HW1

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1 Bar Chart

Let's load the data:

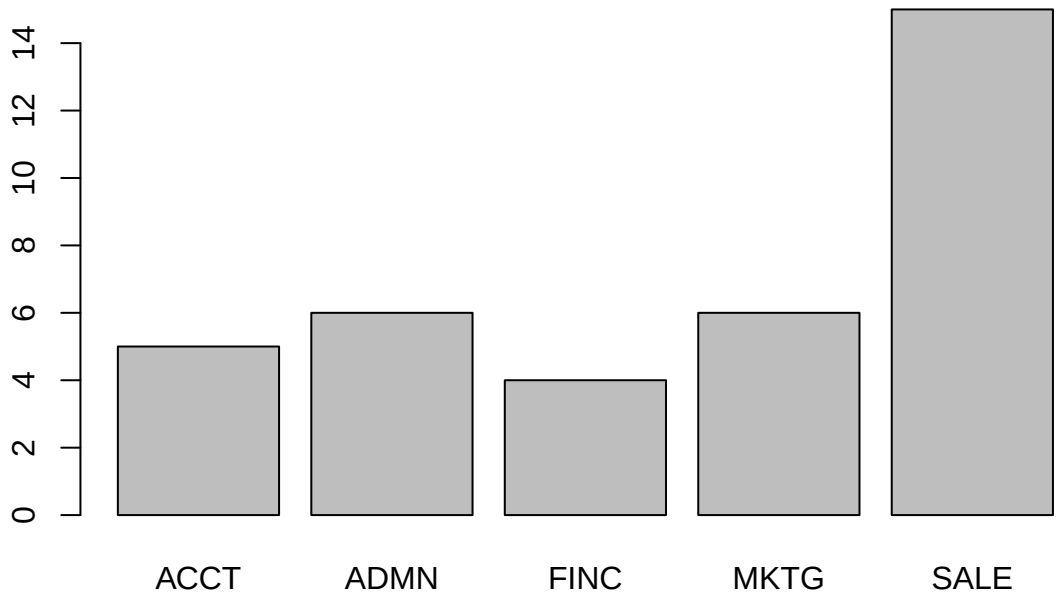
```
d <- rd("Employee", format="lessR")
```

```
##
## >>> Suggestions
## Details about your data, Enter:  details()  for d, or  details(name)
##
## Data Types
## ------------------------------------------------------------
## character: Non-numeric data values
## integer: Numeric data values, integers only
## double: Numeric data values with decimal digits
## ------------------------------------------------------------
##
##     Variable                  Missing  Unique
##         Name     Type  Values  Values  Values   First and last values
## ------------------------------------------------------------------------------------------
##  1     Years   integer     36       1      16   7  NA  15 ... 1  2  10
##  2    Gender character     37       0       2   M  M  M ... F  F  M
##  3      Dept character     36       1       5   ADMN  SALE  SALE ... MKTG  SALE  FINC
##  4    Salary    double     37       0      37   53788.26  94494.58 ... 56508.32  57562.36
##  5    JobSat character     35       2       3   med  low  low ... high  low  high
##  6      Plan   integer     37       0       3   1  1  3 ... 2  2  1
##  7       Pre   integer     37       0      27   82  62  96 ... 83  59  80
##  8      Post   integer     37       0      22   92  74  97 ... 90  71  87
## ------------------------------------------------------------------------------------------
```

a.

Here's a barplot of the number of employees in each department using the base R plot:

```
barplot(table(d$Dept))
```



b.

Here's the same data in table form:

