

# Flipping the Lecture

A 5-minute Teaching Model

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# Flipping the Lecture

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# Course Background

- Blended/Hybrid sections of 2 introductory business classes
- Analytics I – about half IT and half Introductory statistics
- Analytics II – traditional introductory statistics
- Both are required in the business core
- Part of 3 course sequence

# Course Background

	T/R	
Time	Class	Instructor
8	INFO 1010 - 2	Paige - Online?
8	INFO 2020 -3	4
8	INFO 1020 - 6	3
8	INFO 1020 - 7	3
8		
10	STAT 2800-3	Scott ? 2 hybrid?
10	STAT 2800 - 4	Scott ? 2 hybrid?
10	INFO 1020 - 8	Andrew
10	INFO 2020-4	Stacy
10		
12		
12	STAT 2800 - 4	1
12	INFO 1020 - 9	Scott Hybrid
12	INFO 1020 - 10	Scott these need 2 friday test days during quarter
12	INFO 2020 -5	Stacy
14	INFO 1020 - 11	Andrew
14	STAT 2800-5	1
14	INFO 1010-3	Dick
14		

- Offered in multiple formats
- Online
- Hybrid
- Face to Face
- About 500 first-year students per year across many ~ 20 sections

# Course Setup

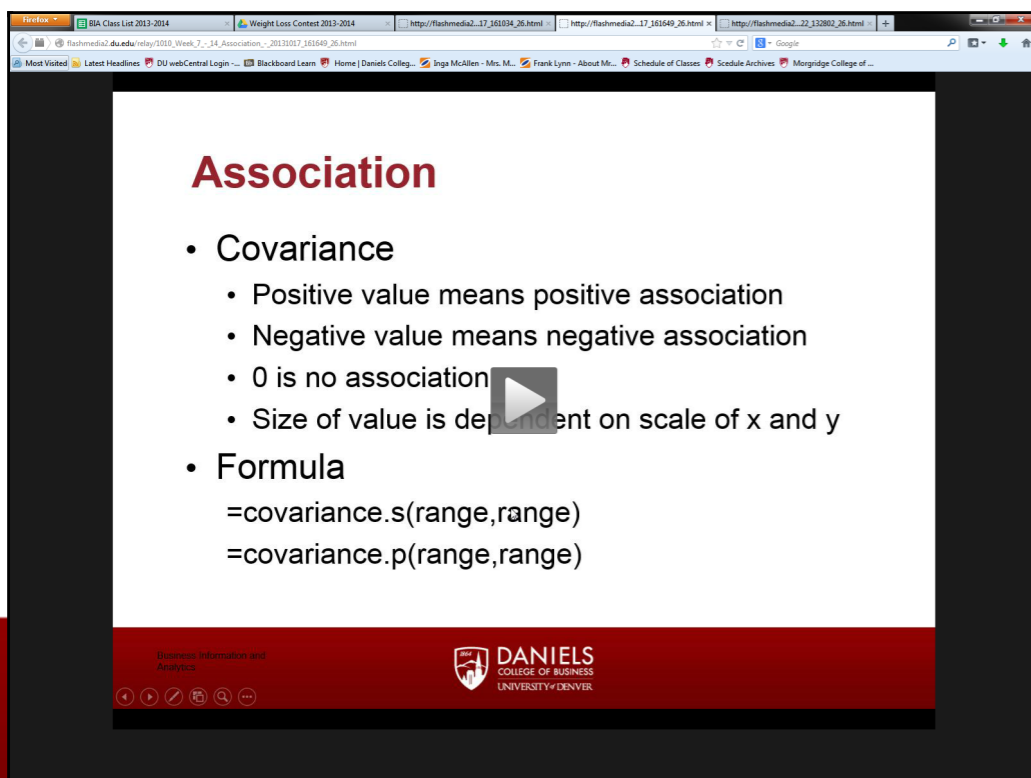
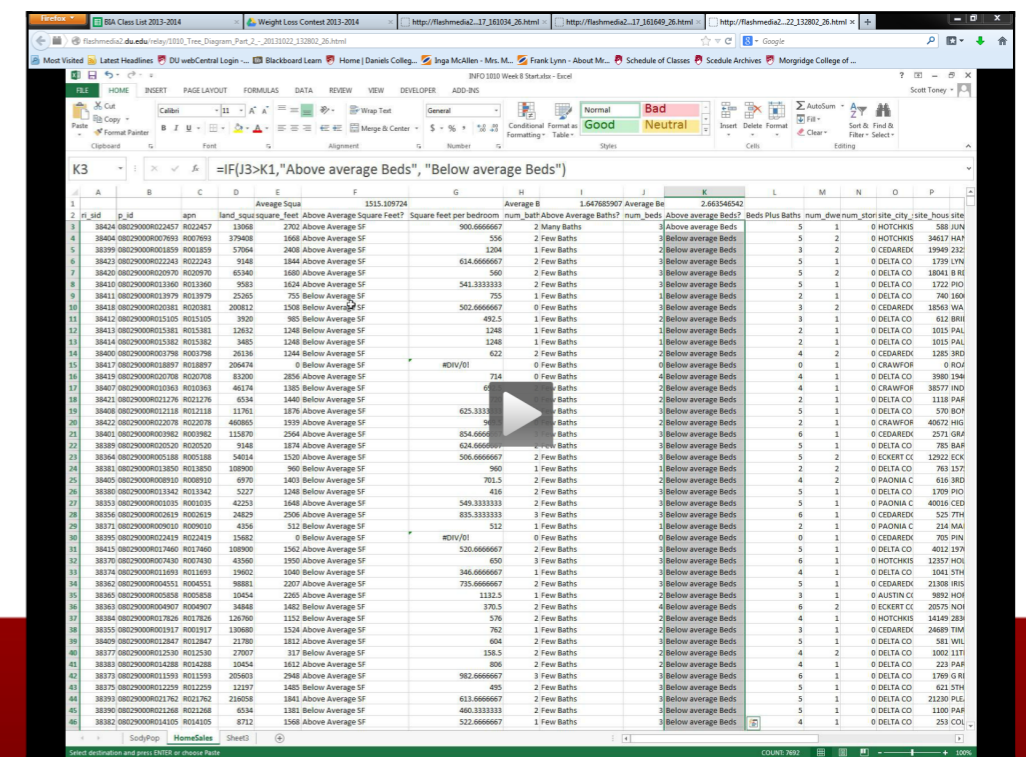
- Hybrid setup – lectures are online
- Homework, reading, and quizzes are done before class meeting ( know what they know before class)
- Flipped classroom – class time used for deeper exploration/group work
- No lecture in class (Ok, maybe just a bit)
- Lots of Pluses

