204100: IT & Everyday Life – Final Review

Final Exam

- When: Friday, May 12th. 3:30pm – 5:30pm
- Where: RB5210
- What can/should you bring?
  - NO Electronics
  - Student ID
  - Pen & Pencils
  - One paper (book) dictionary
- Assignments won't be accepted after May 11th, midnight.
  - !!!Need FULL(1)/PARTIAL(0.5) to get credit!!!

Microsoft Word

Microsoft Word

- Basics
  - Copy (Ctrl-C)
  - Cut (Ctrl-X)
  - Paste (Ctrl-V)
  - Undo (Ctrl–Z)
  - Redo (Ctrl–Y)
  - Save, Save as
  - New, Open, Close

Microsoft Word

- Formatting
  - Page Layout → Page Setup
    - Paper Size, Margins, Layout, Header/Footer Size
    - Different first page, different odd and even
- Page Orientation
  - Portrait, Landscape
- Fonts
- Effects
  - Underline, **bold**, ^{super}script, $_{sub}$script, ~~strikethrough~~.

Microsoft Word

- Formatting (cont.)
  - Bullets & Numberings
    - Set numbering value
    - Define new bullet
    - What can be used as bullet points.
  - Text Alignment
    - Left, Right, Justified
  - Paragraph
    - Indentation
    - Spacing
  - Page Border
  - Columns
  - Line Numbers

Microsoft Word

- Find & Replace
  - Options
    - match case
    - whole word
    - Sound like (English)
    - All Word Forms (English)
    - Wildcards (like in Access)
      - *, ?
  - Replace/Replace All
- Spellchecking
  - Green/Red Squiggly Line
  - What won't be detected by spellcheck?
    - And how to fix this?

Microsoft Word

- Insert → Table
  - Components
  - Creating a Table
    - How many way you can create tables?
    - Drag mouse, insert, draw a table, excel spreadsheet
  - Entering Data
  - Alignment
    - Horizontal and Vertical
  - Resizing cells/columns/rows
  - Moving Table
  - Deleting a Border
    - What will happen?

Microsoft Word

- Table (cont.)
  - Insert/Delete Cells/Columns/Rows
  - Merge/Split Cells
  - Formatting Border/Fill
  - Quick Table
- Sorting Data
- In-table Calculation
- Converting Table ↔ Text

Microsoft Word

- Inserting Images
  - Picture (from file)
  - Clip Art
  - Text Wrapping
  - Moving and Resizing
  - Cropping
  - Rotating
- Picture Tools
  - Change Picture
  - Reset Picture

Microsoft Word

- Inserting Special Objects
  - AutoShapes
  - WordArt
  - TextBox
  - SmartArt
  - Symbols
    - How is symbol different from other special objects?
  - Equation

Ex. If you want to make a symbol such as π bigger, what do you need to do?

A. Highlight the symbol, and increase the font size.

B. Drag the corner to enlarge it.

C. Either A or B

D. This cannot be done.

Ex. If you want to make a symbol such as π bigger, what do you need to do?

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D. This cannot be done.

Answer: A

- Symbol is a character, which is part of a text.

Microsoft Word

- Styles
  - What is a style?
  - What can you do with style?
  - How do you change a style?
- Creating a Report
  - Header and Footer
  - Page Numbers
    - position/format/ counting option
  - Table of Contents
    - Assign Headings
    - Update Table
  - Cover Page

Microsoft Word

- Screen Capture
  - Capturing whole screen (PrtScn)
  - Capturing active window only (Alt-PrtScn)
  - What can you do after you capture a screen (paste)
- Printing
  - Selecting paper size
  - Print preview
  - Print Setting
    - Pages to be printed (, -)
    - Collated
    - Multiple pages per sheet

Microsoft Word

- Mail Merge
  - What is it?
  - Required:
    - Main document
    - Data source (recipients' data)
  - How to perform mail merge
    - Creating/Importing the main document
    - Creating/Importing recipients' data
    - What will you get at the end?

Which of following can you get from this mail merge?

