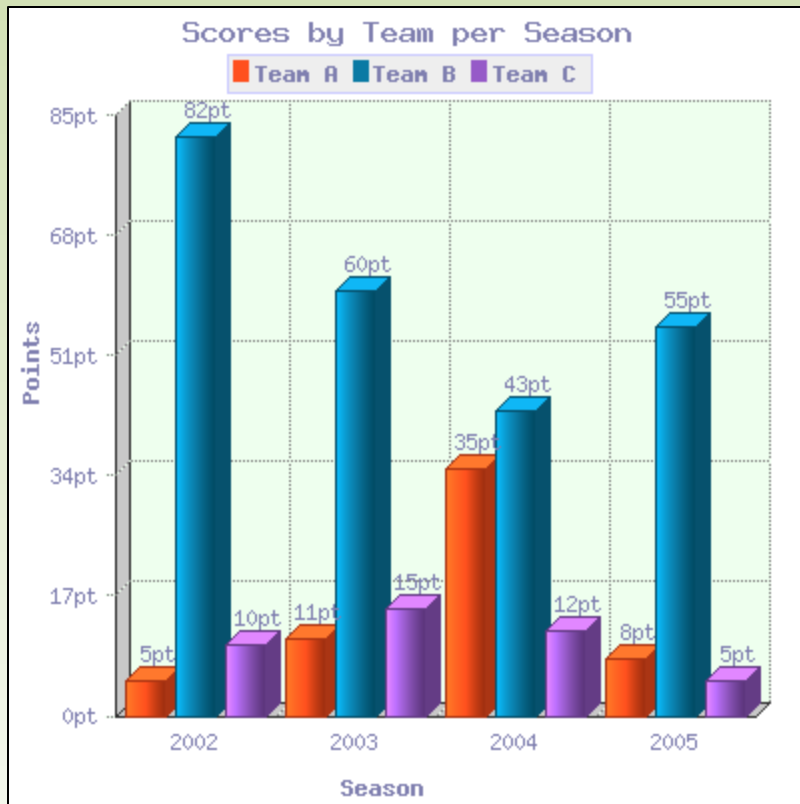# What is Excel??

- An electronic spreadsheet program
- What does that mean?
  - Stores and manipulates numbers
  - Makes tables with text or numbers
  - Creates graphs and charts

# Why are we learning it??



Scores by Team per Season

- Calculations (save time on homework)
- Charts and tables
- ***Almost every*** *business and organization* uses it to represent data

# Preparing for the Journey

Before we start, please pull up Excel and create this table:

|    | A | B | C | D | E | F | G |
|----|---|---|---|---|---|---|---|
| 1  |   |   |   |   |   |   |   |
| 2  |   |   |   |   |   |   |   |
| 3  |   |   | **Item** | **Price** | **Quantity** | **Price for all** |   |
| 4  |   |   | Sunglasse | $14.99 | 1 |   |   |
| 5  |   |   | Latte | $2.50 | 2 |   |   |
| 6  |   |   | Speakers | $99.99 | 3 |   |   |
| 7  |   |   | T shirt | $19.99 | 4 |   |   |
| 8  |   |   |   | **TOTAL** |   |   |   |
| 9  |   |   |   |   |   |   |   |
| 10 | CAN I BUY IT? |   |   |   |   |   |   |
| 11 |   |   |   |   |   |   |   |
| 12 |   |   |   |   |   |   |   |

# How does it work?



**COLUMNS**
(letters)

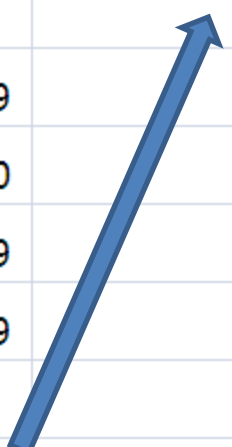| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Price | | | |
| 4 | | | Sunglasses | $14.99 | | | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |

**Cell D7**

**ROWS**
(numbers)

**Each cell stores a piece of information (numbers, text, function) and cells are grouped by columns and rows.**

# So how do we store this information??

|  | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 |  |  | Item | Price |  |  |  |
| 4 |  |  | Sunglasses | $14.99 |  |  |  |
| 5 |  |  | Latte | $2.50 |  |  |  |
| 6 |  |  | Speakers | $99.99 |  |  |  |
| 7 |  |  | T shirt | $19.99 |  |  |  |
| 8 |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |

**double click on the cell you want to use.**

# *So how do we store this information??*

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | **Item** | **Price** | | 42 | |
| 4 | | | Sunglasses | $14.99 | | | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**cell F3 has stored the number 42.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Price | | 42 | |
| 4 | | | Sunglasses | $14.99 | | =F3 | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**Type "=" in the new cell, and click on the cell that you want it to depend on.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | **Item** | **Price** | | 42 | |
| 4 | | | Sunglasses | $14.99 | | =F3+1 | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**Press ENTER, and now the cell F4 will always be equal to the value in F3 plus 1.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | **Item** | **Price** | | 42 | |
| 4 | | | Sunglasses | $14.99 | | 43 | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | **Item** | **Price** | | 12 | |
| 4 | | | Sunglasses | $14.99 | | 13 | |
| 5 | | | Latte | $2.50 | | | |
| 6 | | | Speakers | $99.99 | | | |
| 7 | | | T shirt | $19.99 | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**Alter F3, F4 will update.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | =D4*E4 | |
| 5 | | | Latte | $2.50 | 2 | | |
| 6 | | | Speakers | $99.99 | 3 | | |
| 7 | | | T shirt | $19.99 | 4 | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**A cell can depend on several cells**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 2 | | |
| 6 | | | Speakers | $99.99 | 3 | | |
| 7 | | | T shirt | $19.99 | 4 | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**We want excel to do the same for the other items**

# How can we make cells use the information in other cells?

|   | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 |   |   |   |   |   |   |   |
| 2 |   |   |   |   |   |   |   |
| 3 |   |   | Item | Unit Price | Quantity | Price for all |   |
| 4 |   |   | Sunglasses | $14.99 | 1 | $14.99 |   |
| 5 |   |   | Latte | $2.50 | 2 |   |   |
| 6 |   |   | Speakers | $99.99 | 3 |   |   |
| 7 |   |   | T shirt | $19.99 | 4 |   |   |
| 8 |   |   |   |   |   |   |   |
| 9 |   |   |   |   |   |   |   |
| 10 |   |   |   |   |   |   |   |
| 11 |   |   |   |   |   |   |   |
| 12 |   |   |   |   |   |   |   |
| 13 |   |   |   |   |   |   |   |

**Move the cursor to the bottom right corner of the box around the cell.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 2 | | |
| 6 | | | Speakers | $99.99 | 3 | | |
| 7 | | | T shirt | $19.99 | 4 | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**Drag the cursor down to the last cell that you want to use.**

# How can we make cells use the information in other cells?

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | **Item** | **Unit Price** | **Quantity** | **Price for all** | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 2 | $5.00 | |
| 6 | | | Speakers | $99.99 | 3 | $299.97 | |
| 7 | | | T shirt | $19.99 | 4 | $79.96 | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**Now the rest of the multiplications for each row have been calculated for us!**

# *Functions in Excel*
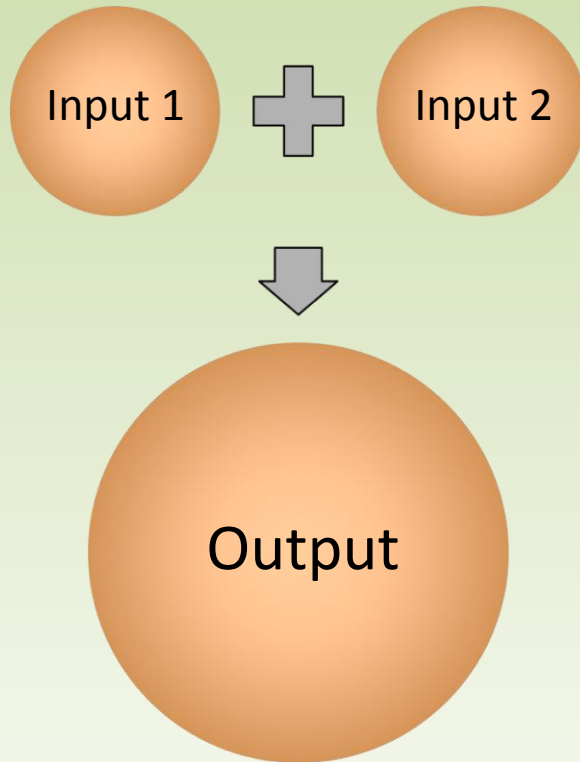


- Formulas to perform general operations
- Depend on other cells
- Automatically update
- Today, we will use **SUM()** and **IF()**
  - SUM() adds the values in user-selected cells
  - IF() displays a value that depends on whether or not a condition is true