# Online Lectures

- Around 5 minutes each
- PowerPoint, Excel, and Online Links
- Screencasts (Think Kahn Academy)
- 3 to 15 “Lectures” per week

**Association**

- Covariance
  - Positive value means positive association
  - Negative value means negative association
  - 0 is no association
  - Size of value is dependent on scale of x and y
- Formula
  - =covariance.s(range,range)
  - =covariance.p(range,range)

# Online Lecture Benefits

- Hybrid setup – Benefits
  - Content delivery at student pace
  - Fewer “deer in headlights”
  - Fewer “facebook faces”
  - Students are responsible for learning (they may not like this)
  - Class time is used better

# Why 5 minutes?

1010 Week 7 - 1 Intro	1:52
1010 Week 7 - 2 Mean Median Mod	4:56
1010 Week 7 - 3 Excel Mean Media	6:11
1010 Week 7 - 4 Percentiles and Qu	5:09
1010 Week 7 - 5 Dispersion	6:14
1010 Week 7 - 6 Excel Dispersion	5:45
1010 Week 7 - 7 COV and Shape	6:04
1010 Week 7 - 8 Excel Real Estate D	5:52
1010 Week 7 - 9 Excel Real Estate D	6:42
1010 Week 7 - 10 Data Analysis Toc	2:56
1010 Week 7 - 11 Z scores emperic	5:09
1010 Week 7 - 12 Chebychev's theo	3:04
1010 Week 7 - 13 Excel Standardize	5:48
1010 Week 7 - 14 Association	5:09
1010 Week 7 - 15 Excel Association	5:45

- Easily digestible by student?
- Reduced fear of re-recording
- But what if there is no break in my material?