Greeting «Title» «Last_Name» . How are you in «City»?

Title	First Name	Last Name	City
Mr.	Jimmy	Stewart	New York City
Dr.	Dan	Brown	Tokyo

A. Greeting Title Last_Name. How are you in City?
B. Greeting Mr. Jimmy. How are you in New York City?
C. Greeting Dr. Brown. How are you in New York City?
D. Greeting Mr. Stewart. How are you in New York City?

Which of following can you get from this mail merge?

Greeting «Title» «Last_Name» . How are you in «City»?

Title	First Name	Last Name	City
Mr.	Jimmy	Stewart	New York City
Dr.	Dan	Brown	Tokyo

Answer: D

- It has *Title*, *Last Name*, and *City* of the same record.

A. ou in City?

B. lew York City?

C. Greeti Brown. How are you in New York City?

D. Greeting Mr. Stewart. How are you in New York City?

Microsoft Excel

Microsoft Excel

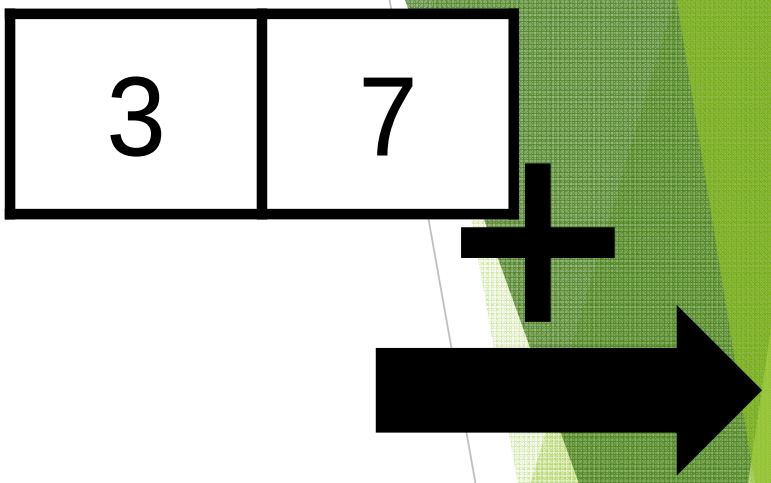
- Basics
  - Cell name (such as E17), row, column
  - Worksheet vs. Workbook
  - new, open, save (as)
  - Inserting/ renaming a worksheet
  - Print Preview
  - Data entry
  - Force new line with Alt-Enter

Microsoft Excel

- Selecting cells
  - Dragging mouse
  - Selecting entire row/column/worksheet
  - Select adjacent (shift), non-adjacent (ctrl) cells
- Resizing row/column

Microsoft Excel

- Auto Fill
  - How to use, mouse icon
  - Options
    - Copy Cells
    - Fill Series
    - Fill Formatting Only
    - Fill without formatting
    - Fill Days/Weekdays



Microsoft Excel

- Format Cells
  - Number format
  - Alignment
  - Border
  - Fill
- Printing

Microsoft Excel

- Cell Reference
  - Relative Reference
    - C3
  - Absolute Reference
    - $C$3
  - Reference cell from another worksheet
    - sheet1!$C$3

Example Question

If I want to calculate the discounted price from the prices in cell A1-A4, and the discount rate at cell C2 and put the result on B1-B4 respectively, how should I type the formula at B1, so I can copy it to B2-B4 and have they work properly?

