

# Stat 101L: Lecture 6

## Quantitative Data

- ◆ Who? Cans of cola.
- ◆ What? Weight (g) of contents.

368, 351, 355, 367, 352, 369, 370, 369  
370, 355, 354, 357, 366, 353, 373, 365  
355, 356, 362, 354, 353, 378, 368, 349

---

---

---

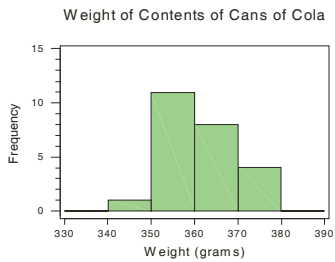
---

---

---

---

## Weight of Contents



2

---

---

---

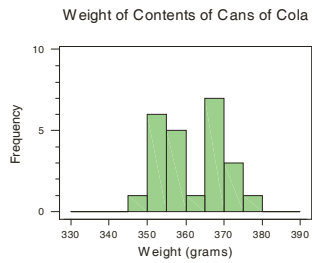
---

---

---

---

## Weight of Contents



3

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

**Weight of Contents**

- ◆ Who?
  - Cans of cola.
- ◆ What?
  - Weight of contents (g)
  - Type of cola (Regular or Diet)

4

---

---

---

---

---

---

---

**Weight of Contents**

◆ Regular Cola	◆ Diet Cola
36   2	34
36*   5678899	34*   9
37   003	35   123344
37*   8	35*   55567

5

---

---

---

---

---

---

---

**Comparing Distributions**

- ◆ How do the distributions compare in terms of
  - Shape?
  - Center?
  - Spread?

6

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

## Comparing Groups

◆ Regular	◆ Diet
- Min: 362 g	- Min: 349 g
- Q <sub>L</sub> : 366.5 g	- Q <sub>L</sub> : 352.5 g
- Med: 368.5 g	- Med: 354 g
- Q <sub>U</sub> : 370 g	- Q <sub>U</sub> : 355 g
- Max: 378 g	- Max: 357 g

7

---

---

---

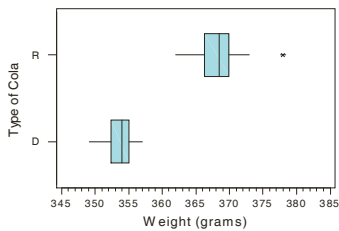
---

---

---

---

## Comparing Groups



8

---

---

---

---

---

---

---

## Comparing Groups

◆ Regular	◆ Diet
- Med: 368.5 g	- Med: 354 g
- Mean: 368.8 g	- Mean: 353.7 g
- Range: 16 g	- Range: 8 g
- IQR: 3.5 g	- IQR: 2.5 g
- Std dev: 4.03 g	- Std dev: 2.23 g

9

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

## JMP

- ◆ The data table is arranged so that rows are cases (Who?) and columns are variables (What?).
- ◆ Before entering data into JMP answer the questions Who? and What?

10

---

---

---

---

---

---

---

---

## JMP – Data Table

	Weight	Type of Cola
1	368	R
2	367	R
⋮	⋮	⋮
11	378	R
12	368	R
13	351	D
14	355	D
⋮	⋮	⋮
23	353	D
24	349	D

11

---

---

---

---

---

---

---

---

## JMP – Analyze

- ◆ Analyze – Distribution  
– Y, Columns: Weight

12

---

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

## JMP – Output

- ◆ Distribution
  - Stack
- ◆ Weight
  - Display Options: Horizontal Layout
  - Histogram Options: Count Axis

13

---

---

---

---

---

---

---

---

## JMP – Output

- ◆ JMP will automatically select the bins. You can change these by
  - Right click on Weight axis;
  - Axis Settings
    - Minimum: 340
    - Maximum: 380
    - Increment: 10

14

---

---

---

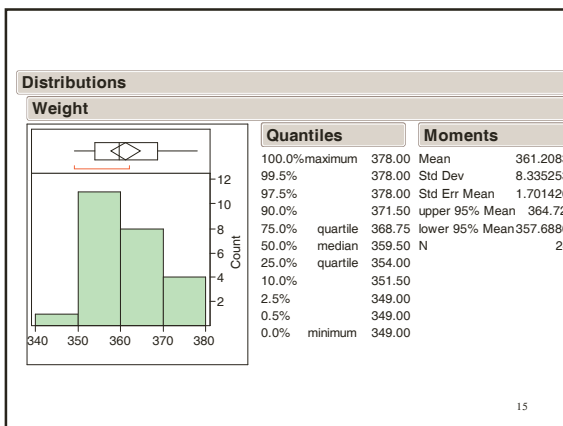
---

---

---

---

---



15

---

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

## JMP – Analyze

- ◆ Analyze – Distribution
  - Y, Columns: Weight
  - By: Type of Cola

16

---

---

---

---

---

---

---

---

## JMP – Output

- ◆ Distribution
  - Uniform Scaling
  - Stack
- ◆ Weight
  - Display Options: Horizontal Layout
  - Histogram Options: Count Axis

17

---

---

---

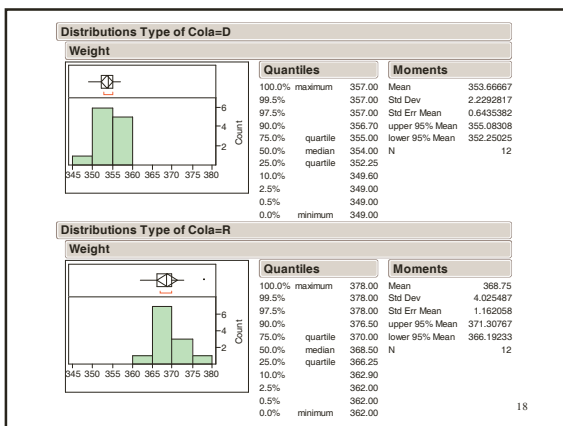
---

---

---

---

---



18

---

---

---

---

---

---

---

---

# Stat 101L: Lecture 6

## JMP – Analyze

- ◆ Analyze – Fit Y by X
  - Y, Response: Weight
  - X, Factor: Type of Cola
- ◆ Note: Y is numerical/continuous  
X is character/nominal

19

---

---

---

---

---

---

---

---

## JMP – Output

- ◆ One way analysis of Weight by Type of Cola
  - Display Options – Box Plots, Mean Lines, Grand Mean
  - Highlight (click on, hold down shift if more than one) potential outliers
  - Means and Std Dev

20

---

---

---

---

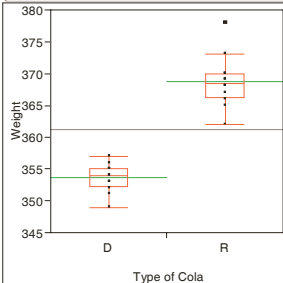
---

---

---

---

Oneway Analysis of Weight By Type of Cola



Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
D	12	353.667	2.22928	0.6435	352.25	355.08
R	12	368.750	4.02549	1.1621	366.19	371.31

---

---

---

---

---

---

---

---