# Technical Details

- Blackboard is my LMS
- Camtasia Relay is my main recording software (no editing)
- Camtasia Studio is my new technology
- Hosted internally, could be YouTube



# Hybrid Development

- This details my process for porting a course to hybrid
- Learning objectives, lectures, homework, and tests have been used by me in earlier quarters
- Focus on what is better in each environment

# Hybrid Development

- Re-organize the 2 weekly lectures
- Almost all content moves to online lecture for the week (PowerPoint)
- Shorter in class PowerPoint created to act as guide for in class activities

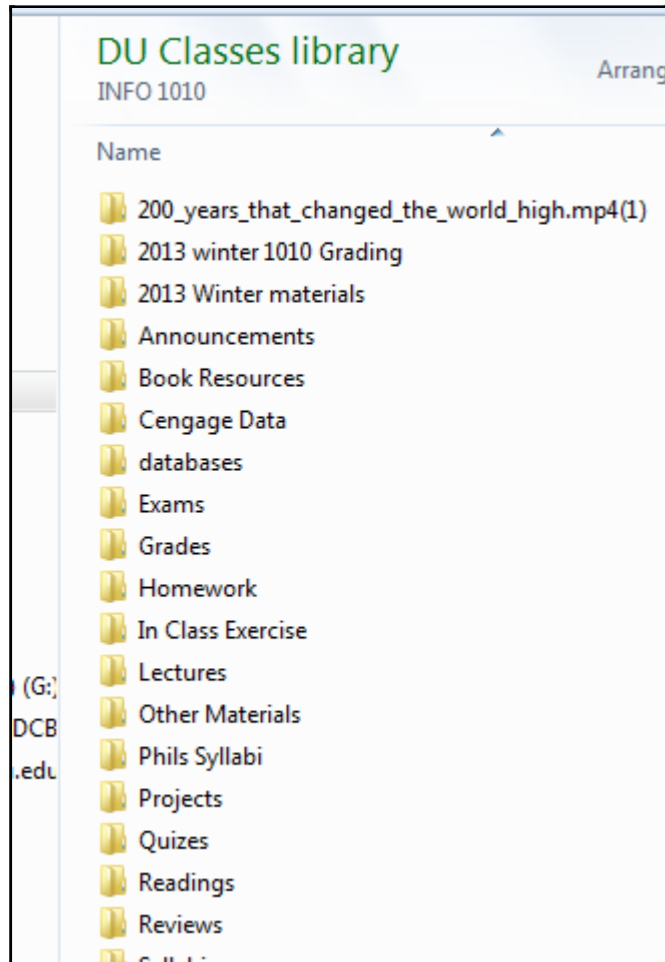
# Hybrid Development

- Think hard about what goes online and what to do in class
- Information Delivery goes online
- Skill practice goes online
- Easy examples go online
- Designed for students to work at own pace
- What traditionally happens at home?

# Hybrid Development

- Tougher exercises go in class
- Opportunities for group work go in class
- Provide challenges that lead to coaching
- Hope for chances for students to get stuck and receive immediate feedback
- Think teachable moment