	A	B	C
1	25	18.75	
2	35	26.25	25%
3	42	31.5	
4	17	12.75	

A. =A1*(1 – C2)

B. =$A$1*(1 – C2)

C. =A1*(1 – $C$2)

D. =$A$1*(1 – $C$2)

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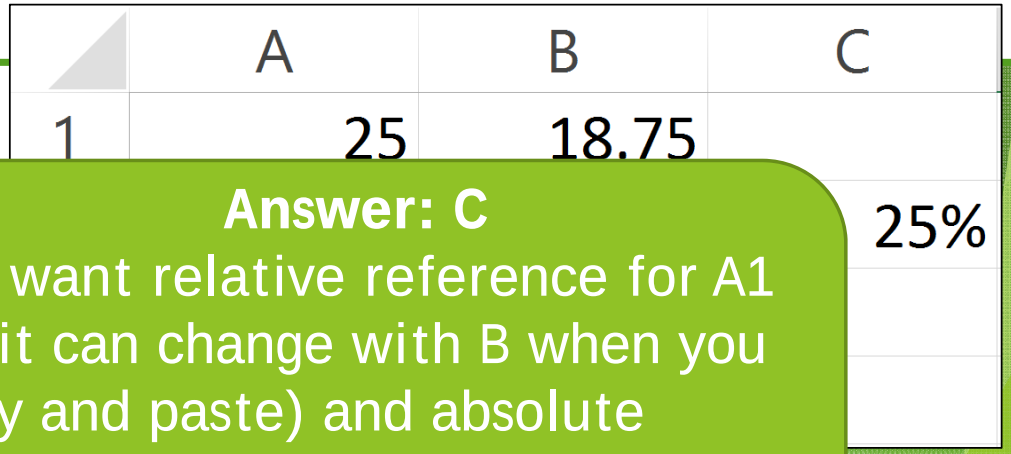

Answer: C

You want relative reference for A1 (so it can change with B when you copy and paste) and absolute reference for C2 (so it remain the same regardless of where you paste in column B)

Microsoft Excel

- Formula
  - How to write a formula (=)
  - Operators (+,-,*,/) precedence
    - Perform which first?
- Function
  - How to use
  - Search/View/Select a function
  - Example of useful functions
    - sum, max, min, average, stdev
  - If() and the logic (AND(), OR())
- Sorting

=3*50/5^2

Microsoft Excel

- Charts
  - *Design* tab
    - Changing Chart Type
    - Switch Row/Column
    - Select Data
    - Quick Layout
    - Quick Styles
    - Move Chart

Microsoft Excel

- More Charts
  - *Layout* tab → Labels
    - Chart Title
    - Axis Titles
    - Legend
    - Data Labels
    - Data Table
- Conditional Formatting
  - What can you do with it?
  - How to do it?
  - Order of rules.

How to highlight a cell when the value is less than 0 or more than 50?

Microsoft Excel

- Data Analysis
  - Correlation
    - Interpreting the results
      - Positive/Negative
  - Histogram
    - Preparation
      - What are bins?
    - How to read output
- What-if Analysis (Goal Seek)
  - How to use it to solve equations/ get the right value for a cell.
- Regression
  - Make sense of the output
    - R-Square
    - P-value
  - Derive the model (equation) from the output

Microsoft Excel

	Coefficients	Standard Error	t Stat	P-value
Intercept	2.055664807	0.020970525	98.02639	6.2417E-35
X1	-0.001515759	0.001988074	-0.76243	0.452667722
X2	3.50011908	0.002075558	1686.351	4.83322E-67
X3	1.701154987	0.001979671	859.312	1.98069E-59

- Ex. With the above regression results, which of the following equations is the best one to explain it?
  - A. $Y = 0.0210 + 0.002\ X_1 + 0.002\ X_2 + 0.0020\ X_3$
  - B. $Y = 0.0210 + 0.002\ X_2 + 0.0020\ X_3$
  - C. $Y = 2.0557 - 0.0015\ X_1 + 3.5001\ X_2 + 1.7012\ X_3$
  - D. $Y = 2.0557 + 3.5001\ X_2 + 1.7012\ X_3$

Microsoft Excel

	Coefficients	Standard Error	t Stat	P-value
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X3	1.701154987	0.001979671	859.312	1.98069E-59

- Ex. With the a
  following equa
  - A. Y = 0.0210 +
  - B. Y = 0.0210 +
  - C. Y = 2.0557 – 0.0015 X_1 + 3. $_2$ + 1.7012 X_3
  - D. Y = 2.0557 + 3.5001 X_2 + 1.7012 X_3

Answer: D

- Coefficient of the Intercept is the constant of the equation. (2.0557)
- With too high P-value, X_1 is not suitable to explain Y.