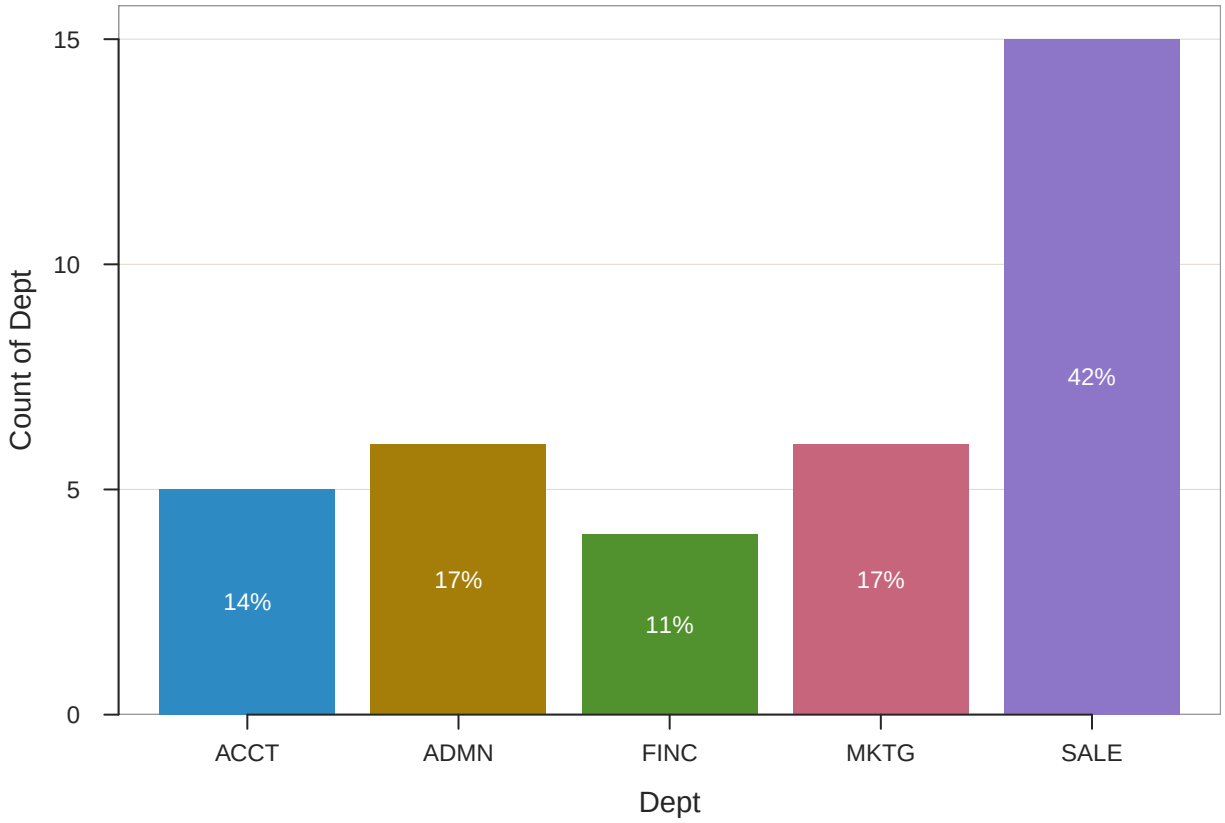
```
table(d$Dept)
```

```
##
## ACCT ADMN FINC MKTG SALE
##    5    6    4    6   15
```

c.