# Hybrid Development



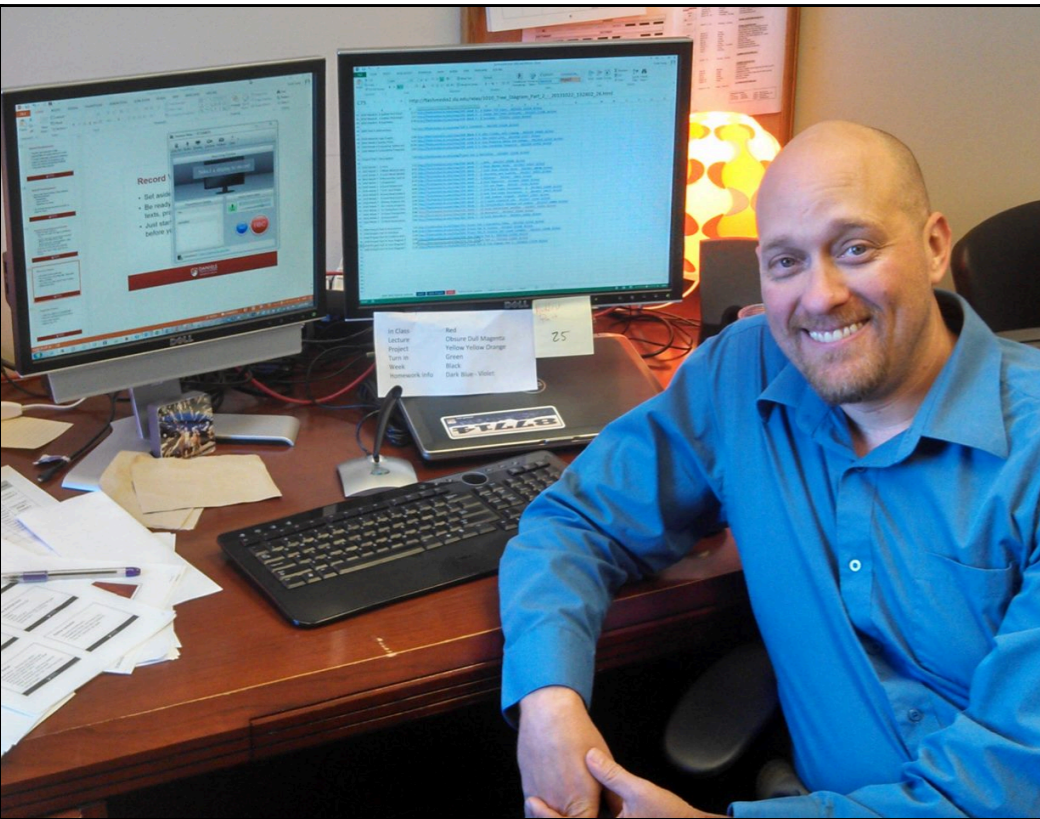
- Along with PowerPoints, other relevant files are prepared
  - Spreadsheets
  - Lists of web links
  - Assignment documents
- All of these things are done at home, to prep for class

# Hybrid Development Activity

- Work through handout
  - Envision one week of a class you are familiar with
  - Identify what parts can be moved online (think passive information delivery first)
  - Identify what parts can be expanded in class (think coaching opportunities)
- Work for 10 minutes with a partner
- Share with each other what can be moved

# Record Videos

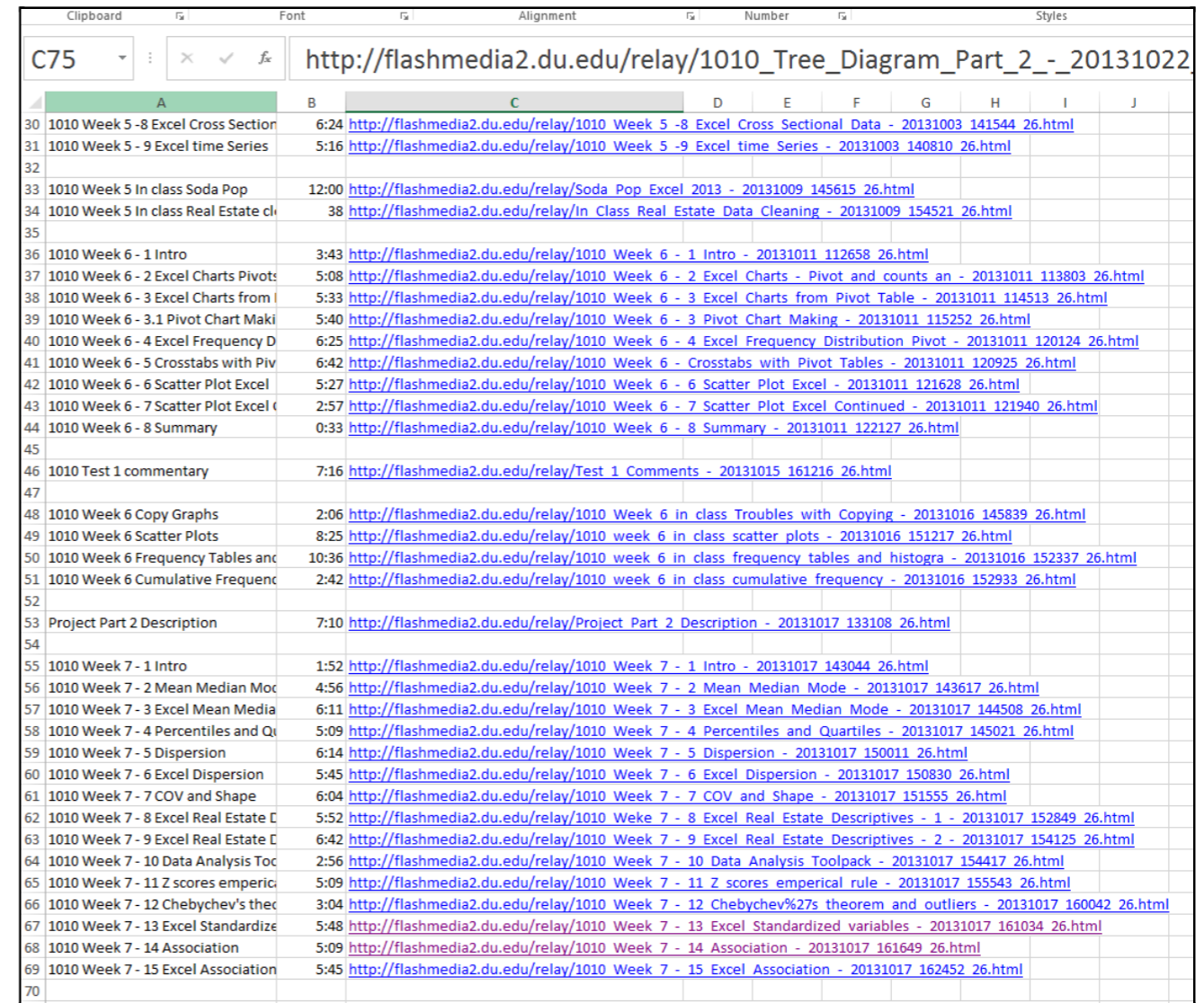
- Set aside some quite time
- Be ready with supporting files, examples, texts, prompts
- Just start (it is less painful than it seems before you start)