Data Processing

Data Processing

- What is what?
- Type of Data Processing
  - Manual processing)
  - Automatic)
    - Online
    - Batch
      - Master File vs. Transaction File

Data Processing

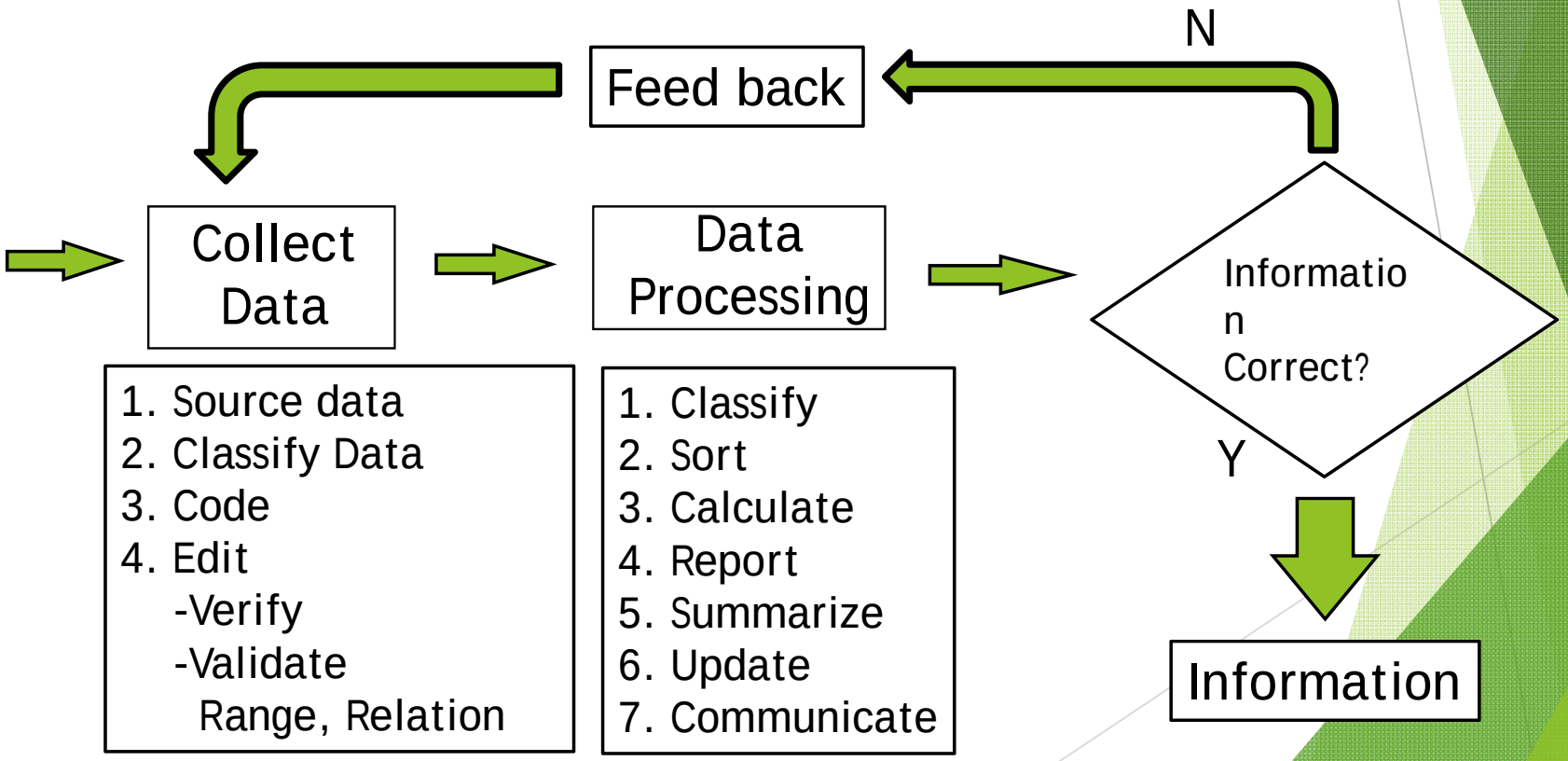
- Data Collection
  - Methods
  - Characteristics of Good Data
    - Accurate, Timely and Complete
  - Encoding
    - Which fields? / How to?
- Verification and Validation
  - Edit
  - Verify
  - Validate
    - Range Check
    - Relation Check