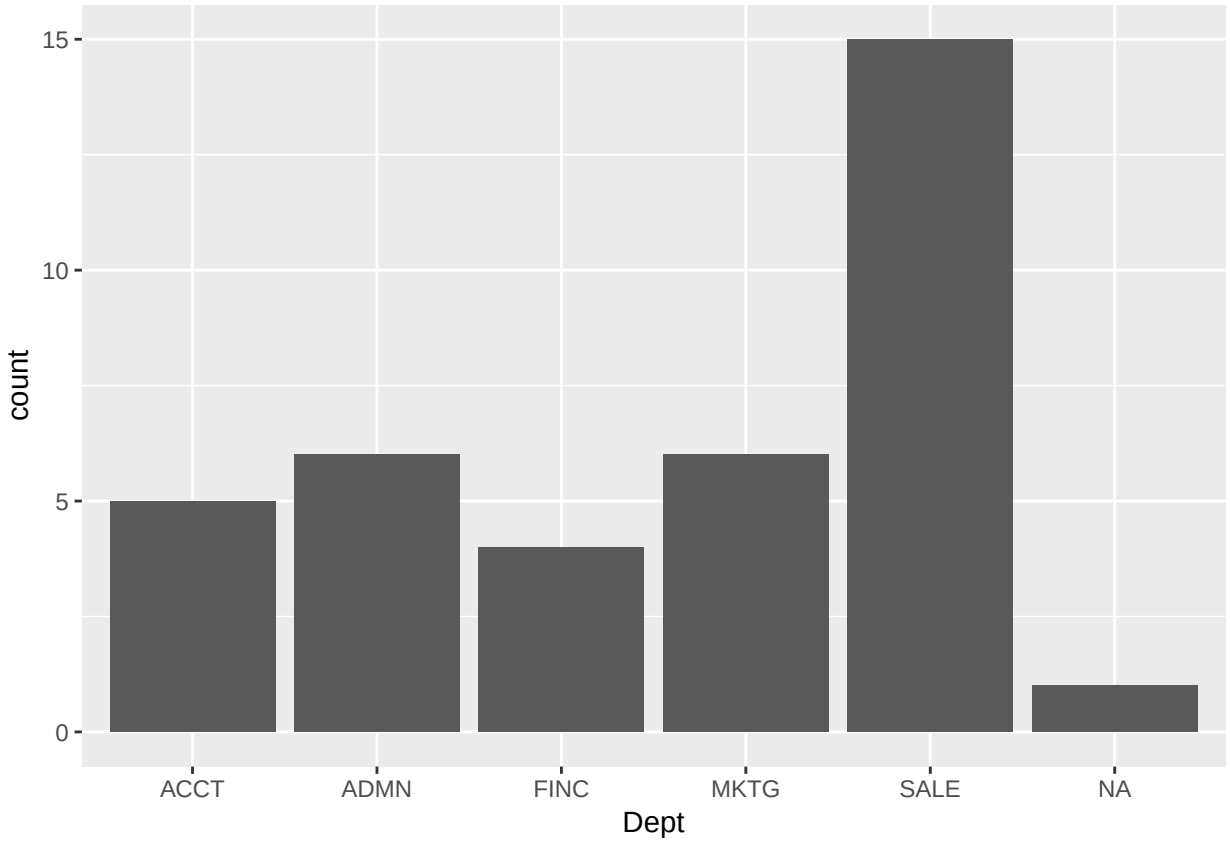
Here's the same chart in lessR:

```
BarChart(Dept, quiet=TRUE)
```



and ggplot2:

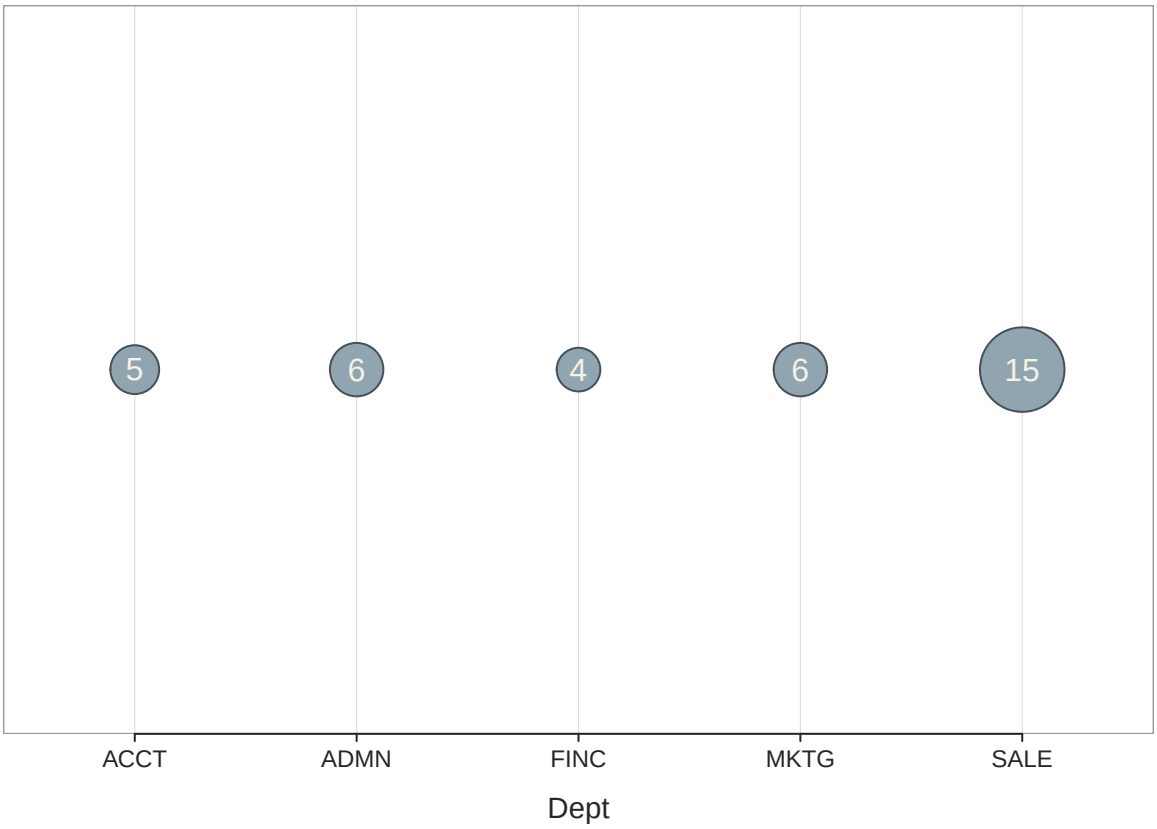
```
ggplot(d, aes(Dept))+geom_bar()
```



d.

Here's the lessR 1d bubble plot:

```
Plot(Dept, quiet=TRUE)
```



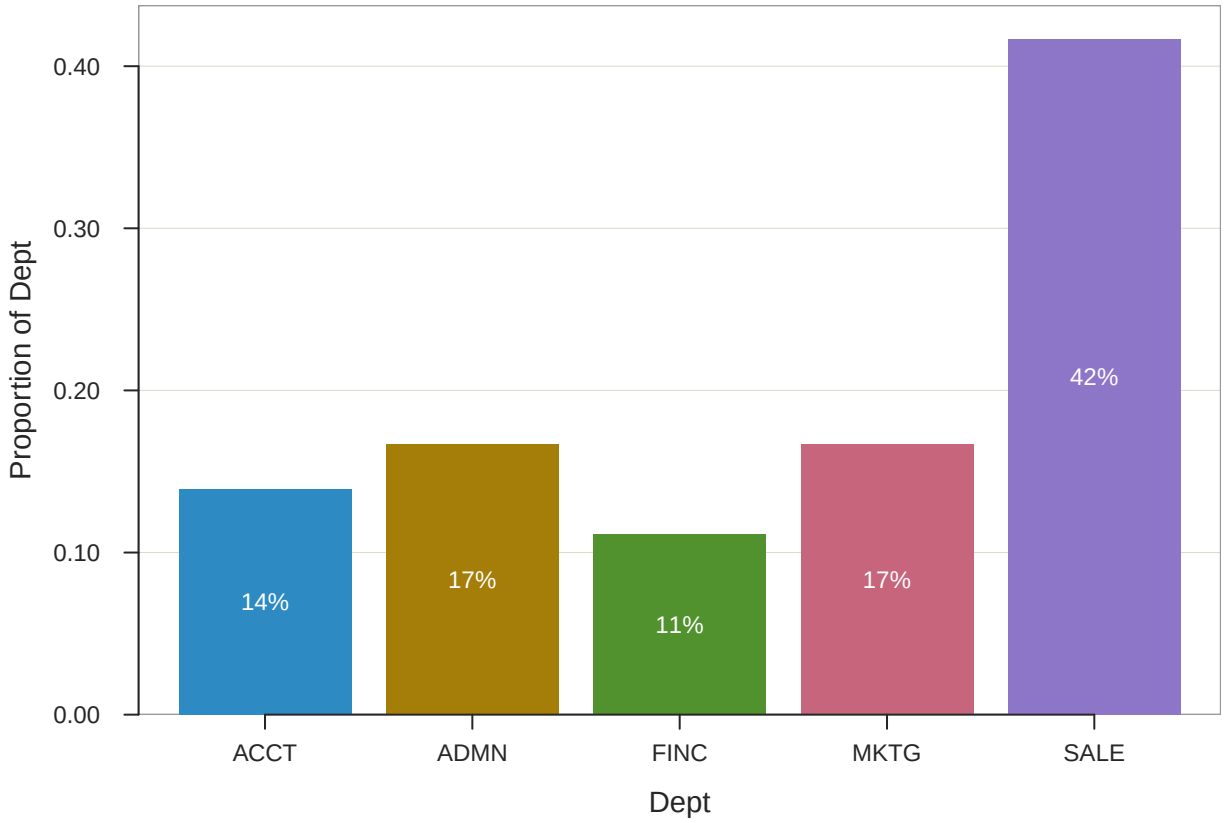
e.