# Organize Videos

- I keep the videos in a spreadsheet
- Titles are numbered and informative
- I track video lengths
- Capture the URL



The screenshot shows an Excel spreadsheet with a table of video information. The columns are labeled A through J. The table contains the following data:

	A	B	C	D	E	F	G	H	I	J
30	1010 Week 5 - 8 Excel Cross Section	6:24	<a href="http://flashmedia2.du.edu/relay/1010_Week_5_-_8_Excel_Cross_Sectional_Data_-_20131003_141544_26.html">http://flashmedia2.du.edu/relay/1010_Week_5_-_8_Excel_Cross_Sectional_Data_-_20131003_141544_26.html</a>							
31	1010 Week 5 - 9 Excel time Series	5:16	<a href="http://flashmedia2.du.edu/relay/1010_Week_5_-_9_Excel_time_Series_-_20131003_140810_26.html">http://flashmedia2.du.edu/relay/1010_Week_5_-_9_Excel_time_Series_-_20131003_140810_26.html</a>							
32										
33	1010 Week 5 In class Soda Pop	12:00	<a href="http://flashmedia2.du.edu/relay/Soda_Pop_Excel_2013_-_20131009_145615_26.html">http://flashmedia2.du.edu/relay/Soda_Pop_Excel_2013_-_20131009_145615_26.html</a>							
34	1010 Week 5 In class Real Estate cl	38	<a href="http://flashmedia2.du.edu/relay/In_Class_Real_Estate_Data_Cleaning_-_20131009_154521_26.html">http://flashmedia2.du.edu/relay/In_Class_Real_Estate_Data_Cleaning_-_20131009_154521_26.html</a>							
35										
36	1010 Week 6 - 1 Intro	3:43	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_1_Intro_-_20131011_112658_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_1_Intro_-_20131011_112658_26.html</a>							
37	1010 Week 6 - 2 Excel Charts Pivots	5:08	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_2_Excel_Charts_-_Pivot_and_counts_an_-_20131011_113803_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_2_Excel_Charts_-_Pivot_and_counts_an_-_20131011_113803_26.html</a>							
38	1010 Week 6 - 3 Excel Charts from l	5:33	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_3_Excel_Charts_from_Pivot_Table_-_20131011_114513_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_3_Excel_Charts_from_Pivot_Table_-_20131011_114513_26.html</a>							
39	1010 Week 6 - 3.1 Pivot Chart Maki	5:40	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_3_Pivot_Chart_Making_-_20131011_115252_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_3_Pivot_Chart_Making_-_20131011_115252_26.html</a>							
40	1010 Week 6 - 4 Excel Frequency D	6:25	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_4_Excel_Frequency_Distribution_Pivot_-_20131011_120124_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_4_Excel_Frequency_Distribution_Pivot_-_20131011_120124_26.html</a>							
41	1010 Week 6 - 5 Crosstabs with Piv	6:42	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_Crosstabs_with_Pivot_Tables_-_20131011_120925_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_Crosstabs_with_Pivot_Tables_-_20131011_120925_26.html</a>							
42	1010 Week 6 - 6 Scatter Plot Excel	5:27	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_6_Scatter_Plot_Excel_-_20131011_121628_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_6_Scatter_Plot_Excel_-_20131011_121628_26.html</a>							
43	1010 Week 6 - 7 Scatter Plot Excel c	2:57	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_7_Scatter_Plot_Excel_Continued_-_20131011_121940_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_7_Scatter_Plot_Excel_Continued_-_20131011_121940_26.html</a>							
44	1010 Week 6 - 8 Summary	0:33	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_-_8_Summary_-_20131011_122127_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_-_8_Summary_-_20131011_122127_26.html</a>							
45										
46	1010 Test 1 commentary	7:16	<a href="http://flashmedia2.du.edu/relay/Test_1_Comments_-_20131015_161216_26.html">http://flashmedia2.du.edu/relay/Test_1_Comments_-_20131015_161216_26.html</a>							
47										
48	1010 Week 6 Copy Graphs	2:06	<a href="http://flashmedia2.du.edu/relay/1010_Week_6_in_class_Troubles_with_Copying_-_20131016_145839_26.html">http://flashmedia2.du.edu/relay/1010_Week_6_in_class_Troubles_with_Copying_-_20131016_145839_26.html</a>							
49	1010 Week 6 Scatter Plots	8:25	<a href="http://flashmedia2.du.edu/relay/1010_week_6_in_class_scatter_plots_-_20131016_151217_26.html">http://flashmedia2.du.edu/relay/1010_week_6_in_class_scatter_plots_-_20131016_151217_26.html</a>							