# *SUM()*

- SUM() has the form    **=SUM(Cell names)**
- Add adjacent cells using a <u>colon</u>
  - Typing  **=SUM(A1:A3)** adds cells A1, A2, <u>and</u> A3.
  - And typing  **=SUM(A1:B2)** adds A1, A2, B1, and B2.
- Separate nonadjacent cells with <u>commas</u> to add them:

  =SUM(A1,B4,G17)

# *SUM()*

|   | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 |   |   |   |   |   |   |   |
| 2 |   |   |   |   |   |   |   |
| 3 |   |   | **Item** | **Unit Price** | **Quantity** | **Price for all** |   |
| 4 |   |   | Sunglasses | $14.99 | 1 | $14.99 |   |
| 5 |   |   | Latte | $2.50 | 2 | $5.00 |   |
| 6 |   |   | Speakers | $99.99 | 3 | $299.97 |   |
| 7 |   |   | T shirt | $19.99 | 4 | $79.96 |   |
| 8 |   |   |   |   | **TOTAL** | =SUM(F4:F7) |   |
| 9 |   |   |   |   |   |   |   |
| 10 |   |   |   |   |   |   |   |
| 11 |   |   |   |   |   |   |   |
| 12 |   |   |   |   |   |   |   |
| 13 |   |   |   |   |   |   |   |

# *SUM()*

|   | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 |   |   |   |   |   |   |   |
| 2 |   |   |   |   |   |   |   |
| 3 |   |   | Item | Unit Price | Quantity | Price for all |   |
| 4 |   |   | Sunglasses | $14.99 | 1 | $14.99 |   |
| 5 |   |   | Latte | $2.50 | 2 | $5.00 |   |
| 6 |   |   | Speakers | $99.99 | 3 | $299.97 |   |
| 7 |   |   | T shirt | $19.99 | 4 | $79.96 |   |
| 8 |   |   |   |   | TOTAL | $399.92 |   |
| 9 |   |   |   |   |   |   |   |
| 10 |   |   |   |   |   |   |   |
| 11 |   |   |   |   |   |   |   |
| 12 |   |   |   |   |   |   |   |
| 13 |   |   |   |   |   |   |   |

**Hooray!**

# *IF()*

- IF() has the form
  **=IF(Statement, Output if True, Output if False)**

- *Example 1*:    **=IF(A1>=6, 1, 5)**
  - If A1 is <u>greater than or equal</u> to 6, then the cell will display 1.
  - If it is <u>less than</u> 6, the cell will display 5.

- *Example 2*:    **=IF(A1=B18, "Same", "Different")**
  - What will the cell display if A1 is 100 and B18 is 99.9?

# *IF()*

|   | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 2 | $5.00 | |
| 6 | | | Speakers | $99.99 | 3 | $299.97 | |
| 7 | | | T shirt | $19.99 | 4 | $79.96 | |
| 8 | | | | | TOTAL | $399.92 | ← F8 |
| 9 | | | | | | | |
| 10 | | CAN I BUY IT? | =IF(F8<400, "You can buy it!", "You can't buy it.") | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

# *IF()*

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 2 | $5.00 | |
| 6 | | | Speakers | $99.99 | 3 | $299.97 | |
| 7 | | | T shirt | $19.99 | 4 | $79.96 | |
| 8 | | | | | TOTAL | $399.92 | |
| 9 | | | | | | | |
| 10 | | CAN I BUY IT? | You can buy it! | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**The condition F8 < 400 is satisfied.**

# *IF()*

|   | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | Item | Unit Price | Quantity | Price for all | |
| 4 | | | Sunglasses | $14.99 | 1 | $14.99 | |
| 5 | | | Latte | $2.50 | 5 | $12.50 | |
| 6 | | | Speakers | $99.99 | 3 | $299.97 | |
| 7 | | | T shirt | $19.99 | 4 | $79.96 | |
| 8 | | | | | TOTAL | $407.42 | |
| 9 | | | | | | | |
| 10 | | CAN I BUY IT? | You can't buy it. | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |

**The condition F8 < 400 isn't satisfied anymore.**

# Graphs

| | A | B |
|---|---|---|
| 1 | chocolate | 5 |
| 2 | vanilla | 4 |
| 3 | strawberr | 1 |
| 4 | | |

| | A | B |
|---|---|---|
| 1 | chocolate | 5 |
| 2 | vanilla | 4 |
| 3 | strawberr | 1 |
| 4 | | |

1. Create a table.
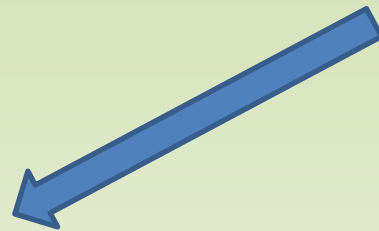
2. Highlight your table

3. Go to insert → Charts

4. Choose one of the 3-D pies.

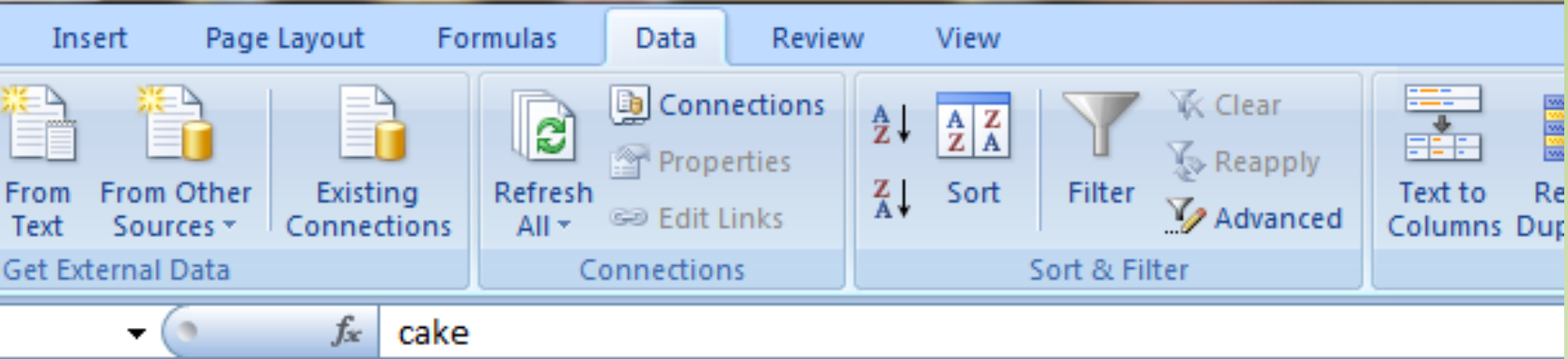5. Repeat 2 & 3 but choose Columns this time. Choose any kind you like.
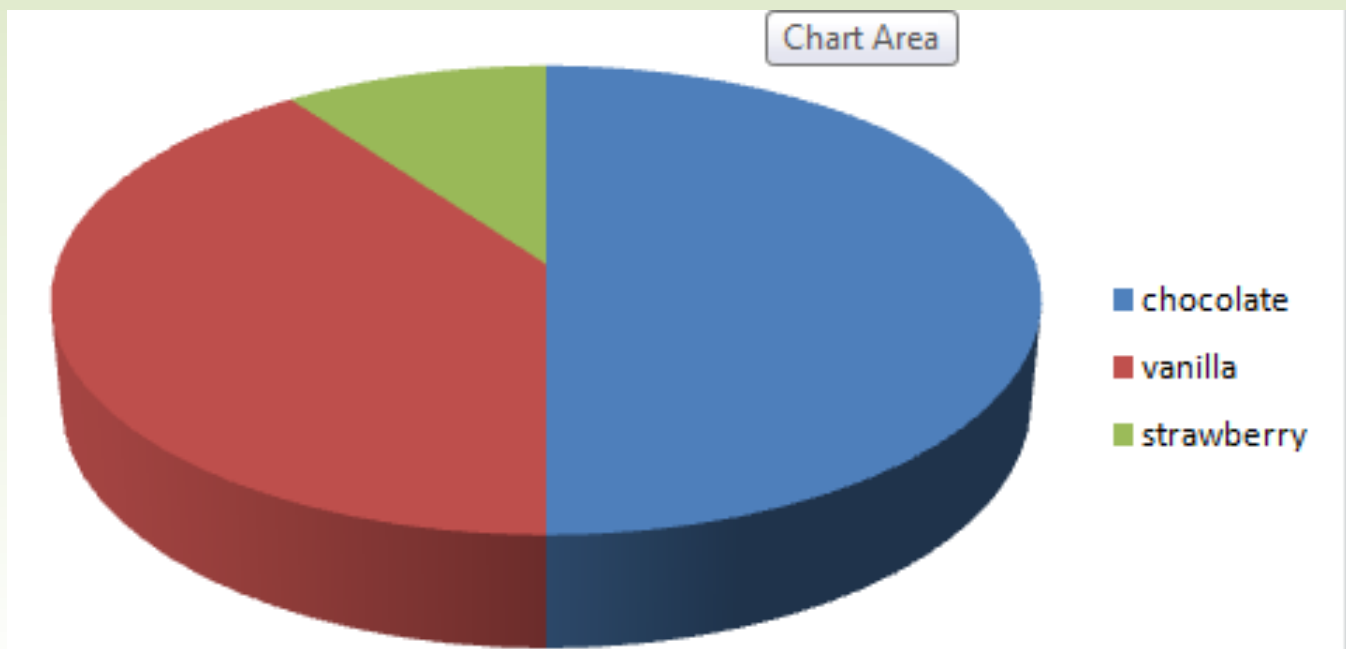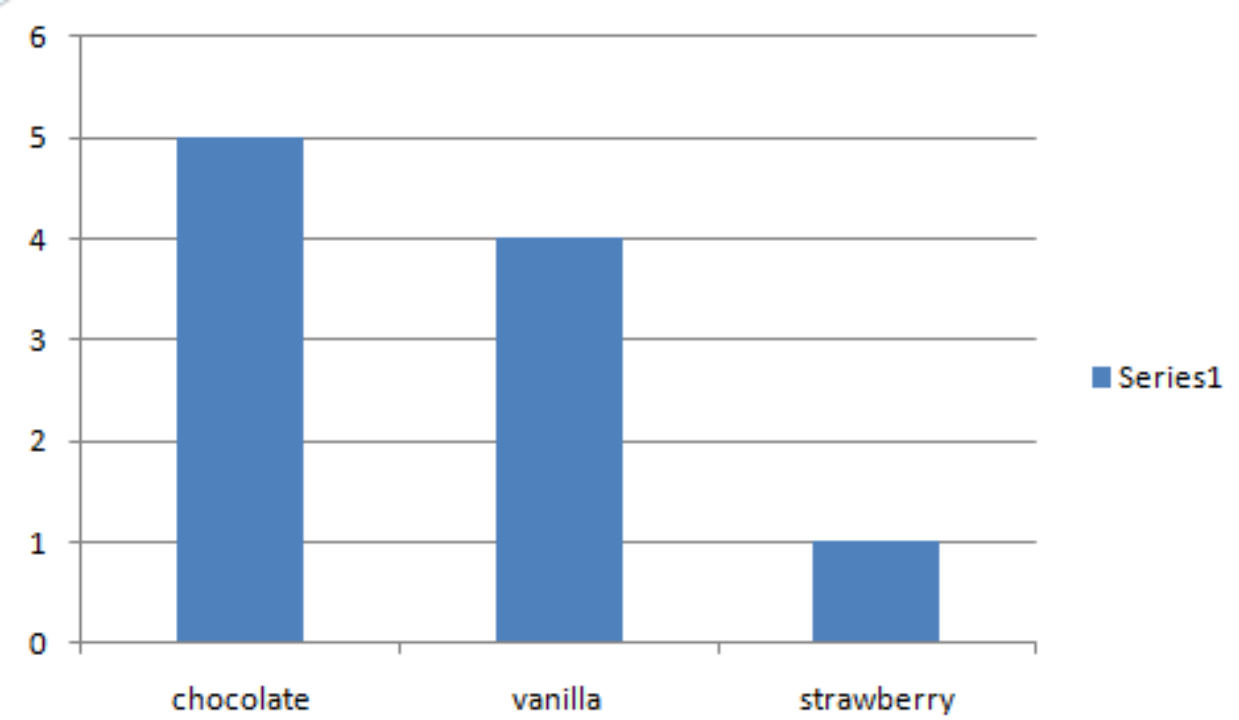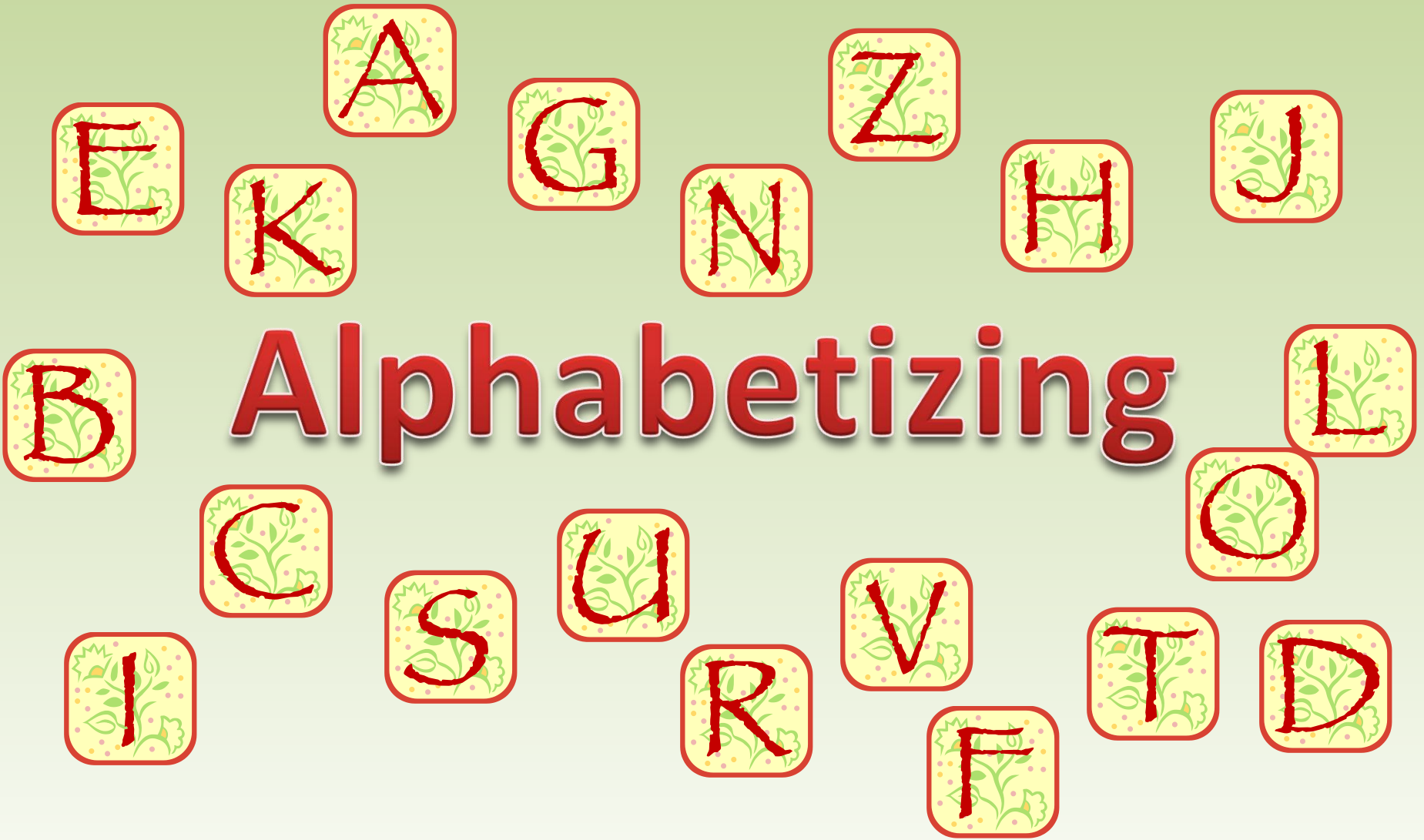
Alphabetizing