Data Processing

- Processing
  - Calculating
  - Updating
  - Reporting
  - Summarizing
  - Sorting
  - Searching
  - Classification

Computer Data Processing w/ Feedback

- Processing



Data Processing

- Data Organization
  - Bit
  - Character
  - Field
  - Record
  - File (Table in Access)
  - Database

Data Processing

Ex. If a field need 20 characters (bytes) to store un-encoded data per record, and only need 2 characters encoded. If we have 1000 records, how much space for just this table, in bytes, would we have saved?

A. 2,000 bytes
B. 8,000 bytes
C. 18,000 bytes
D. 20,000 bytes

Data Processing

Ex. If a field need 20 cha
store un-encoded data
need 2 characters enc
records, how much spa
in bytes, would we hav

A. 2,000 bytes
B. 8,000 bytes
C. 18,000 bytes
D. 20,000 bytes

Answer: C

- Unencoded, you need 20 × 1,000 = 20,000 bytes
- Encoded, you need 2 × 1,000 = 2,000 bytes
- Therefore, you save 20,000 – 2,000 = 18,000 bytes

Of course, in practice you'd need another table to contain translation between encoded and unencoded data, so actual space saved will be less.

Microsoft Access

Microsoft Access

- Database — Table — Record — Field
- Table
  - Table Design
    - Store what? — Which fields?— Data type/size
  - Creating table in access
  - Data entry
  - Field — Insert/Delete/Move
  - Table — copy/renaming/Delete

Microsoft Access

- Table
  - View
    - Datasheet
    - Design
  - Field
    - Data Type
    - Field Size
    - Indexed
    - Primary Key

Microsoft Access

- Query
  - Searching
  - Query Wizard
    - Select table/query→ select fields → naming
  - Query Design
    - Select table
    - Select fields
      - Sort
      - Show/Not Show
      - Criteria
    - Criteria
      - Comparison
      - And/ Or
      - Wildcards (*, ?)
    - !Run

Microsoft Access

- Working with Multiple tables
- Relationship
  - Meaning
  - Type (1-to-1, 1-to-many, many-to-many)
  - Primary Key vs. Foreign Key
    - Data type/field size
    - Indexed (no duplicate/ duplicate ok)
- Creating a relationship on Access
  - Enforce Referential Integrity
  - Cascade Update/Delete
- Inputting foreign key
- Query with relationship
  - Table.field

Microsoft Access

- Form
  - Data Entry Tool
  - Form view | Layout view | Design view
  - Navigation (first/previous/next/last record + create new record)
  - Form
  - Split Form
    - Form + Datasheet
  - Multiple Items
    - Tabular, but can be adjusted

Microsoft Access

- Form (cont.)
  - Form Wizard
    - Step by step
    - Select table→ select fields → select layout→ select style → naming → start filling in data or go to Design view
  - Blank Form
    - How to insert fields
  - Form Design
    - Blank form in design view
    - Header/Footer
    - Inserting Title, Labels, Logo, Pictures

Microsoft Access

- Report
  - Design View | Report View | Print Preview
  - Report
  - Report Wizard
    - Select table/query → select fields
    - [With relationship] Selecting view
    - Select grouping
    - Select sorting (within group)
    - → Select layout → select style → naming → view the report or go to Design view

Microsoft Access

- Report (cont.)
  - Report Design
    - Start with blank report in Design view
    - insert fields
    - adjust/move
    - insert title, labels
  - Print Preview