50	1010 Week 6 Frequency Tables and	10:36	<a href="http://flashmedia2.du.edu/relay/1010_week_6_in_class_frequency_tables_and_histogra_-_20131016_152337_26.html">http://flashmedia2.du.edu/relay/1010_week_6_in_class_frequency_tables_and_histogra_-_20131016_152337_26.html</a>							
51	1010 Week 6 Cumulative Frequenc	2:42	<a href="http://flashmedia2.du.edu/relay/1010_week_6_in_class_cumulative_frequency_-_20131016_152933_26.html">http://flashmedia2.du.edu/relay/1010_week_6_in_class_cumulative_frequency_-_20131016_152933_26.html</a>							
52										
53	Project Part 2 Description	7:10	<a href="http://flashmedia2.du.edu/relay/Project_Part_2_Description_-_20131017_133108_26.html">http://flashmedia2.du.edu/relay/Project_Part_2_Description_-_20131017_133108_26.html</a>							
54										
55	1010 Week 7 - 1 Intro	1:52	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_1_Intro_-_20131017_143044_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_1_Intro_-_20131017_143044_26.html</a>							
56	1010 Week 7 - 2 Mean Median Moc	4:56	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_2_Mean_Median_Mode_-_20131017_143617_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_2_Mean_Median_Mode_-_20131017_143617_26.html</a>							
57	1010 Week 7 - 3 Excel Mean Media	6:11	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_3_Excel_Mean_Median_Mode_-_20131017_144508_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_3_Excel_Mean_Median_Mode_-_20131017_144508_26.html</a>							
58	1010 Week 7 - 4 Percentiles and Qu	5:09	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_4_Percentiles_and_Quartiles_-_20131017_145021_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_4_Percentiles_and_Quartiles_-_20131017_145021_26.html</a>							
59	1010 Week 7 - 5 Dispersion	6:14	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_5_Dispersion_-_20131017_150011_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_5_Dispersion_-_20131017_150011_26.html</a>							
60	1010 Week 7 - 6 Excel Dispersion	5:45	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_6_Excel_Dispersion_-_20131017_150830_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_6_Excel_Dispersion_-_20131017_150830_26.html</a>							
61	1010 Week 7 - 7 COV and Shape	6:04	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_7_COV_and_Shape_-_20131017_151555_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_7_COV_and_Shape_-_20131017_151555_26.html</a>							
62	1010 Week 7 - 8 Excel Real Estate D	5:52	<a href="http://flashmedia2.du.edu/relay/1010_Weke_7_-_8_Excel_Real_Estate_Descriptives_-_1_-_20131017_152849_26.html">http://flashmedia2.du.edu/relay/1010_Weke_7_-_8_Excel_Real_Estate_Descriptives_-_1_-_20131017_152849_26.html</a>							
63	1010 Week 7 - 9 Excel Real Estate C	6:42	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_9_Excel_Real_Estate_Descriptives_-_2_-_20131017_154125_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_9_Excel_Real_Estate_Descriptives_-_2_-_20131017_154125_26.html</a>							
64	1010 Week 7 - 10 Data Analysis Toc	2:56	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_10_Data_Analysis_Toolpack_-_20131017_154417_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_10_Data_Analysis_Toolpack_-_20131017_154417_26.html</a>							
65	1010 Week 7 - 11 Z scores empiric	5:09	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_11_Z_scores_emperical_rule_-_20131017_155543_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_11_Z_scores_emperical_rule_-_20131017_155543_26.html</a>							
66	1010 Week 7 - 12 Chebychev's thec	3:04	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_12_Chebychev%27s_theorem_and_outliers_-_20131017_160042_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_12_Chebychev%27s_theorem_and_outliers_-_20131017_160042_26.html</a>							
67	1010 Week 7 - 13 Excel Standardize	5:48	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_13_Excel_Standardized_variables_-_20131017_161034_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_13_Excel_Standardized_variables_-_20131017_161034_26.html</a>							
68	1010 Week 7 - 14 Association	5:09	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_14_Association_-_20131017_161649_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_14_Association_-_20131017_161649_26.html</a>							
69	1010 Week 7 - 15 Excel Association	5:45	<a href="http://flashmedia2.du.edu/relay/1010_Week_7_-_15_Excel_Association_-_20131017_162452_26.html">http://flashmedia2.du.edu/relay/1010_Week_7_-_15_Excel_Association_-_20131017_162452_26.html</a>							
70										