# Alphabetizing

|   | A | B |
|---|---|---|
| 1 | cake | Katherine |
| 2 | pop corn | Ita |
| 3 | raw tunips | Sarah |
| 4 | ice cream | Kim |
| 5 | apple | Durrah |
| 6 |   |   |

1. Highlight all the information you want to alphabetize. (otherwise you will highlight one column)
2. Go to Data → Sort

In "Sort by" choose Column A.
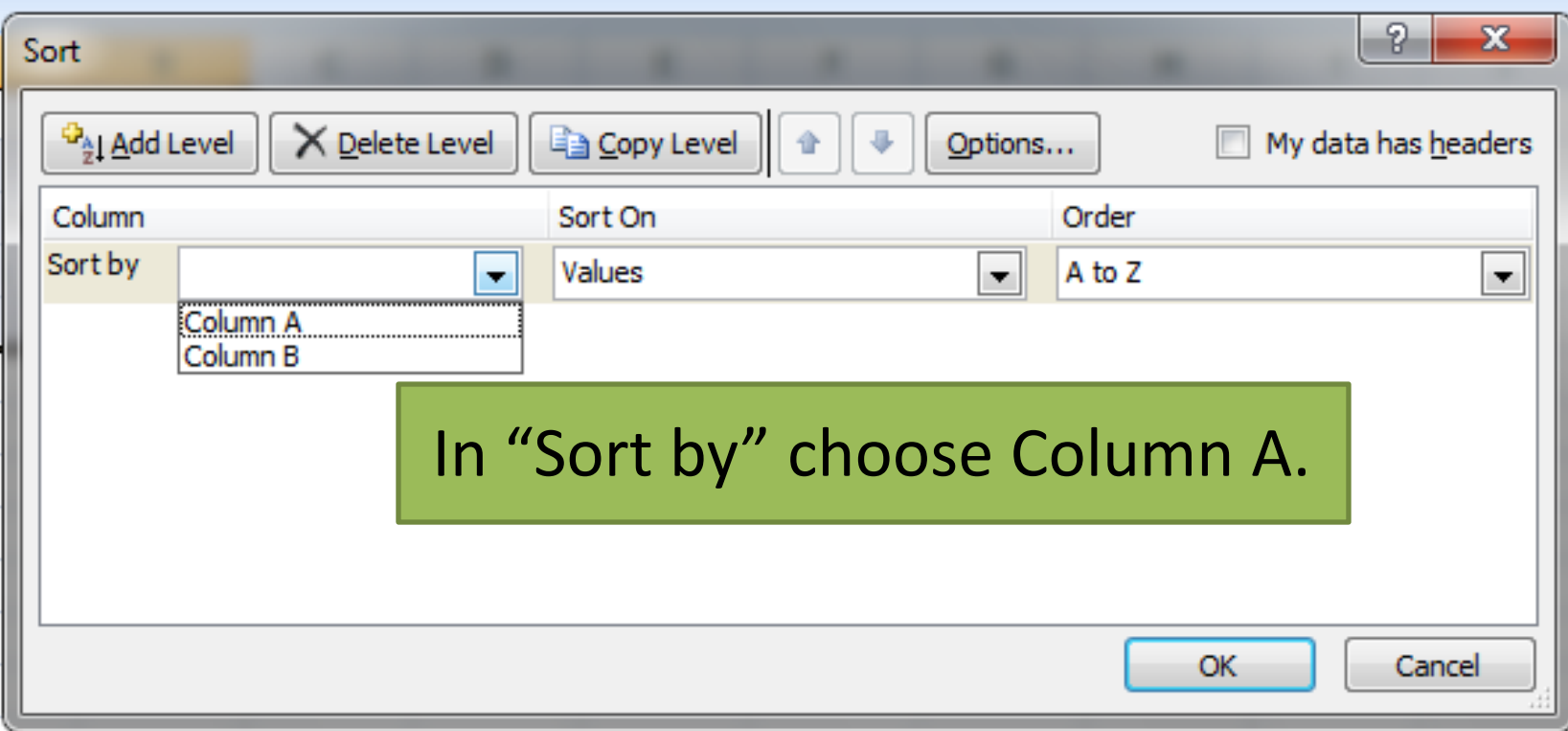
| | A | B |
|---|---|---|
| 1 | apple | Durrah |
| 2 | cake | Katherine |
| 3 | ice cream | Kim |
| 4 | pop corn | Ita |
| 5 | raw tunips | Sarah |
| 6 | | |

# REMEMBER!

- <u>Every</u> function must begin with an equal sign.

