# Data 8, Lab 4

Plots and Functions

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### Histogram

- Visualize the distribution of a single numerical variable
  - x-axis = Units of the numerical variable we are visualizing
  - y-axis = Density: How "clustered" together the data is in a bin
- Density analogy:
  - 15 balls, 2 bins along a number line: numbers from 0-2 and 2-10
  - Throw 10 balls in bin from 0-2 and 5 balls in bin from 2-10
  - The balls in the 0-2 bin will be more "tightly clustered," i.e., have greater density
- Area of a bar tells us what percentage of the data is in the bar
  - The area of all the bars in the histogram is 100%
- Warning: Bins include the left endpoint, but not the right!



#### **Functions**

```
Name Argument names (parameters)

def spread(values):

Return expression

Body return max(values) - min(values)
```



#### Announcements

- HW4 released and due 2/20
- Project 1 is being released!
  - Checkpoint Due: 2/21
  - Due: 2/28
- Fill out project partners form
  - Even if you're working alone!
  - https://tinyurl.com/data8-144



## Worksheet Q1 Graph

https://www.wired.com/2008/02/macworlds-iphon/