# Post Online Content to LMS

- I attach the links behind the video titles
- They open in a browser
- Students can watch them all at once or a few at a time
- Resources are posted near videos  
(confusion leads to more work for you!)

# Creating Week Page/Item

uncements  
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Class Work  
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scape  
ile 2 Business Data  
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\* Indicates a required field.

## 1. Content Information

\* Name

Color of Name

Text

**T** **T** **T** Arial 3 (12pt) **T** **:** **≡** **≡** **REC** **↻** **↻**

[1010 Week 7 - 5 Dispersion](#)

1010 Week 7 - 6 Excel Dispersion

1010 Week 7 - 7 COV and Shape

1010 Week 7 - 8 Excel Real Estate Descriptives - 1

1010 Week 7 - 9 Excel Real Estate Descriptives - 2

1010 Week 7 - 10 Data Analysis Toolpack

Path: table » tbody » tr » td » a

## 2. Attachments

*If you select a file you do not want, click **Do Not Attach** to remove the attachment from the content item. The file itself is*

Attach File

# Week Layout at Home

The screenshot shows a Blackboard course page for 'Week 7 Descriptive Statistics'. The page is titled 'Week 7 Descriptive Statistics' and includes a navigation menu on the left with options like 'Announcements', 'Syllabus', 'Faculty Information', 'Content', 'Tools', 'Pre Class Work', 'Module 1 Business Data Landscape', 'Module 2 Business Data Analysis', 'Project', 'Web Sites', 'Discussions', and 'Email'. The main content area is divided into three sections: 'Week 7 Lecture - Descriptive Statistics', 'Week 7 Quiz Data', and 'Week 7 Quiz'. The lecture section includes a list of 15 links for various topics, and the quiz section includes a link to a spreadsheet and a description of the quiz content.