- Press "Enter" to finish inputting the entry
  - if you click away from the cell, Excel will think you want to enter in the value of another cell

- Functions need text between in quotations.
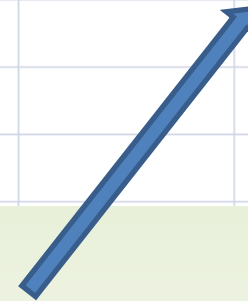  - "Like this."
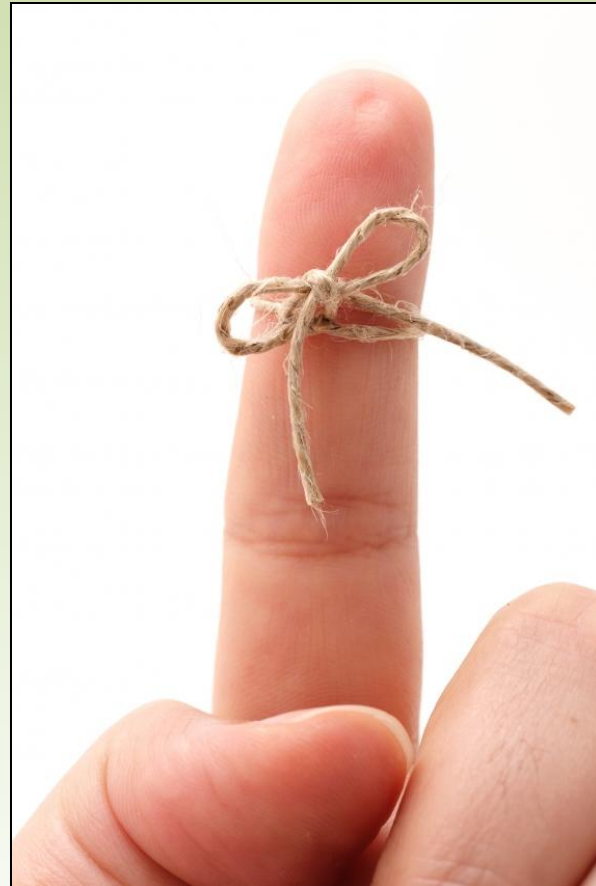
# MOST IMPORTANTLY

Machines understand things much differently than people do.

You and I would understand that someone who entered this…

**=SUUM(A1:B3)**

meant to add the values in that range.

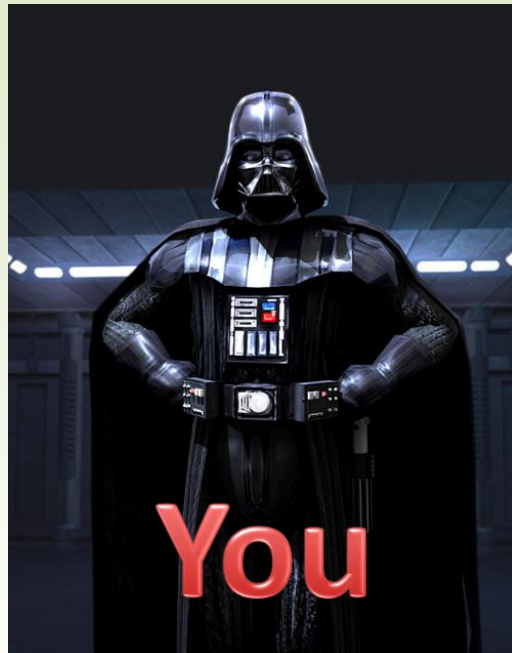|   | A | B | C |
|---|---|---|---|
| 1 | 2 | 5 |   |
| 2 | 3 | 6 |   |
| 3 | 4 | 7 |   |
| 4 |   |   |   |
| 5 |   |   | #NAME? |
| 6 |   |   |   |
| 7 |   |   |   |
| 8 |   |   |   |

**But in this situation, Excel gets confused because it has no idea what that entry means.**

# Computers only understand **perfect** commands

But that's why we like them so much.
They are here to do **exactly** what we say, and they don't mess up (most of the time)

**The computer is here to do <u>your</u> bidding.**

YOU'RE THE BOSS

You

Computer

# *Questions?*