Intro to Spreadsheets

NASHVILLE SOFTWARE SCHOOL

Objective: To be able to describe the layout of a spreadsheet and implement basic interactions as needed

Spreadsheet Layout

- Organization of a Spreadsheet
- Individual Cells

Basic Spreadsheet Interactions

- Adding Formulas to a Cell
- Mathematical Symbols
- Comparison Symbols
- Types of Cell References (Relative/Absolute)
- Copying Cell Values

What is a spreadsheet?

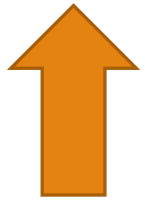
A spreadsheet is a way to represent raw data (the actual numbers that are part of a given observation) and/or calculations based on raw data. These data are organized into rows and columns. An individual block is called a cell:

	A	**B**	**C**	**D**
1				
2				
3				

What is a Spreadsheet?

Each row has a unique identifier, as well as each column. The combination of each row and column identifier gives each cell an address, similar to coordinates:

	A	B	C	D
1				
2				
3		B3		



B3 = Column B + Row 3

What is a Spreadsheet?

Rows typically have values belonging to an observation and columns have values belonging to a variable:

	A	B	C	D	E
1	Title	Budget ($M)	Gross ($M)	Release Date	Profit ($M)
2	The Ring	48	129	10/18/2002	81
3	Django Unchained	100	162	12/25/2015	62
4	Scream	14	103	12/20/1996	89

Using a Formula

You can add a formula to a cell. This will perform whatever calculations are specified and display the result in the cell:

	A	B	C	D	E
1	Title	Budget($M)	Gross($M)	Release Date	Profit($M)
2	The Ring	48	129	10/18/2002	= 129 – 48
3	Django Unchained	100	162	12/25/2015	
4	Scream	14	103	12/20/1996	

Using a Formula

You can add a formula to a cell. This will perform whatever calculations are specified and display the result in the cell , you can also reference individual cells in a formula :

	A	B	C	D	E
1	Title	Budget ($M)	Gross ($M)	Release Date	Profit ($M)
2	The Ring	48	129	10/18/2002	= C2 – B2
3	Django Unchained	100	162	12/25/2015	
4	Scream	14	103	12/20/1996	

Mathematical Symbols

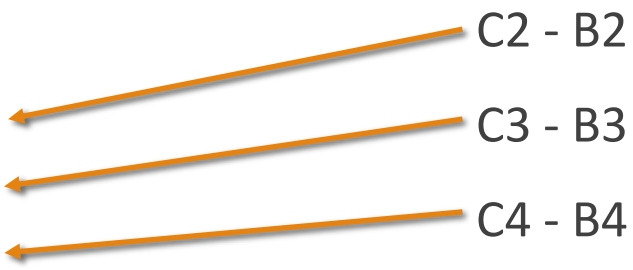
Symbol	Operation
+	Addition
-	Subtraction
*	Multiplication
/	Division
^	Exponent
( )	Parentheses

Relative Referencing

Relative referencing maintains relationship with reference point

	A	B	C	D	E
1	Title	Budget	Gross	Release Date	Profit
2	The Ring	$48	$129	10/18/2002	= C2 – B2
3	Django Unchained	$100	$162	12/25/2015	
4	Scream	$14	$103	12/20/1996	

Profit Column Example:



Click and drag to copy formulas!

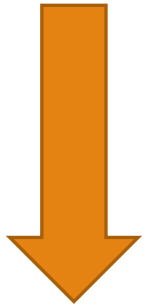
	A	B	C	D	E
1	Title	Budget	Gross	Release Date	Profit
2	The Ring	$48	$129	10/18/2002	= C2 – B2
3	Django Unchained	$100	$162	12/25/2015	
4	Scream	$14	$103	12/20/1996	

Highlight the cell, then click the corner and drag

Click and drag to copy formulas!

	A	B	C	D	E
1	Title	Budget	Gross	Release Date	Profit
2	The Ring	$48	$129	10/18/2002	= C2 – B2
3	Django Unchained	$100	$162	12/25/2015	= C3 – B3
4	Scream	$14	$103	12/20/1996	= C4 – B4

Drag down to autofill each cell in the column

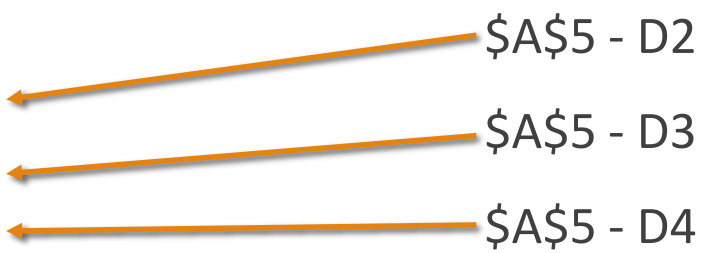


Absolute Referencing

Absolute referencing always references a given row, column, or cell regardless of location

	A	B	C	D	E
1	Title	Budget	Gross	Release Date	Time Since Release
2	The Ring	$48	$129	10/18/2002	=$A$5 – D2
3	Django Unchained	$100	$162	12/25/2015	=$A$5 – D3
4	Scream	$14	$103	12/20/1996	=$A$5 – D4
5	= TODAY()				

Time Since Release Column Example:



Blending Relative and Absolute Refencing

Formula	Reference Type
= A1	Relative Column / Relative Row
= $A1	Absolute Column / Relative Row
= A$1	Relative Column / Absolute Row
= $A$1	Absolute Column / Absolute Row

Example of Final Table:

Profit = Gross – Budget – Taxes
Profit = Gross – Budget – (Gross * Tax Rate)
E2 = C2 – B2 – (C2 * $B$6)

	A	B	C	D	E
1	Title	Budget (Millions)	Gross(Millions)	Taxes(Millions)	Profit
2	The Ring	$48	$129	$12.9	$68.1
3	Django Unchained	$100	$162	$16.2	$45.8
4	Scream	$14	$103	$10.3	$78.7
5					
6	Tax Rate:	10%			

Practice Exercises:

Use the Starwars data for the following:

1. What cell is Biggs Darklighter's age stored?

2. Insert a new column next to the height column. Title it height(m).

3. The height column has the height in cm. Write a formula in height(m) to calculate the height in meters for Luke Skywalker by referencing the value in the height column and dividing by 100.

4. The formula for Body Mass Index (BMI) is kg/m2. Add a new column BMI and write a formula to calculate the BMI for Luke Skywalker (the weight column is in kg).

5. Copy the formulas for height(m) and BMI for the rest of the characters in the spreadsheet.

6. Add a new column called compare_BMI_DV, then write a formula to see if a character's BMI is greater than Darth Vader's BMI. Copy the formula for the whole column.