The bubble chart is more compact and there could be applications where showing relative size as an area as opposed to a length is useful. The bar chart is more readable and more common, so it will make more sense to most readers.

h. (no f/g?)

Here's the bar chart with proportions instead of counts:

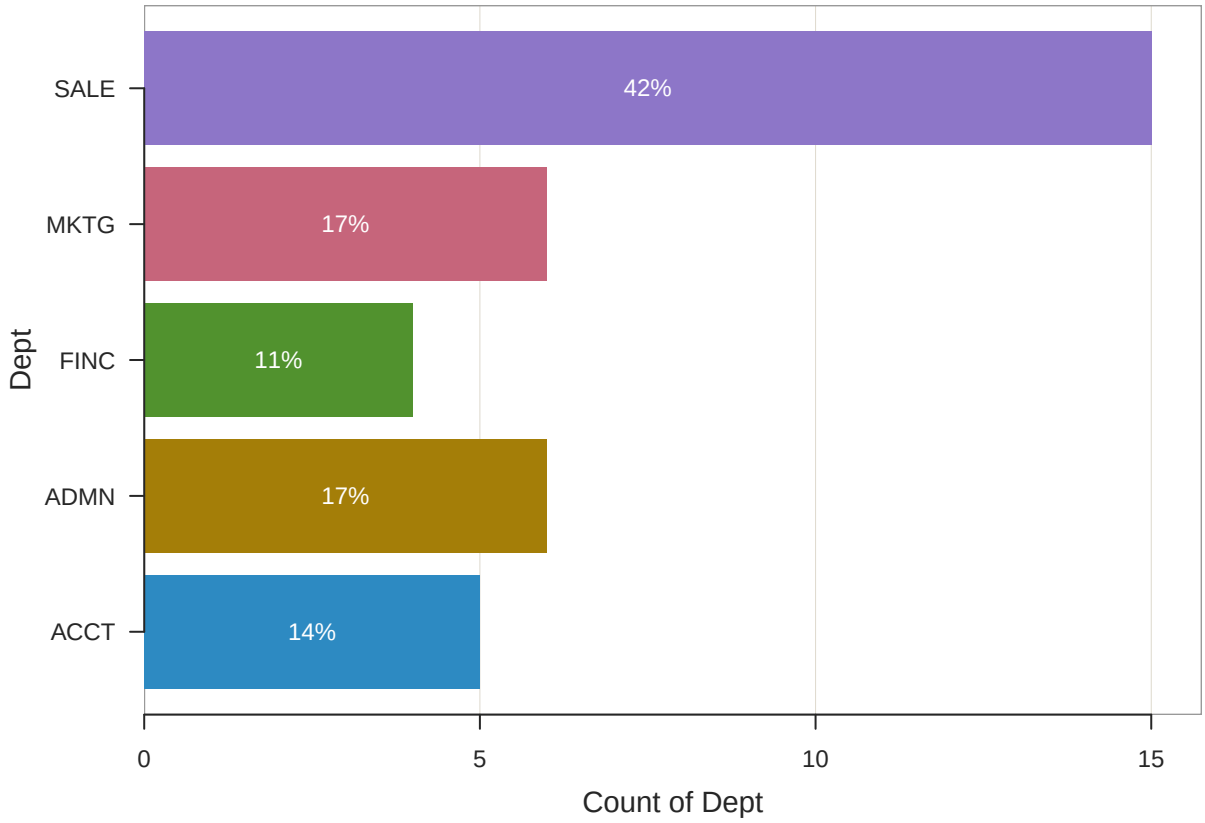
```
BarChart(Dept, quiet=TRUE, stat.x="proportion")
```



i.

With horizontal bars:

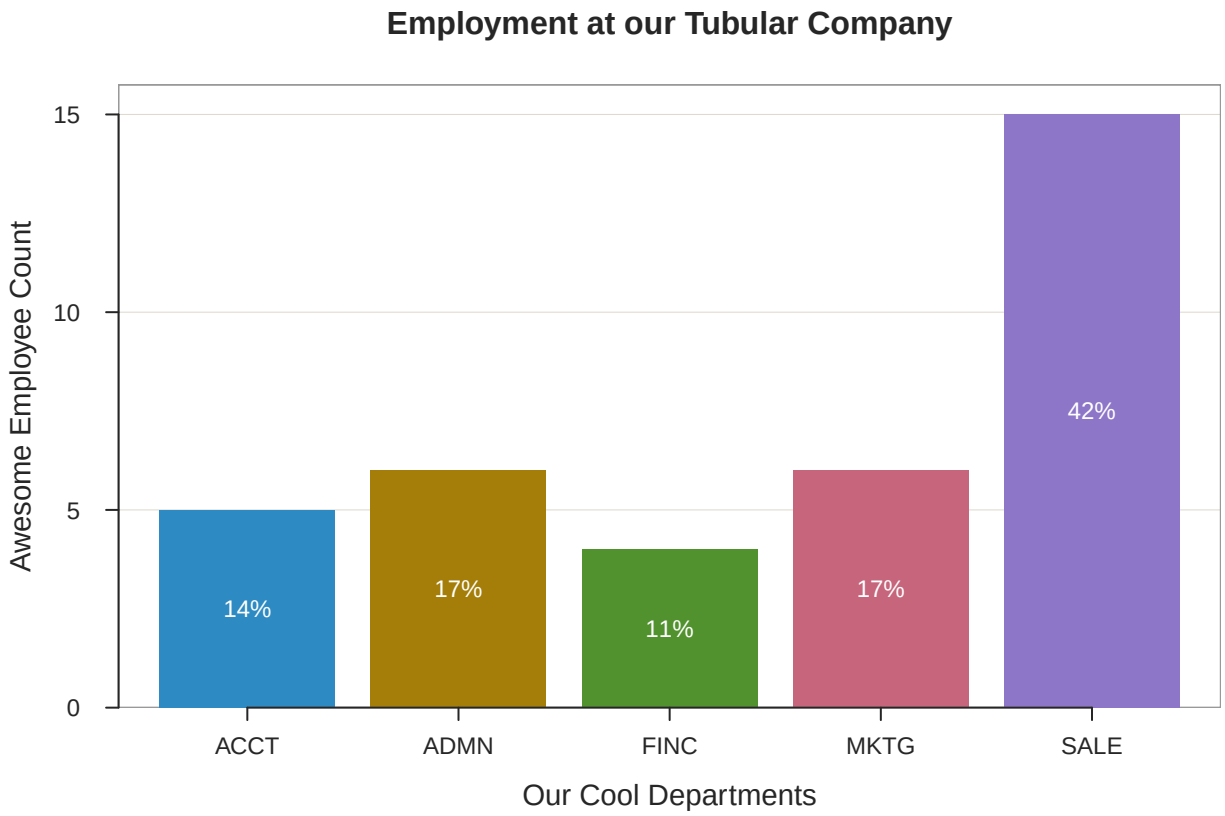
```
BarChart(Dept, quiet=TRUE, horiz=TRUE)
```



j.

Now providing a title and custom axis lables:

```
BarChart(Dept, quiet=TRUE, xlab="Our Cool Departments", ylab="Awesome Employee Count", main="Employment
```



2. R Factors

Let's load the survey data:

```
surveydata<-rd("460S14.csv", quiet=TRUE)
```

```
head(surveydata)
```

```
##   Learn_1 Learn_2 Learn_3 Learn_4 Feel_1 Feel_2 Feel_3 Feel_4 Past_1
## 1       3       5       7       6      6      7      5      7      3
## 2       4       4       3       6      2      6      6      6      4
## 3       3       3       7       3      5      3      4      1      4
## 4       4       4       5       5      2      6      4      5      2
## 5       6       6       5       6      3      6      4      3      2
## 6       7       7       2       7      5      7      7      7      3
##   Past_2 Past_3 Past_4 Past2_1 Gender Class Learn2_1 Learn2_2 Learn2_3
## 1      4      3      4       6      2     2       59       78       95
## 2      4      4      4       6      1     2       30       50       60
## 3      2      3      2       7      2     2       NA       NA      100
## 4      2      1      2       6      1     2       50       39       70
## 5      3      4      3      13      2     2       60      100       50
## 6      1      2      2       7      1     2      100      100       10
##   Learn2_4
## 1       53
## 2       50
## 3       NA
```

```
## 4       60
## 5       91
## 6      100
```

```
length(surveydata$Learn_1)
```

```
## [1] 31
```

a.

We can see from the length of the first column that there are 31 rows of data, so that's probably the number of student responses we got.

b.