

## Index of 1-P

Page	Title
1	Practical information
2	Where is ...
3	Basics of Minitab
4	Hints on settings and practices
5	Calculations and data manipulations
6	Notes for Meet Minitab tutorial

### NETWORK BASICS

- access: log in to computer with your usual UPEI id and password,
- storage: in your personal directory on the computer (My Documents...), but 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 docs (docs.google.com, log in via UPEI platform)).

## PRACTICAL INFORMATION

### Outline of lab session:

- review boxplot and numerical summaries: mean/median, percentiles, standard deviation (pages 1L–16/17/18/19/20),
- introduction to Minitab software,
- individual work on the exercises.

### Today's exercises:

- Meet Minitab (version 13): Chapter 8 (tutorial) + 1: 1,10,16,42,72; x:1; 1:65,51 (1:22,77; x: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–6 for notes on tutorial,
- 1.10, 1.16, 1.42, . . .: numbers refer to Supplementary Exercises for IPS7e, accessible at homepage (below schedule table),
- x.1, x.2: extra exercises (at Solutions. . . webpage),
- x.1: use statistical applet (link to 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: [people.upei.ca/hstryhn/vhm801](http://people.upei.ca/hstryhn/vhm801) (Google “vhm801”), and go to 2019 Fall Semester,
- Software:
  - Minitab, version 18: via Programs menu,
  - Stata, version 13: can be started from `G:\Stata13`; better to use version 16 (or earlier) on own laptop,
  - R, version 3.5.0: via Programs menu,
- Exercise problems:
  - \* standard (e.g. 1.16): in file containing Supplementary Exercises for IPS7e, accessible at homepage (below schedule table and at Solutions...webpage),
  - \* extra (e.g. x:1): at Solutions...webpage,
- Exercise datasets:  
at Solutions...webpage, both in Minitab (.mtw) and .csv formats, also in a combined .zip file,
- Exercise solutions (except for a few optional exercises):  
at Solutions...webpage,
- more Minitab...:
  - \* user guides (vers. 15–18): in Moodle folder,
  - \* 30-day trial software (vers. 19): at [www.minitab.com](http://www.minitab.com),
  - \* full software (vers. 18): `G:\NetSetup`, or talk to ITSS.

## 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  $c_1, c_2 \dots \sim$  variables,
  - “constants”  $k_1, k_2, \dots$  (plain numbers/variables),
  - matrices (we won’t use these).
- data input: use **File-Open** menu to import Minitab worksheets (\*.mtw) and projects (\*.mpj) and other standard file formats,
- key windows:
  - worksheet window (Ctrl-D): data,
  - session window (Ctrl-M): results and commands,
- other sometimes useful windows:
  - project manager window (Ctrl-I): worksheet summary, constants and matrices, plus access to history (previous commands executed), graphs etc.,
  - command line editor (Ctrl-L): manual entry of commands (also in session window, if enabled),
- help: lots!! (menu-specific, tutorials, StatGuide...)
- save work as *project files* (\*.mpj) or save separate windows (worksheet  $\rightarrow$  \*.mtw, session window).

## HINTS ON SETTINGS AND PRACTICES

### Settings:

- session window settings (menu **Editor**):  
**Show command line**, to get commands displayed beside the session window,
- maybe make project visible,
- maybe remove toolbars: **Worksheet**, **Graph editing**, **Graph annotation**,
- save your settings using **Tools-Options-Window Layout**.

### Documenting your work:

- natural places to write comments about your analysis (see Minitab tutorial for further details):
  - \* session window (**Add Note** in menu),
  - \* ReportPad window (accessible from Project window),
  - \* or an external file,
- avoid too much editing in the worksheet, because the changes you make are
  - i) undocumented,
  - ii) risky (you may make errors without noticing),instead use menus and commands to achieve your aims.
- you can list data in the session window using **Data-Display Data**.

## 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.

## NOTES FOR MEET MINITAB TUTORIAL

Changes and recommendations when going through Steps 1–13 of the tutorial using Minitab version 17:

- (2): Minitab 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 (on m-drive, or memory stick),
- (7): use the “hat” symbol (e.g.  $\wedge 2$ ) 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 — this works differently in Minitab 18; alternative methods:
  - \* ReportPad window: allows to include both text (copied from session window or typed in) and graphs (right-click on active graph),
  - \* send to Word/PowerPoint from Menu in Session window: same advantages as ReportPad window but creates an extra file,
- (11): skip the printing.