```
ggplot(Whickham, aes(x = smoker)) +
  geom_bar()
```

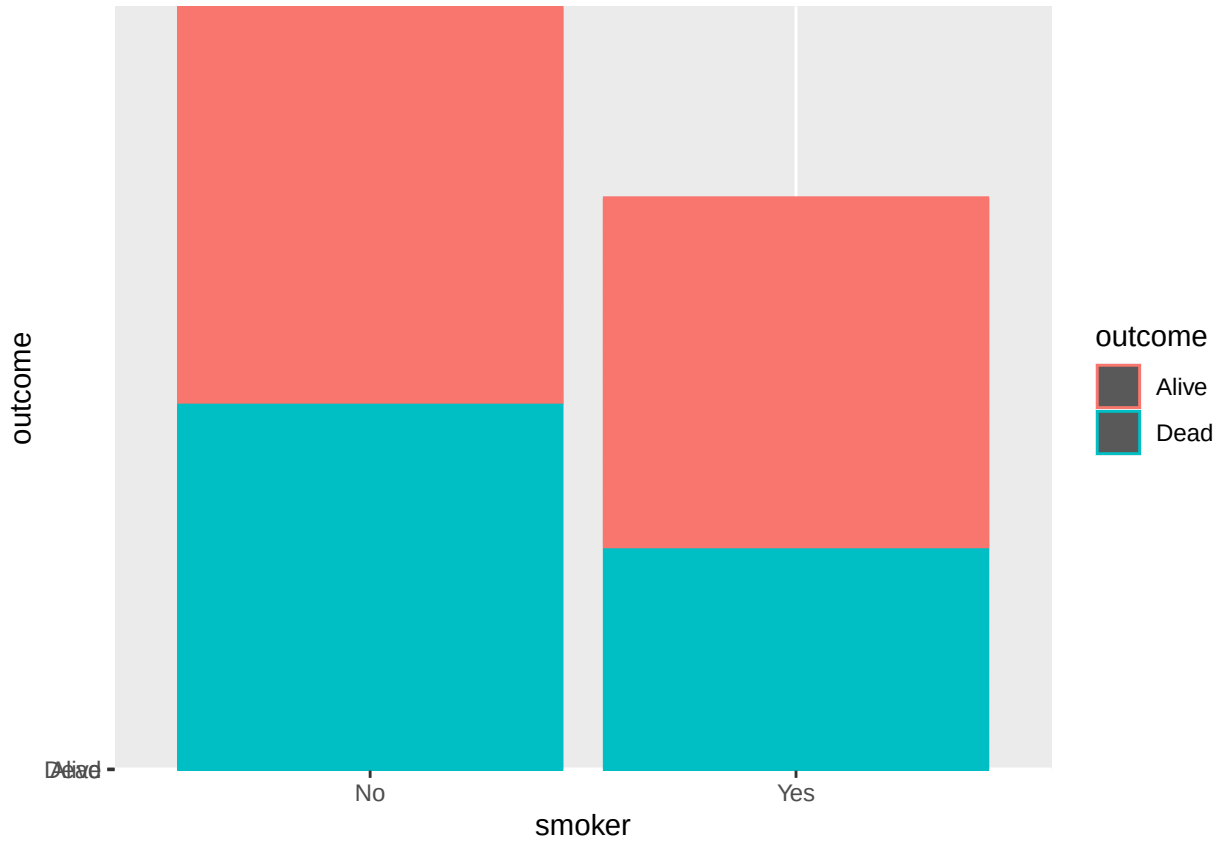



```
ggplot(Whickham, aes(x = age)) +
  geom_boxplot()
```



4. Smoking is a bad habit if it continues. It can lead to death and increase the proportion.

```
ggplot(data=Whickham, aes(x=smoker, y=outcome, color=outcome)) + geom_bar(stat="identity")
```



Knit, commit, and push to github.

5.

```
Whickham %>%
  count(smoker, outcome)
```

```
##   smoker outcome   n
## 1     No   Alive 502
## 2     No    Dead 230
## 3    Yes   Alive 443
## 4    Yes    Dead 139
```

6.

7.

Knit, commit, and push to github.