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Network Basics

- access: log in to computer with your usual UPEI id and password,
- storage: in your personal directory on the computer (Documents or `P:` drive), but beware that files may not remain on computer after logout!!,
- printing: usually not needed here (maybe possible),
- file transfer: use flash drive/memory stick, e-mail attachment or cloud drive (e.g. Dropbox or Google Drive, log in via myUPEI platform)).

Practical Information

Outline of lab session:

- introduction to Minitab software,
- demonstration of descriptive statistics (graphics and numerical summaries) from the lecture, incl. review of measures of spread and outliers (pages 1L−15/17),
- individual work on the exercises.

Today's exercises:

- Meet Minitab (version 13): Chapter 8 (tutorial) + 1:1,10,16,42,72; x:1; 1:51,77 (1:22,65; x:2; AI:1,2),
- note suggested order; exercises in parenthesis are optional (maybe check if they seem to be useful for you).

Notes and questions for specific exercises:

- Meet Minitab: see slide 1P−5 for notes on tutorial,
- 1.10, 1.16, 1.42,...: numbers refer to Supplementary Exercises for IPS7e, accessible in schedule table,
- x.1, AI.1,...: extra exercises (at Solutions... webpage),
- x.1: use statistical applet (link to the applets at course homepage, below schedule table),
- 1.10, 1.16, 1.42, 1.51: data files `ex01_010`, `ex01_016`, etc. are available at Solutions... webpage, in Minitab (`.mtw`) and `.csv` formats.

Where is ...

- Course homepage: `stryhnstatistics.ca/vhm801`, for 2022 Fall Semester,
- Software:
  - Minitab, version 21: via Programs menu,
  - Stata : you need to use your own laptop,
  - R, version 4.2.0 and RStudio: via Programs menu,
- Exercise problems:
  - standard (e.g. 1.16): in file containing Supplementary Exercises for IPS7e, accessible at directly in schedule table and at Solutions... webpage),
  - extra (e.g. x:1 or AI:1): at Solutions... webpage,
- Exercise datasets:
  at Solutions... webpage, both in Minitab (`.mtw`) and `.csv` formats, also in a combined `.zip` file,
- Exercise solutions: at Solutions... webpage,
- more Minitab...:
  - various user guides: in Minitab folder at Moodle site,
  - 30-day trial software: at `www.minitab.com`,
  - full software: `G:\NetSetup`, or talk to ITSS, in particular if you want Minitab installed on a Mac.

Basics of Minitab

- contains an interactive, menu-based user interface and a simple high-level programming language,
- data represented as worksheets
  - ordinary worksheets with rows $\sim$ observations ("individuals") and columns c1, c2 ... $\sim$ variables,
  - "constants" k1, k2,... (plain numbers/variables),
  - matrices (we won't use these).
- data input: use `File-Open` menu to import Minitab worksheets (`*.mwx,*.mtw`) and projects (`*.mpx,*.mpj`) and other standard file formats,
- key windows:
  - worksheet window(s) (Ctrl−D): the data,
  - output (Ctrl−M) window, and Navigator: results,
- other sometimes useful windows (enabled in `View` menu):
  - command line: for manual entry and run of commands,
  - history: displays past commands, allows copy to command line window,
- help: menu-specific/general through browser, also "Assistant" (feel free to explore),
- save work as project files (`*.mpx`), worksheets (`*.mwx`), or parts of output window (right-click to bring up menu).

Calculations and Data Manipulations

Calculator (`Calc-Calculator`):

- a powerful calculator with lots of built-in functions,
- works both on columns and constants,
- if you want to store a result in a constant with a name, use first k1 (or k2...) and rename it in the command (session) window as follows: `name k1 'myname'`.

Generating patterned columns
(`Calc-Make Patterned Data`):

- very often you'll need to generate columns with a pattern, e.g. row numbers,
- several easy-to-use variants, try them and see the result!

Manipulating columns (`Data` menu):

- to copy and delete columns,
- to sort columns (all or some — be careful not to mess up the worksheet!),
- to stack or unstack columns (very useful for reshaping the data):
  - stack: put one column after another one,
  - unstack: split a column into several columns.

You can list data in the session window (`Data-Display Data`).

Notes for Meet Minitab Tutorial

Changes and recommendations when going through Steps 1–13 of the tutorial using Minitab versions 19–21:

(2): the project manager no longer exists in Minitab 19; find the data file under "Extra" (at Solutions. . . webpage),

(3): you may go to Step 7 first, and tick "Assign as a formula" before OK'ing the calculation (then you'll get a demonstration of how the formula works when you type in further data in Step 3),

(5): save in your personal directory or on memory stick,

(6): the default output includes the number of missing observations (N^*), but not the trimmed mean; again, the reference to the project manager is obsolete,

(7): use the "hat" symbol (e.g. `^2`) instead of "`**`" for powers,

(8): use `Graph-Scatterplot-Simple` menu,

(10): this is a demonstration of how to use the Session window to document the analysis — it works differently in Minitab 19–21; alternative method:

* send to Word/PowerPoint from the menus that appear when you right-click within the Output window: for each element of the window separately,

(11): skip the printing; also, the entire Output window can no longer be accessed.