Data Analytics with Excel
Week 1: Formulas + Formatting

USC Annenberg Digital Lounge

Grab the guide at: digital-lounge-excel.carrd.co

Nice to meet you!

Why am I teaching Excel?

- 10 years of experience in a variety of data roles and industries
  - o Public Sector / Government
  - o Nonprofit
  - o Consulting
  - o Higher Ed
  - o Startup
- BA in Public Policy
- MS in Computer Science

How much have you used Excel before?

1 = not much   5 = I'm an expert

What have you used spreadsheets for?

After today's session

- Organize data using formatting and conditional formatting
- Explain how to set up a formula
- Categorize data using drop-down menus

Today's topics

- Conditional formatting
- Data validation
- Cell and table formatting
- Basic formulas for numbers, text, dates
- Logic formulas using if and case

Excel vs. Google Sheets

- Most commonly-used features in Excel also exist in Google Sheets
  - o The names may be slightly different

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- Same is true for Mac vs. PC
  - o There are slight variations in menus and keyboard shortcuts

Cell Formatting

- Often, will automatically be correct

- Sometimes, will not make sense

- Use the Number Format dropdown in the Home Ribbon

- Advanced options under More for specific dates, negatives

Enter 75 into any cell. Use the Number Formats menu to change it to:

- **Short Date**
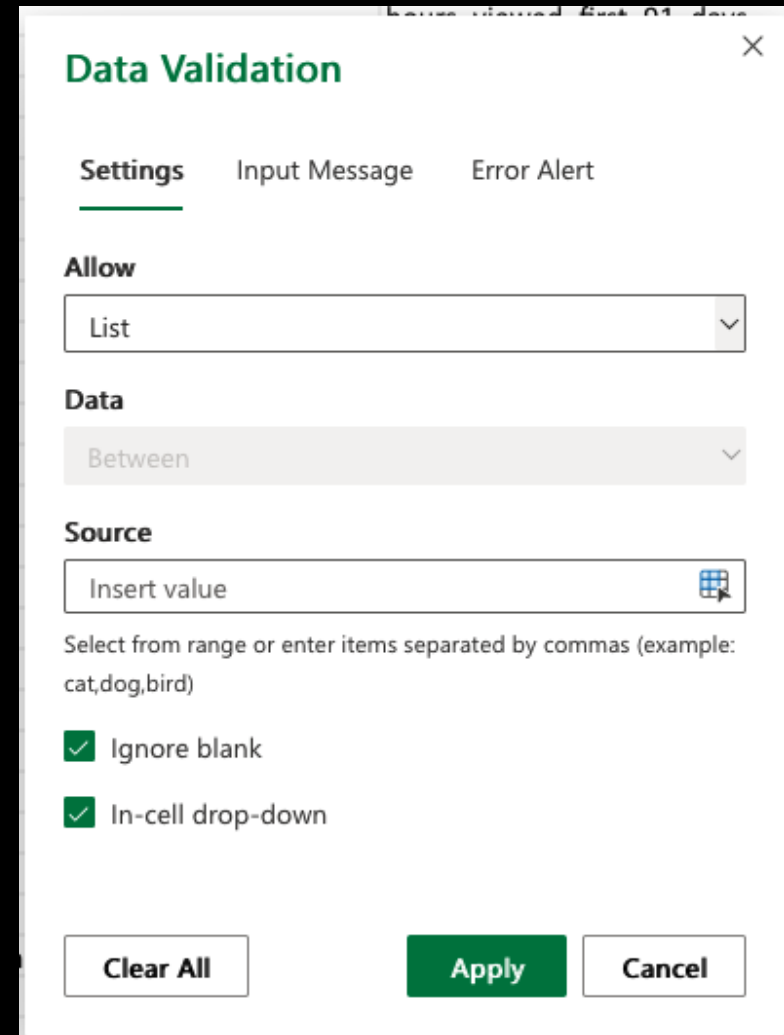
- **Text**

- **Number**

Data Validation

- Asking others to input information
- Coding or categorizing rows manually

Data ribbon → Data Validation
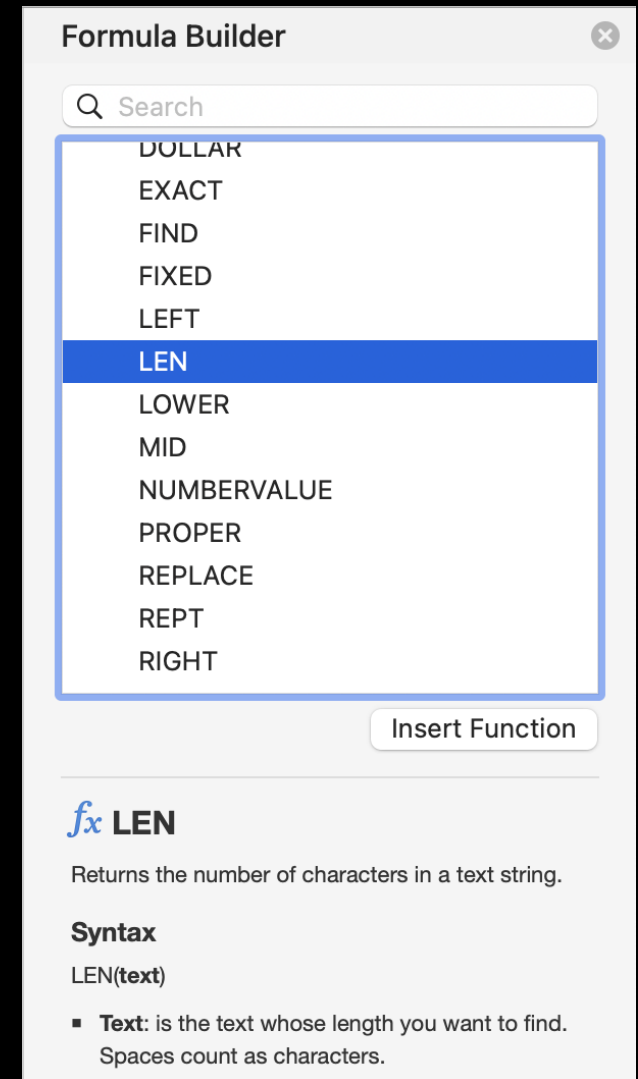
Allow: List

Type *Option1,Option2* into the source values

Apply

Activity Part 1: Data Validation

- Follow the **Data for Week 1** link in the guide, goes to netflix.com/tudum/top10/

- Download the "Most Popular" List in Excel format

- Create new another column:
  1. A column that called "Seen" with a dropdown menu for "No", "No but on my list", "Yes and loved it", "Yes and didn't love it"
  2. Add an error message to the validation
  3. Fill out the field on a few rows to make sure it works!

Writing Formulas

- To see the list of options
  - 365: Formulas > Insert Function
  - Mac: Insert > Function
- Syntax:
  - How many arguments
  - Meaning of each argument
- Insert Function button
  - Or type **=function(argument)** in formula bar

=LEN("your full name")

Math Formulas

- Row-based formulas ("about the row, in the row")
  - +, -, *, /, ^
- Column-based formulas (summarize)
  - Count, sum
  - Average
  - Minimum
  - Maximum
  - Percentiles

Date Formulas

- TODAY()
- Number of days
- Extract parts of dates
- Formatting dates

=TODAY()

