Lab 2: Statistics 213 (L05) - Fall 2007

For either manually entered data or data appearing in a data file,

- Draw the Stem-and-Leaf plot.
- Find mean, median, standard deviation, and quartiles.
- Draw Box plot.

- The length in millimeters 58 male data as well as the 42 female dover sole data discussed in class in the file, 'Lab2.xls'

  male: 386 358 370 381 398 341 339 347 397 387 340 427 381 394 384 331 415 420 395 366 371 364 408 398 389 405 339 390 414 410 436 439 419 423 421 388 403 411 392 419 398 409 371 371 373 420 387 410 417 451 346 393 439 374 412 404 425 413

  female: 363 345 361 337 442 351 341 357 292 373 360 380 375 357 388 384 349 350 386 394 334 379 355 376 382 327 393 366 316 389 390 405 356 342 400 366 385 362 369 412 364 457

1. Draw the stem-and-leaf plot for the male data (explain the difference when increment: 5 and 10).
2. What proportion of the observations in the male data are within 2 standard deviation of the mean? ( )
   Hint: Find the interval ($\bar{X} - 2s, \bar{X} + 2s$) then count the number of observation in the interval (i.e. $\frac{\#}{N} * 100$).
   Is this consistent with Empirical rule ? ( )
3. Calculate inner and outer fences. Is there any outliers?
   ( )
   Hint: Inner fences: $(Q_1 - 1.5IQR, Q_3 + 1.5IQR)$
4. Draw a box plot for both. Does the female data confirm your answer in (3) ?

- Turn on the computer and activate the MINITAB program: Start ⇒ Programs ⇒ MINITAB 14 ⇒ MINITAB

  Session Window: provide you with output; Data Window: contain any data entered by yourself or any data file which is loaded into the window

- Entering data manually: click the left mouse button over the top left cell in the data window: enter the data in the first column (C1): click on the cell located between the column label (C1) and the first data point to enter a new name rather than column C1

- Loading a file: File ⇒ Open Worksheet (enter file name and left click Open)

- **Stem and leaf plot**: Graph ⇒ Stem-Leaf... (click C1 and "select" ; the Increment: type the desired numerical value for the increment, 5 or 10)

- **Measure of center, spread and relative standing**: STAT ⇒ Basic Statistics ⇒ Display Descriptive Statistics (click "statistics.." and choose "mean, standard deviation, first quartile, third quartile, median, interquartile range")

- **Box-plot**: Graphs ⇒ Boxplot (select with groups; select C1 and C2 moving them from the left hand side of the window into the Graph Variable)

- Exit MINITAB: MINITAB will ask you if you want to save things, select NO