**Week 7 Descriptive Statistics**

Build Content ▾ Assessments ▾ Tools ▾ Publisher Content ▾

**Week 7 Lecture - Descriptive Statistics**

Enabled: Statistics Tracking

Attached Files: [2013 Fall On Line week 7 Lecture 1010.pptx](#) (1.803 MB)  
[INFO 1010 Real Estate Data Fall 2013 week 7 Start.xlsx](#) (1.103 MB)  
[INFO 1010 Real Estate Data Fall 2013 week 7 End.xlsx](#) (1.413 MB)

Here is your week 7 lecture. This is a long one. It covers basic descriptive statistics.

There is a lot of Excel work this week. Don't forget project part 2 and your quiz are due next week.

Good luck.

[1010 Week 7 - 1 Intro](#)

[1010 Week 7 - 2 Mean Median Mode](#)

[1010 Week 7 - 3 Excel Mean Median Mode](#)

[1010 Week 7 - 4 Percentiles and Quartiles](#)

[1010 Week 7 - 5 Dispersion](#)

[1010 Week 7 - 6 Excel Dispersion](#)

[1010 Week 7 - 7 COV and Shape](#)

[1010 Week 7 - 8 Excel Real Estate Descriptives - 1](#)

[1010 Week 7 - 9 Excel Real Estate Descriptives - 2](#)

[1010 Week 7 - 10 Data Analysis Toolpack](#)

[1010 Week 7 - 11 Z scores emperical rule](#)

[1010 Week 7 - 12 Chebychev's theorem and outliers](#)

[1010 Week 7 - 13 Excel Standardized variables](#)

[1010 Week 7 - 14 Association](#)

[1010 Week 7 - 15 Excel Association](#)

**Week 7 Quiz Data**

Attached Files: [Chapter 3 Quiz \(week 7\).xlsx](#) (994.33 KB)

This is the data for the week 7 Quiz.

**Week 7 Quiz**

This quiz relies on knowledge from Chapter 3 and data from the provided spreadsheet (Chapter 3 quiz (Week 7)).

# At Home Weekly Quiz

## Preview Test: Week 7 Quiz

Description This quiz relies on knowledge from Chapter 3 and data from the provided spreadsheet (Chapter 3 quiz (Week 7)).

Instructions This quiz relies on knowledge from Chapter 3 and data from the provided spreadsheet (Chapter 3 quiz (Week 7)).

Multiple Attempts This Test allows multiple attempts.

Force Completion This Test can be saved and resumed later.

⌵ Question Completion Status:

Save All Answers Save and Submit

### Question 1

2 points Save Answer

1. What is the maximum z score (standardized score) for the `s_sale_price` variable? (pick closest value)

- 1.55
- 6.05
- 10.8
- 3.01

### Question 2

2 points Save Answer

Which best describes the skewness of the `land_square_feet` variable?

- Skewed Left
- Symetric
- Skewed Right
- None of these




# Post In Class Elements to LMS

- Before class, the in class work needs to be posted
- All PowerPoints and docs, spreadsheets, links, and what not that are needed
- Students are expected to have access to the web and LMS during class (at least by me)



## Week 7 In Class Work

Enabled: Statistics Tracking

Attached Files:  2013 Fall Lecture In Class 7 1010.pptx (603 KB)  
 INFO1010 Week 7 In Class.xlsx (972.147 KB)  
 Week 7 In class.docx (18.151 KB)

This week we are working on some new data. The spreadsheets and instructions are attached to this item.

# Recording Tips

- Don't be perfect
- Get a good microphone
- Budget your time
- Seek feedback
- Convey Excitement (consider standing while recording)



# Next Time Through

- Reuse and Revise
- First and last segment can have timely information
- Other segments should be “Time Free”
- Write notes to your future self



# Drawbacks

- Time consuming at first
- Less time in class feels “strange”

# Best Plusses

- In class feedback to students
- Re-usable modules
- Custom learning pace
- Can find other sources for videos
- Students Express Appreciation!

# Questions?

Contact information:

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