=TODAY()-"2024-01-01"

Find the number of days until your birthday

Text Formulas

- Concatenate

- Left

- Right

- Substitute

- Proper, upper, lower

=CONCATENATE("Cardi", " ", "B")

=PROPER(A2)

Logic Formulas

- Row-based logic
- If the student attended at least one class, in week one or week two, count them as total students

=OR(A2,B2)

=IF(A2>B2,"Eligible", "Not Eligible")

Logical
AND
FALSE
IF
IFERROR
IFNA
NOT
OR
TRUE
XOR

Activity Part 2: Formulas

- netflix.com/tudum/top10/ - Download the "Most Popular" List in Excel format
- Create new columns (hint: lean on the formula builder!):
  1. Use **SUBSTITUTE()** to create a category column that substitutes the word "Films" with "Movies"
  2. Use **LEFT()** to add column with the first 3 letters of each piece of content
  3. For the TV shows, use **CONCATENATE()** to create a new column with the show title followed by a "-" followed by the season title
  4. Use math (hint: /91) to add a column for views per day for first 91 days for each show
  5. Use **IF()** to add a column that is True if Hours Viewed is over 200,000,000, and false otherwise

Summary Formulas

- Column-based (summarize)
  - CountIf
  - SumIf
  - CountBlank

=COUNTIF(F2:F15,">2")

=SUMIF(F2:F15,">2",G2:G15)

Activity Part 3: Summary Formulas

- Same data source: netflix.com/tudum/top10
- Find:
    1. Sum of hours viewed
    2. Average runtime, converted to minutes
    3. For each of the 4 categories, the **AVERAGE()** runtime in hours
    4. Use **SUMIF()** to find the total views for content ranked 1-5
- Then Format As Table (from the Home ribbon, pick your favorite)

Combining formulas

- Best way to figure things out is to write each formula in its own column at first
- Once you've checked that each column (intermediate step) looks right, you can combine

=SUBSTITUTE("my full name", " ", "")
=LEN("myfullname")

=LEN(SUBSTITUTE("my full name", " ", ""))

Activity Part 4: Combining Formulas

- Find the percentage of content with runtime greater than 2 hours
  - COUNTIF and COUNT
- Create a URL for each show, using formulas, written all in a single column, formatted as
  - www.netflix.com
  - Slash, the name of the show in all lower case, with no spaces
  - LOWER, SUBSTITUTE, CONCATENATE

  Example: www.netflix.com/loveisblind

  Hint: start with each part in a separate column first!

Upcoming sessions

- Advanced Formulas
- Charts and Tables
- Dashboards

Good Excel learning tools
- Miss Excel (IG/TikTok)
- PolicyViz (email/website)
- Exceljet (reference site)

Keep in touch
- Follow on LinkedIn: linkedin.com/in/rachelrwhaley

Please share your feedback!

- Digital Lounge feedback:
  bit.ly/s25feedback

- Email me: whaleyr@usc.edu