Homework 1, Due F 01/19

Read Chapter 1 (Moore).
Read the section on **Assignment Format**, Page 2 from
http://math.arizona.edu/ abhishek/math160/policy.pdf .

Problems
1. Look at the data set attached with the homework. Download it.

a) What is the population that we are studying through this data set? What individuals does it describe?

b) Apart from SNO, how many variables does the data set contain? Which of them are categorical and which are quantitative?

c) Make a table showing showing the sex counts. The table should have three columns, namely **Sex**, **Count** and **Percent count**. Draw a pie chart to display the data. Mark clearly the angles in the chart. What do you see?

d) Divide your Majors into few important categories, one of them being **Others**. Make a table showing the different categories, total number of students, number of female and male students in each category. Make a bar graph of the total counts with bars in order from tallest to shortest. What is the most popular subject among the students? Is it significantly apart from other subjects?

e) Make a table showing the percent of females and males in each Major category from part (d). Make two separate bar graphs for females and males respectively. What are the similarities and differences between the graphs?

f) Divide the ages of the students into classes of equal length namely, $17.0-18.9$, $19.0-20.9$, $21.0-22.9$, $23.0-24.9$ and $25.0-26.9$ and display the number of students in each class. Make a histogram to plot the data. Describe the shape of the histogram. Is it symmetric, skewed to the left/right or none? Does it have a single peak? Are there any outliers? What is the average age of the students?

g) Draw a stemplot to display the date of birth. The stems are the year of birth which are $82, 83, \ldots, 88$ and the leaves are the months which take values: $01, 02, \ldots, 11, 12$. Describe the shape, center and peaks of the distribution. Are the results consistent with that of part (f)? Why/Why not?

h) Make a **back to back stemplot** to compare the female and male date of births. That is, use one set of stems (year of birth) with two sets of leaves (months), one to the right and one to the left of the stems. (Draw a line on either side of the stems to separate stems and leaves). Does it appear that girls are older than boys?

2. Ex 1.32, Page 30 (Moore).