



**DSFA**  
Spring 2019

# Lecture 7

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Functions

# Announcements

# Comparing Histograms

# Overlaid Graphs

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For visually comparing two populations

(Demo)

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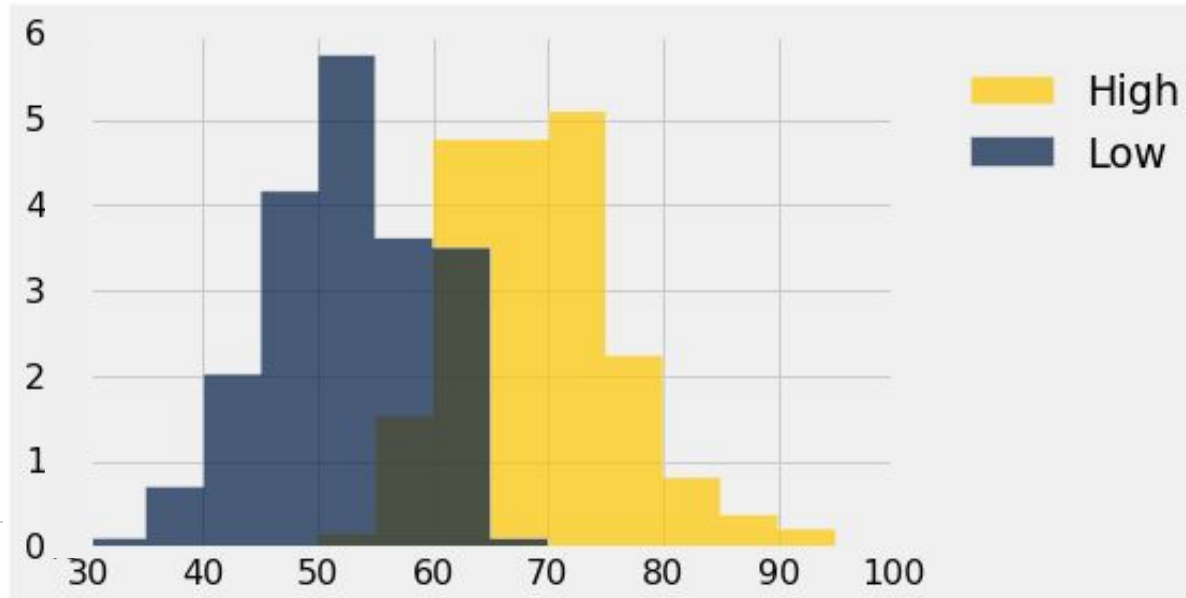
# Discussion Question

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This histogram describes a **year** of daily temperatures

Try to answer these questions:

- What proportion of days had a high temp in the range 60-69?
- What proportion had a low of 45 or more?
- How many days had a difference of more than 20 degrees between their high & low temperatures?

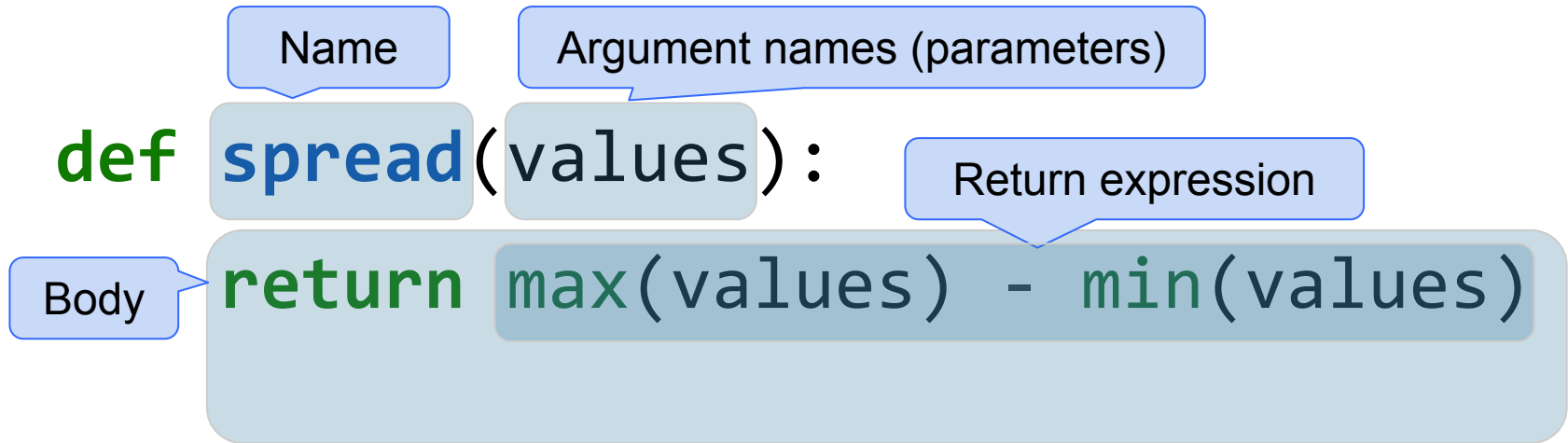


# Defining Functions

# Def Statements

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User-defined functions give names to blocks of code



(Demo)

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# Discussion Question

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What does this function do? What kind of input does it take? What output will it give? What's a reasonable name?

```
def f(s):  
    return np.round(s / sum(s) * 100, 2)
```

(Demo)

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**Apply**

# Apply

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The `apply` method creates an array by calling a function on every element in input column(s)

- First argument: Function to apply
- Other arguments: The input column(s)

```
table_name.apply(function_name, 'column_label')
```

(Demo)

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# Example: Prediction

# Sir Francis Galton

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- 1822 - 1911 (knighted in 1909)
- A pioneer in making predictions
- Particular interest in heredity
- Charles Darwin's half-cousin

(Demo)

